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Kari McCluskey,
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Other customers, please send this form to:

Dr. Sandra K. Linke,
Director, International Centre for Innovation in Education (ICIE-Germany),
Postfach 12 40, D-89002, Ulm-Germany.
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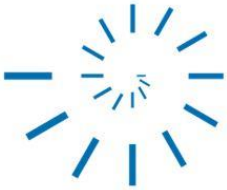

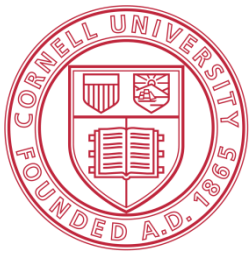

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Where To From Here? Searching for Some Upside Amidst Many Downs

Taisir Subhi Yamin; Ken W. McCluskey

Just a few months ago, our personal and professional lives – like the lives of so many others worldwide – were turned topsy-turvy by the deadly, fast-spreading COVID-19. A little behind schedule, we had been planning to go to press with this issue of IJTDC early in 2020, when suddenly the novel coronavirus hit and began dominating conversation and headlines virtually everywhere. Just like that, the pandemic was upon us; it was as if one day we awoke to find that our social landscape had been totally reinvented. Since the ramifications were almost unimaginably significant, it seemed best for us to hold off, take a pause, and adjust to the life-changes that so suddenly and profoundly impacted millions of people around the globe.

Adapting to a Changed World Order

"New normal" has arisen as the most common descriptor of the present situation. And in many ways, that term succinctly captures our recently reshaped reality. On the other hand, although it highlights our current altered condition, to us the label suggests a too-permanent state of affairs, almost implying that our short-term reactions will become irrevocably entrenched as part of the world taken for granted. Some of the recent changes in lifestyle will naturally be with us for a long, long while, but many newly created others will soon simply end up disappearing or being substantially re-modified.

Put another way, to describe our present state of affairs as the "new normal" is not precisely accurate, for at present we are part of an evolving, yet-to-be-determined normal. Certainly, the situation is disconcertingly disruptive and grave, what with the threats on two interconnected fronts: public health and economic. Tragically, many people have lost their lives; many their livelihoods. And it goes without saying there have been other unfortunate secondary consequences and spin-offs. However, as we search for equilibrium during the inevitable and painful societal shifts, there are emerging opportunities. Yes, even during all the chaotic devastation and loss, we can be proactive, balanced, and innovative. Indeed, we can plan – at least to some extent – for the coming exponential changes and affect them for the better.

Technology to the Fore

It would be wrong to discount the fact that some of the recent changes have been positive. In keeping with response efforts in most universities across the land, we at the University of Winnipeg (UW) have attempted to level the COVID-19 curve by encouraging washing and sanitizing (of hands and objects), observing social distancing, and offering the bulk of our courses remotely. Technologically speaking, online alternative applications – such as Adobe Connect and Desire to Learn – are now playing a prominent part in online teaching and learning. UW and many other institutions have gone with Zoom as the approach

of choice. In what amounted to a baptism by fire for most of the faculty, a large proportion of our instructors discovered their latent inner-techie and how to conduct online classes much more productively than before. It was also surprising for many of us to find that we could make the online class atmosphere far more interactive than we had initially expected. In very real ways, dimensions of our teaching have been refined and enhanced. So, hats off to Zoom, Adobe Connect, Desire to Learn, Cisco, webinars, and other useful platforms; they have helped us react in a meaningful manner, improved course design and delivery, and – in the short run – saved the day for universities and public schools during the pandemic (even preserving the school year, and graduation, for a lot of students). And clearly, by far and away the majority of post-secondary courses will continue to be delivered remotely for quite some time. Further, now that its vast potential is being discovered by an ever-expanding audience, online instruction will surely play a permanent part – in hybrid-type fashion – in our classrooms of the future.

Nonetheless, as most sophisticated scholars in the field seem to agree, technology was not designed to be, nor is it about to become, a long-tem replacement for in-person teaching – the flagship of our pedagogical armada. Said simply, teaching vis-à-vis allows sensitive educators to gain an unparallelled view of what is going on in the classroom: Who is grasping the material? Who is struggling? Who is excelling? Who is reluctant? Who is daydreaming? Who is troubled? Who is bullying (and who is a victim of it)? Who is exuberant? Who is shy? Who is interacting with whom? etcetera, etcetera, ad infinitum. While technology gives us the flexibility to adapt instructional methods to better fit our purpose and makes things possible that were not possible before, it shouldn't be driving the educational bus – teaching, at its core, is a people enterprise.

In our opinion, we should go down the technological road in a positive frame of mind, but with caution. In a presentation on the pluses and minuses of technology, a past Manitoba Deputy Minister of Education observed that while one might truly savour the first half-bottle of wine, it may not always be wise to immediately polish off the second half. Likewise, instruments of change must be employed sensibly and controlled, not recklessly overused (Farthing, 2015). Still at the novelty stage, some of us are now probably dipping into the bottom half of the bottle and calling more Zoom meetings than we really need. Perhaps then, certain Zoom-aholics ought to resist the allure of the new tool, and show a bit more restraint.

And the danger of technology goes far beyond mere overuse – there is a real threat lurking in the background. Hacking, phishing, and identity theft that often go far beyond annoying are likely to increase in the wake of COVID-19. Even when it seems innocuous, there is a need to remain vigilant. To illustrate, for years media scholars have apparently warned, "if the product is free, chances are the commodity is you" (Flisfeder, 2020, p. A7).

Anyway, a year or so ago, a few of us at UW retired our computers part-time (i.e., we refrained from booting them up on two working days per week). Hearing this news, one of our colleagues asked, "My goodness, whatever do you do???" Well actually, besides working the old-fashioned pen-and-paper way, we did people things: We visited around with other faculty members, discussed research (and other topics) over coffee, played racquetball, and made time for walks with grandchildren (who christened these interludes "walkie-talkies"). And here's the pièce de résistance – we would often just recline in our chairs and think! It was liberating, and we felt the better for it. Our pre-pandemic routine has been partially disrupted by COVID-19, but we intend to get fully back on track as soon as possible. And even now, our computers remain off those two days each week.

Relationships

Say what you will, the essence of teaching is interpersonal interaction. One can engage with learners in different ways and formats, but to our minds face-to-face trumps remote instruction most of the time. Subtle nonverbal cues and connections play a huge role in communication between teachers and students, and likely account in large part for the sixth-sense "intuition" that defines sensitive educators across the spectrum. A critical tool that enriches the educational process, technology can supplement and complement direct person-to-person interaction in wonderful ways. That said, to drift too far away from the essence of firsthand human contact and connectedness is to diminish the sacred art of teaching. It is understood that part of the traditional learning experience we are talking about for children includes peer relationships, social networking (in person, not always by electronic devices), and play (not just video games). When it is safe for all concerned, teachers at every level must strive to retrieve the in-person ingredient that has, of necessity, been put temporarily on the back burner.

After all, it's not just about information and knowledge – the human element and relationships are a big part of life itself. In developing our mentoring programmes at UW, Alan Wiebe (2013) has injected relationship-building into the mix. He described the rationale in this way:

> We've all heard realtors shout about the virtue of 'Location, Location, Location' when discussing what is important in the sale of a home or business. I would venture to say that in our field, the emphasis on the new 3Rs – 'Relationships, Relationships, Relationships' – sets the stage for exciting and positive outcomes in the schools. Teachers-to-be can learn to develop and nurture meaningful relationships with young people through the dynamic experience of being mentors to disconnected individuals. (p. 98)

Obviously, establishing human relationships is at the heart of working with marginalized, disenfranchised populations. It has even been written that, in attempting to reach and teach troubled children and youth, the "Relationships … are the intervention" (Gharabaghi, 2008, p. 31). And make no mistake, it's not just an early years or adolescent thing – although relationships may manifest themselves differently across the life span, they matter at every stage of our existence.

Servant Leadership and Service Learning

Vigilance must go far beyond technology. It is wise to beware of well-meaning individuals who think they know what is best for the rest of us, for often they lead naïve or uninformed followers down perilous paths. They may mean well, but we should remember the old adages, "The road to hell is paved with good intentions," and "Believing passionately that something is true does not necessarily make it so."

In other cases, leadership motives are far from benign. Influential corporate CEOs, ambitious politicians, and ideologues of various stripes are frequently driven by the profit motive, the need for power or attention, and rigid "isms" rather than flexible reason. All too often, there is no light at the end of their self-centred tunnel vision.

It was inevitable: With the advent of the coronavirus came unscrupulous, profiteering, opportunistic, new-version carpetbaggers looking to score a pandemic bonanza. And more are on the way, chasing the almighty dollar with a vengeance. Businesses and financial

institutions of various types have bombarded us with COVID-19 catchphrases such as, “We are all in this together.” Sometimes it’s true; sometimes not so much. To really reach out and help means giving or doing something tangible, something that often involves personal or corporate sacrifice. True altruism requires more than made-to-look-good slogans or jingles. It does not mean getting rich or benefitting from the misfortunes of others. It does mean giving of one’s time and energy and putting people before profit (e.g., donating a portion of massive reserve funds to assist those catapulted suddenly into desperate straits, forgiving rent or loan payments, or cutting obscene, usurious interest rates). Rather than hiding behind a façade of altruism, genuine giving demonstrates an authentic desire to help, to share, and to move ahead in a spirit of partnership.

Robert Greenleaf (1998, 2002) was an eloquent advocate for “servant leadership.” In his compelling writings, he argued that people should first serve others before taking on a leadership role themselves, and that leaders should have a deep-rooted commitment to social and personal responsibility, to altruism, and to real selflessness. From his people-focused perspective, true leaders must place the wishes and needs of others above their own. At times, Greenleaf seemed almost to advocate for what some would suggest is civil disobedience: Don’t become a leader for the wrong reasons – power, attention, or money; and don’t blindly follow leaders who are governed by the wrong motives – power, attention, or money.

Hand-in-hand with servant leadership comes “service learning,” where young people have the opportunity to become involved in significant, real-life activities and projects. Through direct participation, they experience the impact of social responsibility, the meaning of citizenship, and the joy of serving others. Many educators, ourselves included, believe that it is important for students – from kindergarten through graduate school – to learn about values, morality, and ethics (Ambrose & Cross, 2009). Ben Franklin would have concurred. In his words, “It is a grand mistake to think of being great without goodness” (https://www.brainyquote.com/quotes/benjamin_franklin_109066).

An abundance of service project possibilities are available through programmes such as the Community Problem Solving component of the Future Problem Solving Program International (https//www.fpspi.org). Also, a substantial amount of literature, including the work of Larry Brendtro and his colleagues, highlights the value of service learning activities in empowering talented at-risk children and youth (Brendtro & du Toit, 2005; Brendtro, Mitchell, Freado, & du Toit, 2012; Brendtro & Shahbazian, 2004).

Albert Schweitzer summed it up well: “I don’t know what your destiny will be, but one thing I know: the only ones among you who will be truly happy are those who will have sought and found how to serve”:

(https://www.brainyquote.com/quotes/albert_schweitzer_133001).

Gifted Students and the Pandemic

Of late, the two of us have spent a fair amount of time thinking about how the education of many young people has been unceremoniously disrupted in some way or another by the coronavirus. Teachers are doing some amazing work to adapt and keep things on an even keel, but there can be no doubt that – despite online apps, home tutoring, and a variety of innovative strategies – multitudes of kids are having a tough go of it. Although it is imperative that safety precautions be followed, isolation, limited play opportunities with peers, bothersome masking, and so on are bound to take a toll on children socially and academically.

Given our specialty area, it will come as no surprise to learn that we, along with several colleagues, began wondering what the implications of COVID-19 might be for gifted and talented children. For years, professionals in the field have argued G/T students are overlooked and underserved within the school system, to the point that their talents often remain unnoticed, unnurtured, and underdeveloped. The arrival of the coronavirus has introduced a heavy-duty complication, in that – in this new context – there is now a growing possibility many gifted students will be largely forgotten yet again … twice invisible, as it were. If we don't want their bountiful potential to be left largely unfulfilled, it is time to make sure no children – including those of high ability – are lost in the shuffle.

Stepping Up to the Plate

In numerous countries throughout the world, committed professionals have developed programs, created centres, and founded organizations to support gifted children, their parents, and their teachers. The focus varies from place to place, of course, such that – fortuitously – many areas of gifted theory and practice are thoroughly researched, assessed, and evaluated on an ongoing basis. At the International Centre for Innovation in Education (ICIE) and Lost Prizes International (LPI), our teams have been able to partner with a number of influential, altruistically driven national and international organizations, including the International Higher Education Teaching and Learning Association (HETL), Maple Bear Global Schools (MBGS), Minority Achievement, Creativity, and High Ability Center (MACH III), and Reclaiming Youth At Risk, among others. As many of us in the gifted/talented sphere know, these well-established bodies do exceptional work, sponsoring major conferences on a regular basis, offering recognized courses and training programmes, providing service delivery projects for children and youth, and publishing and disseminating newsletters, professional journals, books, and curriculum packages.

In gifted education, creative and critical thinking, innovation, enriched curriculum, and leadership are front and centre. Practitioners in the discipline are uniquely equipped to lend a hand in these tumultuous times, for they tend to have both theoretical background and in-the-trenches experience in terms of enhancing the educational environment (within and beyond the school), identifying and nurturing student talents, and programming for exceptionally bright young people. By definition of their skill set, educators in the gifted domain are positioned to offer a lot to students, parents, teachers, administrators, researchers, and government officials. Primarily, during these trying days they can help ensure talented, high-ability students do not get lost in the aftermath of the pandemic's onslaught.

There can be no doubt that the gifted movement has accomplished many things in many places. A wealth of collaboration among individuals, school districts, post-secondary institutions, and regional, national, and international organizations from countries far and wide has yielded impressive results. It seems to us, however, that now would be a good time for those of us in the gifted realm to up the ante another notch by zeroing in still more on responding to the pandemic dilemma, reaching out even further within and across disciplines, sharing what we have learned, envisioning possibilities, becoming part of the problem-solving process, generating ideas and responses to relevant issues, increasing already significant advocacy, and finding new ways to make a tangible difference in the present and post-pandemic world.

At our personal, micro-world level, the two of us – with noteworthy assistance from our families – are currently working to provide meaningful local programmes for young people who are dealing with social and educational disruptions due to the coronavirus. In

fact, as soon as time permits, ICIE plans to produce a teaching video that will describe an array of activities created by family members – educators all – who volunteered to take charge and move these initiatives forward. Our hope is that the activities (e.g., Puppet Shows on the Street Corner, Cat Choirs on Video, Preparing and Distributing School Supplies and Materials in Food Hampers, How to Get Our Teacher Ready Online for the School Day, Using Skits to Teach, Quilting Star Blankets in Person and Remotely, Working Online with Adolescents to Prepare for the Post-Secondary Experience, "Advising" Webinars to Guide and Mentor Incoming International Students, Providing Remote Tutorial Support from Education Students for Sequestered Children and Youth, etc.) will serve as models to encourage in-service teachers and help them with idea generation and programme implementation.

Of course, it is much more complicated to connect at our macro-world level, where – in an effort to globally mitigate the effects of COVID-19 on high-ability students – organizations (or more accurately, individuals and groups within organizations) may take aim at strengthening existing partnerships and establishing new ones. Considering the talent on display in our professional bodies, such a goal is eminently attainable. The fact that most scholars in the discipline belong to one or more major gifted organizations (and that large numbers have served and/or are serving in leadership positions) provides us with a golden opportunity to collaborate effectively. Given that many research and service delivery projects are currently underway, the immediate challenge is to seize the moment and build upon what is already happening. And as Ambrose (2015) has so convincingly pointed out, a concomitant goal would be for those of us in gifted education to break down barriers and broaden our scope by increasing – in true interdisciplinary fashion – our partnerships with experts from other fields.

From where we stand, then, it would seem to be virtually obligatory for more gifted educators to mobilize and focus their energy and abilities on supporting schools, teachers, and those high-ability students profoundly affected by the coronavirus. Certainly, an increasing number of programmes should target gifted young people whose needs are being left unmet due to the impact of COVID-19. A major part of our mission is to design "front-line service delivery interventions to reach and redirect disenfranchised students … to carry out action research in the best sense of the term by gathering data, measuring and evaluating results objectively, following up, and adjusting as appropriate … [and] to engage and make a difference in the lives of disadvantaged individuals" (McCluskey, Treffinger, Baker, & Wiebe, 2016, p. 4).

As we continue to grapple with the coronavirus, more and more gifted educators with a strong sense of social responsibility will, we are sure, step forward as true servant leaders, give of themselves altruistically, and help in meaningful ways. That is what they do. A large share of the interventions will require long-term commitment, for while this virus may subside soon, a second wave appears likely; and in any case, hanging over our heads like a virulent sword of Damocles is the fact that yet unknown "plagues" are likely to be born and take root in the future.

We must be better prepared then than we were this time. Our teams at ICIE and LPI would be more than willing to discuss possibilities with interested parties. Essentially, we will do our best to pull our weight by maintaining older successful services and programmes, and adapting and developing new ones to fit the times. Should anyone have specific ideas for building partnerships in this regard, feel free to get in touch.

Standing on the Shoulders of Giants

Before presenting an update on current ICIE and LPI programmes, we'd like to pay our respects to four giants of gifted education, who have passed away recently. All of these eminent scholars have profoundly influenced almost everyone in the discipline:

- **James T. Webb** (July 27, 2018) was known for his work in many areas of giftedness, most notably the social and emotional needs of exceptionally able, talented individuals. He was a prolific author, and the founder of Great Potential Press and SENG (Supporting Emotional Needs of the Gifted).

- **George Betts** (August 5, 2019) made many contributions to gifted theory and practice, including Senior Seminar – an away-from-school experiential project; the Summer Enrichment Program – a residential camp for gifted children; and the well-known, widely implemented Autonomous Learning Model.

- **Don Treffinger** (October 16, 2019) is celebrated for his work in creative problem solving, mentoring, self-directed learning, and problem-solving style, all of which figured prominently in our projects at LPI. If not for Don's knowledge and vision, there would be no Lost Prizes; his passing left his UW colleagues bereft.
- **Franz Mönks** (March 11, 2020) – a previous Vice President of the WCGTC and a former President, Honorary President, and driving force behind ECHA – was the first Chair in Psychology and Pedagogy of the Gifted in Europe and the founder of the Specialist in Gifted Education training programme.

Conferences

Unfortunately, like elsewhere, the pandemic has played havoc with our scheduled conferences, forcing many modifications and a postponement. Here's where we stand at the moment.

The 8th Annual Lost Prizes-ICIE Seminars
The University of Winnipeg
Winnipeg, Manitoba, Canada
www.uwinnipeg.ca/lostprizes

In light of current realities, the 2020 Lost Prizes event is going virtual at the University of Winnipeg, with the Seminars set to take place from July 6-8, 2020, and the various Conference-Connected Courses running July 2-4 and July 9-11. Initially, since certain classes could not be delivered in a remote format and we were uncertain about enrolment projections, we cancelled two of our six courses. Early in the registration process, however, it became clear that the demand was heavy: The four classes filled in short order and we were flooded with emails from in-service teachers still trying to register. As a consequence, we replaced the two sections that had been removed (by having two instructors repeat their offerings) and increased course caps to 50 (leaving us with no empty seats and the highest turnout in the Seminar's eight years). After all was said and done, going virtual freed up space restrictions and allowed us to increase the number of participants. Now we look forward ("sorta") to problem solving through this new format to deliver an engaging and meaningful conference.

Dania El Chaar, Marc Freado, and Steve Van Bockern will be presenting keynote addresses highlighting talent development and, along with Ken McCluskey, teaching the following courses: Culturally Responsive Teaching, Kid Whispering, Risk and Resilience,

and Expanding Gifted Education respectively. It's exciting for us to welcome back these talented speakers.

This year's conference workshops will consist of a series of webinars highlighting intervention and engagement strategies for youth, encouraging practices and programme development for educators, and research from Immigration Partnership Winnipeg. The days are long (8:30 a.m. to 4:30 p.m.), so there will be yoga and Zumba breaks for participants who feel the need to move.

Rest assured, we expect there will be plenty of pickup when the in-service teachers start sharing information about designing activities for talented, pandemic-affected children. Look for a lot of networking, innovation, and doable projects to come out of the discussion.

Next year's 9th Annual 2021 Lost Prizes-ICIE Seminars will take place, as always, at UW in early July. The plan is to reactivate a strong in-person component if possible, but we'll have to see how the virus situation unfolds as the event draws nearer. Top of the list for 2021 will be rescheduling the DOT (Designing Our Tomorrow) sessions that had to be postponed this time around. DOT is a hands-on programme developed by faculty at Cambridge University (Ian Hosking in Engineering and Bill Nicholl from Education). Based on the concept of "empathic engineering," it incorporates real-world problem solving, a talent development element for at-risk students, and altruistic service learning projects in an appealing, authentic format. With DOT, it will be possible to create learning activities designed by and for students and teachers grappling with the effects of the pandemic.

Our goal is to maintain the essence of Lost Prizes by returning to our earlier preferred approach, but if we can't make it happen in that form, we'll keep calm, adjust, and do the best we can. In the end, what will be will be. (Fritz Perls would have said in his serene manner, If not; then not.)

The 18th ICIE 2021 International Conference on Excellence, Innovation, & Creativity in Basic Higher Education & Psychology: Latest Developments in Research & Practice
Helsinki, Finland
www.icieconference.net

This conference was originally set for this July in 2020, but it had to be postponed and rescheduled because of COVID-19. The planning remains fluid, but now our goal is to hold the event in Helsinki, Finland on July 5-9, 2021. The conference is a partnership between ICIE, Helsinki University, the University of Winnipeg, and the International Higher Education Teaching and Learning Association.

As always, we have many renowned keynote speakers: Don Ambrose, Patrick Blessinger, Christine Boyko-Head, Nicholas Colangelo, Frédéric Darbellay, Lucy Davies, Eve Eisenscmidt, Vlad Glaveanu, Jacques Grégoire, Minna Huotilainen, Karen Magro, Andrea McCluskey, Ken McCluskey, Douglas Newton, Lynn Newton, Roland S. Persson, Henry Tirri, Auli Toom, Rachel Simpson, and Manfred Spitzer. The conference will also feature 32 mini workshops, 12 symposia, and a large number of parallel and poster sessions.

UW-ICIE International Symposium
Regifting the Gifted: Innovation, Education, & Giftedness in the 21st Century
Helsinki, Finland

This symposium, tentatively scheduled for July 26-30, 2021, is being offered to facilitate networking among like-minded researches and teachers from the gifted sector worldwide who are interested in collaborating to design and implement programmes for talented, at-risk students, their families, and their teachers caught up in the coronavirus furor. Aside from the overriding COVID-19 theme, we are toying with the idea of framing sessions around other possible categories such as Networking and International Projects, Paradigm Shifts in Gifted Education, Innovation Education and Teaching for Productive Thinking, Talent Management, Capacity Building and Professional Development, Creative and Critical Thinking in Program Design, and e-Learning and Virtual Environments. The expected outcome is that scholars from diverse backgrounds will come together to form working groups bent on designing and putting into place concrete programmes to ease the pandemic situation for the target groups in question.

At this point, the event is definitely not set in stone, for there are many variables to consider. Again, there is a need to be flexible and, if things don't come together due to outside circumstances, to rework and reformulate as necessary.

Publications in 2020

We continue to labour intensively on the publishing side of our operations.

ICIE Books and Monographs

The following array of ICIE books and monographs will be released shortly:

- *Providing Students with Creative Spaces: The Power of Edutainment*
  Maher Bahloul
- *Focusing on Strengths and Talents: Using Enrichment Pedagogy to Challenge and Engage 2E Students*
  Susan Baum & Sally M. Reis
- *21st Century Skills: Powerful Teaching with Cooperative Learning*
  Ludger Bruening & Tobias Saum
- *A Call to Action: The Urgency of Cultural Competency Training for Teachers Working with Racially Diverse Gifted Students*
  Joy Lawson Davis
- *Gifted Workers Hitting the Target*
  Noks Nauta & Sieuwke Ronner. Translated into Arabic by Taisir Subhi Yamin; and Illustrated by Ingrid Joustra.
- *Educating the Gifted: An Opportunity for Improving the Quality of Teaching and Learning in Classrooms*
  Heinz Neber
- *Ambitious Humanity: The Uses and Abuses of Competing*
  Roland S Persson

Books by UW faculty members, including volumes on ADHD and mentoring, are still in preparation (and will take their place in the production line once the authors have put the finishing touches on the texts).

IJTDC

Anyone who has done it understands how difficult it is to produce an academic journal. The *International Journal for Talent Development and Creativity* (IJTDC) – a joint initiative of ICIE and UW – is no exception, for it has taken an enormous amount of work (especially this issue, since most of our usual support people were consumed by other urgent matters).

Had it not been for the tireless work done by Karen Magro, IJTDC's Editor-in-Chief, this volume would never have seen the light of day. It is only right, then, that the two of us take a moment to formally acknowledge and express our thanks to Karen, who has been a virtual one-woman show on several projects of late. Her scholarship, work ethic, and genuine caring have proven invaluable in this undertaking – truly, it wouldn't have happened without her.

UW Faculty of Education Publishing

In 2019 and thus far in 2020, we have held back from publishing more books at UW, choosing instead to focus on the reprinting and distribution of two of our very successful 2018 publications: *The Three Pillars of Transforming Care: Trauma and Resilience in the Other 23 Hours* (by Howard Bath, former Northern Territory Children's Commissioner in Australia, and John Sieta, Michigan State University); and *Schools that Matter: Teaching the Mind, Reaching the Heart* (by Steve Van Bockern, Augustana University, South Dakota). However, we do have some intriguing publications in process, which we hope to position at the head of the cue very shortly.

ICIE Professional Certificate in Excellence & Gifted Education

Professional development is a critical factor in the initial success of the teaching/learning process. The quality and intensity of training programmes play an important role in determining how successful teachers will be, as well as how long they remain in the profession. ICIE has developed a rigorous programme designed to provide participants an optimum combination of experiences in which they can build content area background, knowledge of teaching and learning, and the competencies required to be a successful and effective teacher for all students, including those who are gifted, creative, and talented.

During 2019, ICIE has conducted a large number of training workshops in Bosnia, Croatia, the Czech Republic, Germany, Jordan, Oman, Serbia, Turkey, United Arab Emirates, and other countries. Similarly, in 2020, the intent of ICIE is – if possible – to have different programmes relating to excellence and gifted education in Croatia, the State of Qatar; United Arab Emirates, Jordan, and elsewhere.

The ICIE Olympiad

www.icie-olympiad.net

This *Olympiad* has been developed to provide international recognition for outstanding achievements by in-service teachers, graduate and undergraduate university students, and 7^{th}-12^{th} graders. It will attract a large number of participants from different parts of the world.

At annual *Olympiads*, both teachers and students will compete in events that focus on applied topics and challenges emphasizing teamwork and interdisciplinary approaches to

productive thinking (e.g., creative and critical thinking, creative problem solving, future problem solving, cooperation/collaboration, and communication).

The *Olympiad* is affiliated with the International Centre for Innovation in Education and a number of other international institutions. The site is owned and operated by ICIE. Importantly, the *Olympiad* is based on international standards for excellence, creativity, and innovation. Winners of the competitions will be invited to regional, national, and international tournaments, which are rotated throughout different countries.

An ambitious international initiative, the *Olympiad* is dependent on a large number of dedicated volunteers across the world, who offer their expertise, time, and resources to support and promote excellence, creativity, and innovation. All people involved in this programme are responsible for ensuring that any applicable policies, laws, or regulations are not broken. Every participant, everyone who is part of the *Olympiad*, should display honesty, integrity, courtesy, respect, and accept safety procedures and codes of ethics.

In Closing

This has ended up being a rather idealistic, convoluted call to arms, but we do feel strongly about finding ways to assist people in many countries who have – through no fault of their own – fallen upon hard times. It will be a challenge to get through this pandemic and all its after-effects, including the disruption of on-site school programmes.

It is not the time to behave, as some governments have done, in a parochial, insular, and isolationist fashion. Coordinated, united efforts will be required and no doubt launched by researchers and practitioners from schools, universities, and organizations within and outside of gifted education, and from G/T programmes all over the planet. It will take a global village to beat back a virus, give hidden talent a chance to surface, and make the world a better place.

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From the Editor's Desk:

Charting Educational Innovation in a Time of Crisis: Developing Pedagogies of Hope, Compassion, and Insight

Karen Magro
The University of Winnipeg, Canada

"Transformations, openings, possibilities: teachers and teacher educators must keep these themes audible."

Maxine Greene

As our most recent issue of the IJTDC goes to press, we are in the midst of a global pandemic. The problems of the Covid-19 crisis are urgent and lasting and, they challenge us to acknowledge this historical moment with its unknown complexities involving future planetary sustainability. Restoration, repair, and re-envisioning life will take creativity, commitment, and care. Individual agency and social action require a new way of thinking. This time of crisis has resulted in catastrophic losses and an upheaval of life. While nature appears to show some signs of recovery, we need to make more concerted efforts to rethink the energy grid and find alternatives to the fossil-fuel industry are needed. Finding and implementing the infrastructure that supports alternative energy sources will require new learning if we are to protect the essential matrixes of life that include our air, water, and soil. Work, travel, social networking, and shopping have also radically changed within a short period of time. As educators, we have had to make a pivot to online technologies and teaching from home. Hybrid models of learning continue to be explored.

W.B. Yeat's captured the post-World War I malaise and trepidation in his 1919 poem "The Second Coming." One hundred years later, the opening stanzas seems to speak to the time we are in today:

> Turning and twisting in the widening gyre
> The falcon cannot hear the falconer;
> Things fall apart; the centre cannot hold;
> Mere anarchy is loosed upon the world,
> The blood-dimmed tide is loosed and everywhere
> The ceremony of innocence is drowned;
> The best lack all conviction, while the worst
> Are full of passionate intensity.

How do we move ahead with a positive vision for the future, one that presents an alternative to the dim world view that Yeats presents in his apocalyptic poem? Awareness and empathy are critical foundations. In *One Drum,* Indigenous writer Richard Wagamese (2019) asserts that too often, people fail to understand "the relationship between the words,

and the spiritual word communion. To be in harmony." (p.22). While we have developed technologies that allow us to communicate with expediency across greater geographic distances, spiritual longing and exploring the inner recesses of human emotion remain elusive. We are one world sharing a fragile planet and it is time to settle rifts that tear people apart "in neighborhoods, communities, cities, societies, and nations" (p.22). Influenced by traditional Anishnawbe culture and the Seven Grandfather Teachings, Wagamese writes that it is imperative to heal and work together in communities that are life-sustaining:

> In our separation the song is diminished and the Earth shows the effect of that. What is needed now is a return to elemental teaching. We need to recognize the fact that we are all one song, one family, one energy, and one soul. Or when my people say 'all my relations' at the end of a ceremony or a prayer, it is in recognition of that truth. It does not mean only those who look like me, sound like me, speak the same language as me or live like me. It means *all*, every voice in our common chorus. We need to return to that teaching now for the good of the planet we call our home….So the most profound truth in the universe is this: we are all one drum and we need each other (p.24).

Education can play a central role in creating a new vision for the future. For some, this time of crisis has been a catalyst for awakening a new appreciation of life. The on-going pandemic has also exposed substantive inequities and injustices in access to health care, safe and adequate housing, education, and work. It is not a question of rebuilding world economies; the question must be framed in re-visioning communities that demonstrate a reverence for life. Bud Hall (2002) writes that we need a vision "that responds to the collective needs of the majority of people in the world, not simply the few" and that "in order to redress wrongs such as poverty, cultural imperialism, racism, sexism and other forms of injustice, individuals need to be able to envision alternative ways of living"(p.43). Along similar lines, Darlene Clover writes that for too long "the ideological underpinnings of globalization of increased competition, production, marketing, privatization, and deregulation—all in the single-minded pursuit of wealth---have created massive ecological imbalances of unprecedented proportion" (p.6). The process of production and unbridled material consumption "reflect the way humans interact with each other and the rest of nature" (p.7). Clover details examples of the way that globalization and the exploitation of so many natural resources have weakened the planet, destroyed plant and animal life, and forced many people worldwide to live in harsh circumstances and poverty. Deforestation, social erosion, water and air pollution, toxic waste, and climate change need to be addressed in urgent ways by all world communities. Learning is key. Economies of the future need to be grounded in green ecologies, health care for all, and sustainable neighborhoods, cities, and world communities. Elders, artists, educators, activists, and a community leaders need to mobilize together, notes Clover, to develop environmental and economic justice. To accomplish this, educational initiatives need to be more holistic, interdisciplinary, and authentically rooted in the lives and experiences of learners.

How can we nurture communities of hope and cultures of peace? How can education promote respect for the diverse cultures worldwide? How can a sense of global citizenship evolve so that individual and collective actions bring about positive and transformative

changes in access and opportunity for all? What role do empathy, critical thinking, and responsibility play in education? How do we re-imagine aspects of life such as the economy, health, work, communication, culture, literacy, and education? Maxine Green's (1995) conceptions of social imagination are valuable as we re-imagine education today. A transformative education today involves discussing the interconnections between disciplines; human rights, environmental global issues, gender inequities, the rights of children, species protection, and other themes connected to social justice, peace, conflict resolution, and equity. Critical pedagogies today challenge educators to engage learners in a critique of social and global issues such as undemocratic social structures that produce and sustain inequalities and oppressive social conditions. Greene (2005) writes that "educator(s) must be awake, critical, and open to the world" (p.80) and to the prospect of alternative possibilities that can mobilize individual talents and skills. She further observes:

> It must be the recovery of imagination that lessens the social paralysis that we see around us and restores the sense that something can be done in the name of what is decent and humane. I am reaching toward an idea of imagination that brings an ethical concern to the fore, a concern that, again, has to do with the community that ought to be in the making and the values that give it colour and significance….In thinking of community, we need to emphasize the process words: making, creating, weaving, saying, and the like…. [Community] has to be achieved by persons offered the space in which to discover what they recognize together and appreciate in common. (p.39).

Today, we are challenged to think of global interdependence not through a market based frame that emphasizes capitalism, monetary power, but through a global interdependence that is rooted in a common good (Kornelsen, Balzer, and Magro, in press). Curriculum approaches could tap into creativity, lived experience, agency, and arts-pedagogies that explore alternative possibilities in all realms of work and life. Creativity in education involves an openness to change and adapting to new life circumstances.

The articles that comprise this double issue of the IJTDC reflect educational innovation at many levels and across diverse cultures, educational levels and content domain. Dalit Levy explores perspectives of pedagogical innovation in Israel. Her article is timely as educators and institutions must use more innovation and adaptation in creating online courses and programs. Levy's insights remind us that education and curriculum are ever-evolving, dynamic, and specific to a particular context and educator. New ideas, breakthroughs, and innovations in technology can lead to transformative change. Hanni and Tim O'Brien compare the way the United States deals with its low-income gifted students with approaches from Finland, Japan, and Singapore. Their article addresses the methods used for identifying gifted students, the educational opportunities for low-income gifted students, and the challenges facing each nation with respect to educating gifted students.

Taina Makkonen, Jari Lavonen, and Kirsi Tirri contribute an important article that addresses conceptions of mindset within the context of giftedness. They write that a key factor in encouraging talent development among students may be in fostering a growth mindset. Openness to change and adaptation are dimensions of a growth mindset. In their

study, Makkonen, Lavonen, and Tirri examined the mindsets of academically gifted Finnish upper-secondary students and Finnish physics teachers. The authors draw upon Carol Dweck's (2016) pivotal research on "fixed" and growth" mindsets as central to understand the cognitive and emotional processes that influence an individual's ability to navigate life. Mindsets refer to specific beliefs that individuals hold about self-efficacy, intelligence, effort, and work. Cultural norms, socialization practices, and unique personality features can influence individual mindsets. Dweck posits that both conscious and unconscious thought processes affect motivation and learning. Her research integrates elements of personality psychology, developmental psychology, and social psychology. A person with a fixed mindset seeks to avoid challenge, risk-taking, and failure. Effort, persistence, and creative thinking are minimized or ignored as a person with a "fixed mindset" seeks finite answers, personal control, and predictable outcomes. In contrast, a person with a growth mindset embraces challenge and learning opportunities that require persistence, effort, and creative thinking. Learning is exploration and discovery. The authors' study further adds and enriches our understanding of mindset and its connection to conceptions of intelligence, giftedness, and talent. Implications for classroom practice also emerge.

Kati Aus and Kirsi Tirri further explore the concepts of false, limited, and authentic growth mindsets in learning processes. Their study analyzes findings from fourth grade students in Estonia and Finland. Their study reinforces Dweck's (2016) observation that conceptions of mindset must go beyond simplistic understandings and delve more deeply into the complex psychology of learning dynamics. In their research, Aus and Tirri explore situations encountered when working with highly able children. These issues may relate to self-concept (especially in terms of intelligence), self-esteem, levels of self-efficacy that are related, for example, to the issue of 'how intelligent am I.' Ideas linked to perfectionism, the "imposter syndrome", motivation, preference for self-direction, and other learning preferences, personality type, perceptions of success or failure are among the factors that influence mindsets. What is the relationship between intelligence and a growth mindset, for example? There are many factors that may influence students' ability to develop a growth mindset. Specific teaching behaviors and perspectives are critical in establishing a climate that is conducive to creative thinking and students' developing self-efficacy, critical thinking skills, and problem solving behaviors that are consistent with growth mindsets. Conceptions of mindsets can be situation specific; a learner, for example, may be willing to discover, take risks, and problem solve in one context but not another. Professional development courses and programs could help teachers reflect on their own professional practice and develop innovative ways that could encourage creative and critical thinking among all learners.

Conceptions of mindsets can also be connected to concepts of intelligence, academic achievement, and dimensions of creativity. Affective, cognitive, kinesthetic, and imaginative dimensions of learning are central to our understanding of intelligence. Creativity includes a willingness to take risks, a high tolerance for complexity, mental mobility, intrinsic motivation, and a strong sense of self-direction. Creativity integrates dimensions of imagination, intent, effort, and explorations as Jackson and Sinclair (2006) suggest the "snow flake" image for creativity best captures the unique creative potential that each person has.

Earlier, Sternberg and Lubart (1995) write that successfully intelligent individuals succeed, in part, because

> [Individuals] achieve a functional balance among a 'triarchy' of abilities: analytical abilities, which are used to analyze, evaluate, judge, compare, and contrast; creative abilities which are needed to create, invent, discover, imagine; practical abilities which are used to apply, utilize, implement, and activate. Successfully intelligent people are not necessarily high in all three of these abilities, but find a way to exploit the patterns of abilities they may have (Sternberg & Lubart, 1995 cited in Jackson, Shaw, and Wisdom, 2006, p. 124).

In a classroom that might be compared to a creative atelier, teachers would co-design the architecture of learning environments with their students. Learning outcomes are not predicted in advance and students have multiple opportunities to practice, refine, and develop their skills in ways that draw out interconnections between the disciplines.

Lara Milan, Maria Assunta Zanetti, Sally M. Reis, and Joseph S. Renzulli explore the different ways that Italian, European, and American educational frameworks approach talent development and giftedness. Particular emphasis is placed on the Italian educational system and the importance of creating a climate of change that encourages the development of 21s century skills such as creativity, critical thinking, entrepreneurship, and technological literacy The Renzulli (1977) Schoolwide Enrichment Model (SEM) provides a conceptual framework for encouraging talent development, inclusive education, and giftedness across cultures.

Sharon Alston and Kirsten Ericksen explore the application of "high impact practices" for teaching social justice content in Social Work. Creative and innovative teaching and learning strategies include experiential learning (EL), project-based learning (PBL), and Service Learning (SL). Social justice issues may address the effects of persistent poverty, disabilities, homelessness, racism, sexism, cultural imperialism, colonialism, and other forms of inequity. Equitable participation in society is precarious unless these inequities are explored, and social workers are on the front lines in their work with so many vulnerable populations. The social workers' personality, level of awareness, interpersonal and communication skills, and commitment to social change are central. Alston and Ericksen provide important insights into the way Social Work courses can be designed more creatively, with a focus on initiating positive social justice changes for vulnerable populations. The authors' research presents important ideas for the way professions can integrate social justice themes in their courses.

A challenge for educational institutions, at all levels, is to address learning barriers and create a context where educational access and learning opportunities are made available for all members of society. How can we mobilize learners so that specific talents and skills that may be dormant in individuals begins to surface? How do we create learning communities that benefit all? What policies and procedures must be in place? Beverly Sande presents a paper on educational innovation that highlights the importance of collaboration between practitioners in different institutions. Dr. Sande writes about Education Preparation Programs (EPP) that encourage collaborative methodologies of program design,

development, implementation, and evaluation. Mary Frances Agnello, Naoko Araki, and Florent Domenach analyze elements of sustainable education in rural Japan. Their article highlights the important role that universities can play in mobilizing educational stakeholders in developing educational curricula that are responsive and dynamic. Increasingly, universities are challenged to work more directly with communities to activate positive socio-economic and cultural change. The authors' community action model examine the importance technical literacies, interpersonal competence, systems thinking, English language skills, and critical and collaborative problem solving that can be applied to all levels of education. Agnello, Araki, and Domenach posit that by tapping the talents of university student and training them to work in schools with teachers and public school students, rich learning experiences can develop.

Malak Krayem and Anies Al-Hroub explore the link between gender and perceptions of specific personality traits in gifted students. The authors draw upon Kazimierz Drawbowski's (1964) personality theory of Positive Disintegration. For Drawbowski, anxiety and psychological tension are necessary pre-requisites for creative learning and personality growth. "Advancing" into higher levels of personality development may be predicated on particular traits of "over-excitabilities" such as a surplus of energy, imaginative abilities, reflective thought, problem solving, probative questioning, and strong affective expression. This research article raises interesting questions: To what extent do societies nurture particular personality traits and to what extent are these traits gendered according to social and community norms? How are these traits perceived in an educational setting? Are specific student behaviors and attributes viewed as assets or deficits? How do teachers (male/female) perceive these traits with respect to learning and normative socialization patterns in school? Krayam and Al-Hroub explore teachers' perceptions of "over-excitability" in students by using experimental vignette methodology (EVM). Their study presents interesting findings that shed light on the importance of teaching perceptions of students' talent and giftedness potential. Further professional development opportunities for teachers would help to encourage a greater awareness of factors that influence individual learners: unique personality traits, socialization, experience, and individual talent and skill. Misconceptions and misunderstandings can abound as teachers perceive "over-excitability" to be connected to oppositional defiance disorder, ADHD, or a lack of skill and effort. The values, beliefs, and ideals of educators—regardless of gender and culture---are important factors to consider when discussing the psychosocial dimensions of the teaching-learning enterprise. Dr. Sisk and her colleague provide an illuminating article on the way mindfulness techniques can be applied to create a climate conducive to creative learning. Their ideas are particularly valuable considering the anxiety of the present times in which we live.

The section on *Creativity Profiles* highlight the importance of personal commitment, relationship building, courage, curiosity, and the motivation to learn in the attainment of professional and personal goals. Hisham Ghassib provides an eloquent narrative of his own personal intellectual journey. Autobiographical insights depart from a "familiar logocentric understanding of the world" in an effort to discover new and alternative way of knowing. Revelation, exploration, discovery, and liberation are associate with narrative forms of

writing (Chapman-Hoult, 2012, p.76). Passages, transitions, disorienting dilemmas, perspectives taking, and reflective observation are processes of significant personal learning. Dr. Don Ambrose provides an illuminating tribute to Tracy L. Cross and his accomplishments. Cross's accomplishments, reflect, as Ambrose notes, a dynamic interplay of wisdom, creativity, and intelligence. In "Standing on the Shoulders of Giants: Opportunity, Serendipity and Commitment," Tracy L. Cross (Cross and Riedl Cross, this issue) reflects on the people and experiences influenced his career as an academic and educational leader. Our interviews feature two well-known scholars in the areas of gifted education, intelligence, and creativity. Taisir Yamin and Fred Bonner II interview Dr. Dorothy Sisk. Michael Shaughnessy and Jayson Evaniuk have a conversation with Bruce Uhrmacher on the important interconnections between aesthetics, creativity, talent, and the arts. These important contributions highlight Griffith's (2014) observation that "creativity is key to a continuing reassessment of beliefs, values, perceptions, and professional commitment" (p.123). Creative learning and significant personal learning are lifelong endeavors that balance risk-taking and reward. The featured scholars reflect on the stories, metaphors, experiences, and turning points that shaped their vision of education and life. Our featured book review is written by Dr. Sandra Linke. As we continue to discover innovation in education, I look forward to receiving future research articles, book reviews, technical reports, interviews, and creative texts.

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How Do Teacher Educators from the 'Startup Nation' View Pedagogical Innovation?

Dalit Levy
Department of Community Information Systems, Zefat Academic College, Israel

Abstract
A qualitative inductive analysis of 110 open-ended questionnaires was performed, as part of a research network aiming at investigating views of pedagogical innovation among teacher educators in seven Israeli colleges of education. Three results emerged: (i) Teacher educators mention technology when describing implementations of pedagogical innovation in their teaching; (ii) the stories that teacher educators associate with pedagogical innovation do not deal with the most up-to-date learning technologies; (iii) Teacher educators tend to use inclusive terms in their descriptions of pedagogical innovation. The discourse of teacher educators on the subject of innovation seems to differ from the discourse in other professional communities, such as the medical, agricultural, high-tech, and business communities. The importance of these findings is heightened in view of the expectation that those who are responsible for the training of the next generation of educators would design innovative approaches to meet the future needs of the education system.

Keywords: Innovative pedagogies; educational technology; capacity building.

Introduction

> "Once a season, once a quarter, once a year, sometime – with determined and uncompromising regularity, the messenger arrives at my door with new material […] I still haven't managed to upload the material to my computer, and the messenger is back at my door with another dose of innovation laid out at my doorstep" (Ullman, 1997).

The field of teacher education seems to be in the midst of two conflicting logics (Lamm, 1976; Harpaz, 2010) attracting the entire educational system in two opposite directions: On the one hand, modern and postmodern society praise and even admire innovation and constant change as a way of life; On the other hand, educational institutions tend to avoid changes that might disrupt the system (Christensen & Eyring, 2011). In "A Brief History of Humankind", Harary (2011) describes how both science and modern socio-political order espouse constant progress and change, and how the demand to keep innovating has become an ideology. The ecosystem within which teacher education operates is largely based on such ideology, accompanied by seeing change through positive lens and by resisting any signs of stagnation. Teacher education institutions as well as stakeholders and staff in those institutions are therefore expected to constantly present innovative ideas, develop new plans, and cultivate what is commonly termed 'pedagogical innovation' (Walder, 2014).

While the term itself is relatively ill-defined (Poyas, 2016), one common thread is the expectation that those who are responsible for the training of the next generation of educators will design approaches and tools to meet the future needs of the education system. The work of teacher educators in the development of innovative pedagogical models is vital for providing the future generation of teachers with the professional model and the opportunities to learn to teach in a range of settings (Herbst et al, 2016). Not less important is the discourse regarding pedagogical innovation among teacher educators. As the title of this article hints, its aim is to look at the term through the eyes of those who are practically "doing it" within colleges of education in Israel, described in Senor & Singer (2009) as 'the start-up nation'.

The paper builds on stories gathered from teacher educators who were asked to describe episodes of "pedagogical innovation" in their own practice. The descriptions were a part of a qualitative study conducted within a national research network aiming at investigating views and

applications of pedagogical innovation in Israeli institutes of higher education in general, and those focusing on teachers training in particular. The participants in the current study were lecturers who voluntarily responded to an online open-ended questionnaire. Coming from different institutions and diverse areas of teaching, the respondents were prompted to characterize elements of pedagogical innovation based on their daily experiences within their colleges of education and to present definitions, narratives and descriptions of pedagogical innovation originating in their field of professional experience.

However, since definitions might be challenging to start with, the questionnaire began with inviting "small stories" (Bamberg & Georgakopoulou, 2008) about the practicalities of pedagogical innovation, while only the last question prompted at defining the idea according to the respondent's point of view. For example, the following answer was given by a science education lecturer to the first question: '*describe a situation in which you applied pedagogical innovation in your own practice*': "Virtual courses have (or had, back then) in my view, pedagogical innovation, because of the fact that using a virtual medium for facilitating learning is different from regular classroom learning and because of the need to transfer to the learners the responsibility for their own learning" (respondent 7, Sep 2010).

From the inductive analysis of the open-ended questionnaires, two contradictory categories emerged. On the one hand, teacher educators described instances of what they perceived as pedagogical innovation in their institutions, like the example above. On the other hand, expressions appeared like "There is nothing new under the sun, everything I did Korchak and Levin had done before…" (respondent 33, Dec 2010), in which innovation was seen merely as a buzzword. Although both responses were made eight years ago, which is a long time considering the evolution of educational technology, teacher educators' perspectives might not have changed as much over that time, and the abovementioned contradiction can still be found in the discourse on pedagogical innovation.

In another publication dealing with these data, Baratz & Levy (2016) ask whether educators see innovation as an ideological foundation for the erection of a new form of reality, or rather as a semantic expression. This paper follows a different path emerging from noticing, at an early stage of the inductive analysis, the teacher educators' narrative relating pedagogical innovation and (educational) technology. As in the first example above, many "small stories" included practical examples of the use of learning technology, even though the questionnaire did not explicitly mention this aspect of the respondents' work. Although not all respondents mentioned educational technologies in the situations they chose to describe, most of them, at their own initiative, made some connection between pedagogical innovation and technology. They did so either by describing how they used technology and which technology they used in order to implement pedagogical innovation, or by regarding their tendency to avoid the use of technology.

This phenomenon existed although the respondents were not homogeneous in term of their specialty, years of experience, or role at their colleges. In light of the general discourse of innovation surrounding them, which is based mainly on the industrial-technological-social-cultural change that characterizes our times, it is not surprising that teacher educators view learning technologies as an inherent part of pedagogical innovation. However, the nature of pedagogical innovation as exhibited by teacher educators seems to differ from views and practices exhibited by other professional communities in Israel. Below we will present these findings in detail.

The paper first draws some connections between the revolutionary developments that characterize the knowledge age and the expectations from those who educate the future teachers. Following a brief description of the research method and the analytic process, three findings are presented. The first regards the abovementioned phenomenon, namely the connections seen by teacher educators between pedagogical innovation and learning technologies. The second sheds light on teacher educators' tendency towards less updated educational technologies, and the third finding regards their use of inclusive terms rather than specific technologies.

Theoretical framework

The rapid development of ICT, including the Internet; mobile devices; the free use of teaching aids and OER; and the continuous reduction of computing devices' size, which facilitates the use of these aids in laptops, tablets and cellphones – have had a huge impact on education culture and on educational institutions (Christensen & Eyring, 2011; Hirsh-Pasek et al. 2015; Hine, 2015). Furthermore, social networks and new media significantly change the ways in which information and knowledge is accessed, as well as the methods of dialog between students and teachers and within the learning community (Kop & Hill, 2008; Shafriri & Levy, 2018). In the past, teachers were held solely responsible for access to knowledge and for student-teacher interactions, and both took place mainly in the classroom.

Today, online learning and free viewing of academic courses are possible anywhere and at any time; academic articles enable extensive access to scientific resources; electronic accessibility to complete books is made possible for anyone who is interested; and open sources of knowledge such as Wikipedia are available on the go at the palm of one's hand. The source of many of those changes has been the development of the Internet, a development which creates global and free access to an unlimited range of information sources and supports the creation of a new culture which is based on inquiry learning and on content-sharing.

The classroom door, therefore, becomes much more penetrable to information and knowledge, which the teacher cannot supervise (Levy & Schrire, 2015). The many routes to social communication such as blogs, instant messaging, tweets, Facebook posts and so on enable learners not only to acquire knowledge, but also the creation of knowledge and content ('produsage') (Bruns, 2008). In contrast to the pedagogical models formulated at the 20th century, the teacher nowadays is not considered the only one who is in charge of defining, creating or implementing educational content. Students and teachers alike can discuss ideas and turn information into knowledge even (and, perhaps mainly) outside the confines of the educational institution to which they belong (Dede, 2008).

The adoption of principles of collaboration (Webb, 2013), connectivity (Siemens, 2005), and openness (Bonk, 2009) have enabled a revamp of the learning environment and led to the sharing of learning materials and to the use of varied technological tools for teaching, learning, evaluation, organization of learning and management of the classroom (Anderson & Dron, 2011). In such learning environments, technological innovation is combined with pedagogical innovation.

In Israel, the prevailing trend has always been to combine innovative technology with the teaching-learning process. However, the processes of introducing learning technologies into the classrooms are long-term, complex, fragile, and require a conceptual change among all those who encounter them, while the technology itself has been developed only recently. As a consequence, in contrast to the rapid penetration of information technology into the areas of business, communication, and leisure culture, within the Israeli education system change has been slow (Chen & Kurtz, 2008); often led by devoted individuals from within the system; and these innovators rarely receive appropriate reward for their actions (Tawill & Levy, 2017).

Thus, the gap between what goes on within the confines of the school and "real" life outside it is continually widening, and while scientific-technological innovation have been generating significant changes in areas such as agriculture, communications, medicine and industry, the approaches to teaching and learning have remained unchanged.

It is widely accepted that the knowledge regarding the combination of technology and pedagogy is unique for the teaching profession and the development of such knowledge is perceived as a vital stage in the teacher training process. For that aim, Mishra & Koehler (2009) have suggested TPACK as a framework integrating technology, pedagogy and content knowledge (Rosenberg & Koehler, 2015). Building upon the TPACK framework, Shafriri & Levy (2018) propose to add the knowledge of the environment into a framework they title TEPACK (Fig. 1).

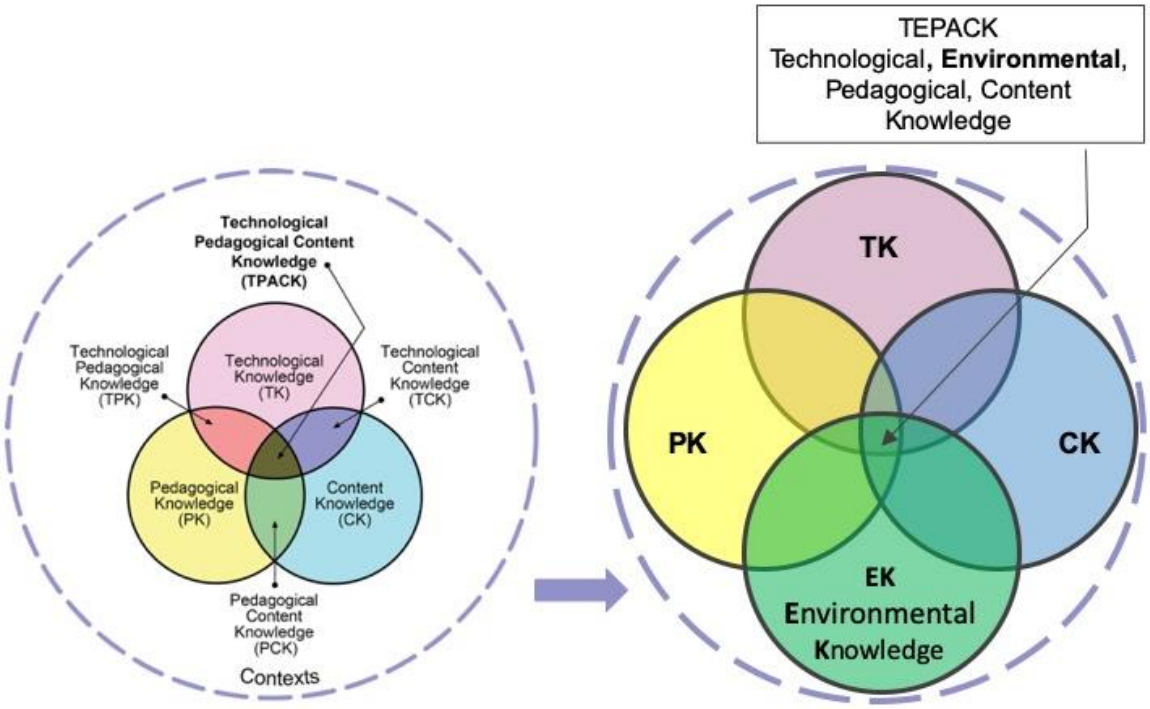

Figure 1: Additional area of knowledge to consider for technology-enhanced learning

The need to bolster pre-service teacher knowledge about using innovative technologies in the classroom has been recognized in both research and policy agendas (Polly, Mims, Sheperd & Inan, 2010), but the barriers to change have been substantial for a variety of reasons, including the lack of models to guide the development of expertise. Consequently, many graduates of colleges of education are not sufficiently familiar with the need for technology-rich learning environments or models for designing such environments for pupils in the knowledge age. These graduates are, therefore, devoid of experience in any teaching that includes the integration of pedagogical-technological innovation. The work of teacher educators in the development of pedagogical models that combine innovative technology is, therefore, of paramount importance, as they are the ones who provide the future generation of teachers with the professional model and the framework for connecting pedagogy and technology. Many scholars call for equipping the educators of the future with the qualifications and skills that will enable them to use the potential of the current mobile and interconnected world (Kamarainen, Metcalf, Grotzer, & Dede, 2015). However, recent studies indicate that not enough attention is given to that professional knowledge of teacher educators (Voogt & McKenney, 2017). Therefore, the research outlined in this paper deals with the perceptions and views of teacher educators regarding the interrelationships between digital technology and pedagogical innovation.

The study

The aim was to examine connections between pedagogical innovation and educational technologies, as these connections have been reflected in the "small stories" brought by Israeli teacher educators in response to the open question *Describe a situation where you have applied 'pedagogical innovation' in your teaching*. This specific goal has derived throughout a cyclic inquiry process from a more general objective - to understand how those who have been in the frontlines of the Israeli educational system regard the term 'pedagogical innovation'.

For that aim, an online tool titled “implementing pedagogical innovation by teacher educators” had been circulated among potential respondents in several colleges of education around the country. The above question was the first of seven open-ended questions in the online questionnaire, inviting "small stories" (Bamberg & Georgakopoulou, 2008) about the practicalities of pedagogical innovation. Apart from being mentioned in the title of the questionnaire, the term was not explained nor defined beforehand, as we sought to listen to the teacher educators' authentic voice.

The questionnaire

The open-ended questionnaire intended to allow participants to express their views verbally and in an unbiased manner and to evoke the naivest associations participants might have. The questionnaire was disseminated among teacher educators during the years 2010 – 2012 using both an online and a printed version. The first part included seven open-ended questions asking participants to describe their experiences with pedagogical innovation and their feelings in the wake of these experiences, to characterize the components of pedagogical innovation, and eventually to provide a definition of pedagogical innovation based on their experiences. The second part included anonymous demographic data such as gender, age, teaching discipline and years of experience as teacher educators.

The questionnaire began with a disclosure statement, indicating that the data would serve as a part of a research study. The statement emphasized the anonymity of the questionnaire and the fact that no identification details were being recorded. The teacher educators who voluntarily accepted the invitation to participate were specifically requested to avoid naming people and places in their open-ended responses. Only after signing a consent could they move on to the first question – *describe a situation in which you implemented pedagogical innovation.*

The responses to the first question tell the basic story of the participants' experiences with pedagogical innovation, whereas the remaining questions enable participants to develop their story and to present their reflective observations regarding these experiences. As is highlighted above, the term under investigation was used in the questionnaire without any further explanations, references or examples, in order to evoke the most naive associations participants might have. For the specific goal of the study described in this paper, only the responses to the first question were analyzed.

Participants

The participants in the study were teacher educators working at teacher-training colleges throughout the country. As Table 1 below displays, a variety of 108 teachers from different disciplines, with various backgrounds, and teaching experience ranging between six and more than thirty years shared their 'small stories' and narratives with us. The study cohort included teacher educators from seven different teacher-training colleges all around Israel. All the participants voluntarily accepted the invitation to participate and shared their stories with us anonymously on their free will. They are by no means representative of the population of teacher educators in Israel.

Data analysis

The qualitative method of inductive analysis (Thomas, 2006; Goetz & LeCompte, 1991) was used to analyze the 'small stories' provided in participants' answers to question 1. In general, such analysis entails a search for patterns among the data collected in the field: “as you read through your data, certain words, phrases, patterns of behavior, subjects’ ways of thinking, and events repeat and stand out….These words and phrases are coding categories” (Bogdan & Biklen, 1998, p. 171). Participants' responses did not indicate where in the text the pedagogical innovation was mentioned; hence, the researcher relied on an interpretive approach to identify and mark the enunciations relevant to the term under investigation. As has been previously mentioned, the responses described an educational situation that the respondent had viewed as exemplifying 'pedagogical innovation' without any direction or definition of what pedagogical innovation is. Therefore, these accounts represent an 'emic' perspective (Olive, 2014), or an expression of the teacher educators' authentic voice (Yin, 2010).

The analytic process was cyclical (Guba & Lincoln, 1989): stories were examined repeatedly, in order to find participants' authentic expressions of perceived categories and to identify keywords (Katriel, 1999). As an example, here is the response of a geography educator: "Today, I demonstrated to the students how it is possible to make use of a **smartphone** to upgrade the content and understanding of the subject I was teaching. I also dwelt on the subject of forging **links** between various topics with the aim of drawing a picture that I wanted to draw for the teaching requirements" (respondent 95, Jan 2012). The emphases in this story and in the examples below were added as the researcher carefully read the responses at the preliminary analysis stage and marked the keywords in the text. The length of the responses that served as the basis for the analysis ranged from just a few words, such as "use of **online teaching** of many and varied types" (respondent 32, Dec 2010), and

detailed stories of some 200 words.

Table 1: Demographic characteristics of the respondents (N=108**)**

Variable	Category	Number	Percent
Gender	Female	82	75.92
	Male	26	24.08
Total		108	100
Age	<=35	3	2.77
	36-50	32	29.63
	51-65	64	59.26
	>65	9	8.34
Total		108	100
Teaching discipline	STEM	22	20.37
	Language (Hebrew, Arabic, English)	7	6.48
	Social Sciences (other than education)	12	11.11
	General Education	31	28.70
	Special Education	13	12.04
	Humanistic Studies	12	11.11
	Arts	5	4.63
	Other (physical education, unspecified)	6	5.56
Total		108	100
Professional qualification	MA/MSc/MEd	16	14.82
	PhD/EdD	88	81.48
	Professor	2	1.85
	unspecified	2	1.85
Total		108	100
Teaching experience (as a teacher educator)	<5 years	17	15.74
	5-15 years	33	30.56
	15-25 years	43	39.82
	25-35 years	12	11.11
	unspecified	3	2.77
Total		108	100
Academic position at the college of education	Dean	2	1.85
	Head of a special program / unit / department	43	39.82
	Lecturer / Teacher / Pedagogic advisor	23	21.28
	Unspecified	40	37.05
Total		108	100

The respondents did not explicitly indicate where the pedagogical innovation is in their ‘small stories’. Therefore, during the first cycle of carefully reading the small stories, the researcher highlighted the elements interpreted as relevant to pedagogical innovation. During this early analytic phase, the immanent place of technology in this innovation had also been noted, as exemplified in the responses given by teacher educator #95 and #32 above.

Five of the 108 responses to the first question were excluded from the next analytic phase, replying either “I didn’t implement any pedagogical innovation” or “I don’t know what it is”. Out of the rest 103 responses, more than half mentioned technology (55 responses, 53%). Since the term 'educational technologies' did not appear in the questionnaire, and although the participants did not use the term 'as is', it is regarded as an emergent theme raised entirely by the participants. It is the researcher’s choice to include the diverse digital tools and applications mentioned voluntarily by the majority of the participants under the umbrella of educational technologies.

During the second analytic phase, the responses to the first question that were included in the ‘mention technology’ category were reexamined. The analysis expanded also to responses given by the same respondents to other questions in the questionnaire, including their suggested definitions of pedagogical innovation. The results are detailed next.

Results

As stated above, although the open-ended question did not mention technology whatsoever, in fact, most of the respondents mentioned learning technology, referring to educational technologies such as: the Internet; software tools for e-mail, word processing, calculating, drawing, etc.; LMS - learning management systems; collaboration tools - video conferencing, social networks, discussion forums, blogs and Wikipedia; computer games and simulations; and mobile technologies based on the use of tablets and smartphones. However, in only a few stories, were concrete learning technologies noted, and these were described by means of inclusive terms such as 'distance learning' more than by actual examples for such learning technologies. These two main results will be presented below, and, in addition, an additional finding will be outlined – those technologies which were absent from the teacher educators' discourse.

Teacher educators view educational technology as Pedagogical Innovation

As an introduction to the short description of a situation in which 'pedagogical innovation' was implemented in the college in which she teaches, one of the lecturers wrote: "The question is what's the point of pedagogical innovation? Is it **the integration of technology in learning** and its assimilation, or a return to the Socratic method, or a workshop in which the participants express ideas in a 'brainstorming' context? There is a wealth of definitions for pedagogical innovation, and I wonder what pedagogical innovation really is." (respondent 5, Sep 2010).

The situation which was outlined later did not include the use of technology. However, the dilemma presented in the introduction illustrates the associative connection the research participants make between pedagogical innovation and learning technologies. Another lecturer linked pedagogical innovation and computers: "I applied pedagogical innovation three years ago, when the college proposed adding an assistant **from the computer department** for any lecturer who so desired. I immediately addressed this challenge and recruited her to my methodology lessons. Together with her, I applied **the integration of computers in the teaching of literature** according to a rationale which was specially prepared for this situation" (respondent 25, Dec 2010).

Sometimes, the respondents wondered whether the use of learning technologies expresses pedagogical innovation: "I use accompanying **websites** regularly in all my courses, **upload files** for each lesson, use **wiki** in lessons, etc. Is this innovation?" (respondent 71, Jan 2012). Another lecturer chose a similar wording and also provided an answer to the question above: "For example, using the **Moodle website** in a course, I **upload** detailed resources before each lesson and ask the students to read them in order to **discuss** them in the lesson. Is this pedagogical innovation? In my opinion, no. In the students' opinion, yes. They claim that I am the only one who does this" (respondent 85, Jan 2012).

Table 2 below, presents in descending order, the common terms appearing in at least three stories, which the teacher educators used to describe the technologies that they perceived as examples of pedagogical innovation.

In two-thirds of the responses to the first question, there was some mention of technology, even though the wording of the question itself did not intend this. It is possible that the way in which lecturers were exposed to the questionnaire led them to the association with technology, in that the questionnaire was sent to them by electronic mail in a link to the Google form. Still, this tendency has been found prominent in the teacher educators' small stories. Accordingly, the first major finding is that *the descriptions of the teacher educators on the subject of pedagogical innovation tend to mention technology*.

Table 2: Frequent technological terms.

Term	Example (respondent #)	Number of stories in which the term appears (frequency)
Virtual course	"I was among the first in the college to design virtual courses for the students..." (7).	17 (30.90%)
Teaching with computers	"I applied the teaching of Arabic via the computer for students in Arabic, according to how I taught the overseas students who are not Arabic speakers. The results were amazing! This is pedagogical innovation." (73).	13 (23.64%)
Accompanying course website	"I regularly use accompanying websites in all my courses, upload activities for each lesson, use Wiki documents in the lessons, etc…Is this innovation?" (71).	10 (18.18%)
Online reading	"Before every lesson, the students must send me an exercise: Reading an article online, Reference to a video, familiarity with an educational program […] the next lesson build on the ex, or in terms of Froebel 'gifts' which they send me." (104).	8 (14.54%)
Forum	"In the course website forum which I opened, the students were asked to create a gesture in any way of expression they choose (photographed, drawn, written, etc.)" (35).	8 (14.54%)
E-learning assignment	"Every subject has an assignment with a grade. Sending it [to the site] within a time interval provided in the instructions of the assignment" (52).	8 (14.54%)
Moodle system	"The use of the Moodle platform in working processes in the training of teachers […] I create virtual assignments, in which the teachers are obliged to respond, share, collaboratively think about solutions – because of the difficulty in hearing the range of opinions in the training process" (15).	8 (14.54%)
Video	"I apply a certain degree of 'pedagogical innovation' in the course […] I built it on the basis of a pedagogical approach which divides channeled viewing video clips followed by a discussion on the various insights and scales" (53).	5 (9.09%)
Wiki (Wikipedia)	"I built up a semester in which the learning was developed in a virtual discussion in a Wiki on various articles. The students read an article which had been published on the course website and responded in a Wiki environment. The responses were the basis for the classroom meeting, after which the additional responses to the article continued to appear" (2).	4 (7.27%)

Teacher educators seldom mention future educational technologies

In view of the prominence of the idea of technology in thinking about pedagogical innovation, the analysis further focused only on those accounts and 'small stories' in which any technology was mentioned. These references were found in 62 of the 108 stories which formed a basis for continuing the inductive analysis. These accounts were re-read, and the technological references therein emphasized. The largest number of references to technologies were found in the account of a young lecturer (35 years old) teaching education in a college in the center of the country: "In almost every course that I teach in the college, I use **the discussion forum on the course site**. I **upload** all the course material to **Moodle** and conduct a discussion between myself and the students via the **website**. My instruction is not based on frontal teaching alone, but rather I also use new teaching systems, such as **videos on YouTube** and other **videos**, holding discussions, working in groups" (respondent 51, Jan 2012).

As can be seen in Table 2 above, references to discussion forums, the accompanying course website, and the Moodle environment are also found in other accounts, but this is the only story which presents the educational use of YouTube as an example of pedagogical innovation. Other one-off references (in other stories) included for example:

- Technology encouraging dialog: "I am engaged in pedagogical innovation in the context of training teachers for the assimilation of **technology encouraging dialog** in the classroom" (respondent 77, Jan 2012).

- Sharing management technologies: “We activated the course in parallel, in the classroom and in the **virtual world** using **ZOHO technology** for working with **document sharing online**” (respondent 17, Oct 2010). The ZOHO is a set of cloud-based software products for organizational collaboration (see https://www.zoho.com/).
- Digital diary: “We transferred the teaching practice logs to **digital (computerized) diaries** using the **Moodle program**” (respondent 83, Jan 2012).
- Online testing, mentioned once in the following story: “Towards the end of the course, the students receive an article dealing with some educational occurrence. On the day of the test, at a designated hour, they receive, via the college's **online lesson management system,** three questions relating to this article […] the answers entered have to be retained in the **computer** with a backup, **and sent via the college's website** as an accompanying **Word document**” (respondent 105, Jan 2012).

These elements of the technological environment were not mentioned in most of the stories that were examined. It might demonstrate a gap between the technological affordances (Chemero, 2003; Levy & Schrire, 2015) and their use for pedagogical purposes in teacher education colleges. This gap is particularly noticeable in view of the expectation that the structure of the pedagogical-technological knowledge of teachers and lecturers will include the use of innovative technologies which enable collaboration (Schonfeld & Griest, 2018; Webb, 2011; Blau, 2011), evaluation of learning (Adams et. al., 2017), visualization (Levy, 2013), and mobility (Kamarainen et. al., 2015). In this context, it is important to point out also emergent learning technologies and key terms which were not mentioned in the lecturers' stories even once, like smartboard, tablets, educational apps, augmented reality, massive open online courses (MOOCs), cloud computing, and learning analytics (Arroway et. al., 2016). The most innovative technologies were therefore not mentioned in the stories of the teacher educators regarding pedagogical innovation. The second finding is therefore that *the 'small stories' that teacher educators associate with pedagogical innovation do not deal with the most up-to-date learning technologies*, certainly not with future learning technologies. Possible explanations for this finding include the timing of the study, the nature of the research tool inviting associative ‘small stories’ without forcing detailed descriptions or additional examples, and the fact that those who responded did so on a voluntary basis. A follow-up questionnaire or further interviews with teacher educators might have provided additional explanations. However, these have been beyond the scope of the current study.

Teacher educators tend to use general terms

In the second result above, the excerpt from Respondent 51 ‘small story’ was presented, mentioning a variety of technologies for learning. A similar variety is found only in six other accounts, while half of the 62 writers whose stories referred to any learning technology noted two such technologies and the rest of the stories mentioned only one.

Table 2 above presents in descending order the common terms (appearing in at least eight stories). The top three are general terms: virtual course (~30% of the responses mentioned it), teaching with computers (~24%), and accompanying websites (~18%). The term Moodle with 15% frequency of mentioning is an exception. It is the name of a specific LMS (learning management system) that has been the most used LMS in Israeli higher-education institutes in the last decade (Tawill & Levy, 2017) therefore its high number of mentions seems reasonable while other learning management systems were not mentioned at all.

Apart from Moodle, all other high-frequency terms are also general. Therefore, the third finding suggests *teacher educators tend to frequently use inclusive terms such as 'distance learning' and 'course website' in their descriptions of pedagogical innovation.*

Conclusions

Most of the respondents do not explicitly note where the pedagogical innovation was hidden in their 'small stories'. Therefore, this study used an inductive approach in locating and marking the elements which are relevant to pedagogical innovation and the role of learning technology in this innovation. From this interpretive analysis, three results arose:

- *The descriptions of the teacher educators on the subject of pedagogical innovation tend to mention technology*.
- *The 'small stories' that teacher educators associate with pedagogical innovation do not deal with the most up-to-date learning technologies.*
- *Teacher educators tend to use inclusive terms in their descriptions of pedagogical innovation.*

Therefore, the analysis indicates that many of the respondents made associative links between pedagogical innovation and the use of technological tools and learning technology. However, in the teacher educators' accounts, quite long-standing learning technologies were noted – current innovations in the field were not mentioned, and they did not reflect any consideration of future technologies. The discourse of Israeli teacher educators on the subject of innovation in the knowledge age has been therefore very different from the discourse on the subject of innovation in other professional communities, such as, the environmental, medical, agricultural, high-tech (Senor & Singer, 2009), and business communities. The importance of this finding is heightened in view of the expectation that those who are responsible for the training of the next generation of educators would design approaches and tools to meet the future needs of the education system (Levy & Schrire, 2018).

Many educational researchers, especially those who focus on the study of technology in education, discuss the need to update learning content in teacher training colleges and adapt them to the target of training teachers of the future to educational work in the digital age (Dede, 2008; Kamarainen, Metcalf, Grotzer, & Dede, 2015). The study here presented suggests also that it is necessary to look into both the curricular content and the instructional methods utilized within the colleges of education in order to find more evidence for innovative thinking. The pedagogical innovation research network, the national framework within which this study took place, operated in this direction by bringing together a mosaic of voices regarding the perception of pedagogical innovation in teacher education in Israel (Poyas, 2016). Although each study in the network had its own focus and its own participants, the findings of the different studies reflect teacher educators' confusion with regard to pedagogical innovation, and the two conflicting logics attracting them in two opposite directions (Keinan, 2016). On the one hand, technological development and media-intensive reality force teacher educators to construct their pedagogical content knowledge, their educational-organizational knowledge, and their knowledge of managing teaching-learning processes in a manner that will assist them in fulfilling their important role in the present information age. On the other hand, unlike the speedy entry of information technology into business, media, and leisure culture, its entry into teacher colleges is slow and is challenged by resistance (Zimmerman, 2006; Flavin, 2016). As a consequence, many student teachers in these colleges are still taught in the traditional manner. The findings outlined in the current study also hint at this duality, and highlight a further need: encouragement to think about the future – including discussion of future technologies – among the members of staff in teacher education colleges (Traxler & Kukulska-Hulme, 2016). Without consideration of the future, the use of the word 'innovation' and in particular, 'pedagogical innovation', is quite meaningless.

To conclude, the teacher educators' accounts of the significance of pedagogical innovation reflect the basis of their practical knowledge, the ideology at the basis of the socioeconomic-cultural structure of the teaching profession and the trends of those who make educational policy decisions. At the same time, this discourse shapes the actual image of teacher training, and so it is important to analyze it and discuss the implications arising from the analysis, as this paper tries to do.

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About the Author

Dr. Dalit Levy is the founder of the innovative program in Community Information Systems at Zefat Academic College and a teacher at the Kibbutzim College of Education, with a rich experience in STEM educational research . The focus of her career has been in both leading research projects and instructional design, as well as sharing her knowledge through instructing academic courses and mentoring teachers and graduate students .Over the course of 20+ years ,she has offered key contributions to this field through ongoing research within the areas of digital pedagogies, computer science education, and pedagogical innovation; departmental leadership and curriculum planning ; development of technology-enhanced learning environments; and authoring academic publications in her fields of expertise

Address

Dr. Dalit Levy;
Department of Community Information Systems; Zefat Academic College, Zefat, Israel.

e-Mail: dality@zefat.ac.il

General and Physics-Specific Mindsets about Intelligence and Giftedness: A Study of Gifted Finnish Upper-Secondary-School Students and Physics Teachers

Taina Makkonen[1], **Jari Lavonen**[2], **and Kirsi Tirri**[2]
[1] Viikki Teacher Training School, University of Helsinki
[2] Faculty of Educational Sciences, University of Helsinki

Abstract

A key factor in supporting talent development among gifted students is the fostering of a growth mindset in their learning. However, there has been little research on the subject-specific mindsets of these students and their teachers. This study examined the mindsets of academically gifted Finnish upper-secondary students (N = 164) and Finnish physics teachers (N = 131) concerning overall and physics-specific intelligence and giftedness. A quantitative approach was used, the data being collected through online questionnaires. The mindsets of both students and teachers were more malleable with regard to intelligence than to giftedness, but with regard to giftedness the teachers' mindsets were more malleable than those of their students. Gender- and grade-level-related differences were found among the students. Among the teachers, variances related to teaching experience, those with the least experience having the most malleable mindsets. The students had similar general and physics-specific mindsets, whereas the teachers' physics-specific beliefs were more malleable than their general beliefs. The mindsets of the gifted students were not particularly growth-oriented, indicating that encouraging malleability may help them to reach their full potential. The results also highlight the need to distinguish between the terms intelligence and giftedness in research on mindsets.

Keywords: Mindset; intelligence; giftedness; upper-secondary students; physics teachers.

The focus of this study was on mindsets, also referred to as implicit beliefs, about intelligence and giftedness. In particular, we were interested in the general and physics-specific mindsets of physics teachers and their gifted students. Although science, technology, engineering and mathematics (STEM) skills are acknowledged as critical factors for innovation and growth in knowledge-intensive societies (Office of Innovation and Improvement, 2016), persistence in studying STEM subjects is not self-evident, even among science-oriented high-ability students (Webb, Lubinski, & Benbow, 2002). Many of these students face barriers such as the avoidance of challenges, underachievement, and an inability to manage when suffering setbacks (Subotnik, Olszewski-Kubilius, & Worrell, 2011). Contrary to the common misconception, gifted students do not automatically excel, but may need different types of support in their learning (Yeung, 2012).

A major factor in fostering creative thinking, overall wellbeing and the challenging of gifted students is to educate them and their teachers in the development of a growth mindset in relation to learning (Tirri, 2016). Mindsets are implicit beliefs held by individuals about their fundamental characteristics and abilities (Dweck, 2000; Dweck, 2006). According to the implicit theory of intelligence (Dweck, Chiu, & Hong, 1995), people believe that intelligence is either malleable (incremental theory) and thus can be developed, or static (entity theory) and thus not open to improvement. Dweck (2006) later referred to these alternatives as a "growth mindset" and a "fixed mindset", respectively. Beliefs about intelligence shape an individual's response to academic challenge (Dweck, 2000; Dweck & Leggett, 1988: see Table 1). Even if both types of individual have equal intellectual ability, those viewing intelligence as an inborn and stable quality tend to withdraw

when facing a challenge exceeding their assumed level of ability. They also prefer performance goals and see tasks as competence tests. Consequently, a fixed mindset may lead to the avoidance of challenges and vulnerability to negative feedback. On the other hand, those endorsing a growth-oriented view place more emphasis on learning goals, seeing a challenge as an opportunity to improve their competence.

Table 1: Features of the Two Mindsets about Intelligence.

Feature	Growth mindset	Fixed mindset
Orientation to challenge	Chance to improve competence	Threat Competence test
Response to challenge	Spending effort Striving to develop	Withdrawal Avoidance
Achievement goal	Learning "Becoming smart"	Performing "Looking smart"
Facing setbacks/negative feedback	Learning from mistakes	Fear of failure

Currently, there is no consensus among scholars concerning the definitions of giftedness and intelligence. Nevertheless, it is recognized in established theories (e.g. Gagné, 2010; Gardner, 1999; Reis & Renzulli, 2009; Subotnik et al., 2011) that giftedness is developmental, meaning that individuals are able to develop their potential through appropriate training (Gagné, 2010). This development is also assumed to be influenced by personal variables such as mindset and motivation (Dweck, 2006; Subotnik et al., 2011). The models also posit that giftedness may manifest unevenly in different domains (Gagné, 2010; Subotnik et al., 2011), and is thus not the same as a high overall IQ. Domain-specificity is well-represented in Gardner's (1999) theory, which emphasizes the problem-solving nature of intelligence and lists eight different types. According to Subotnik et al. (2011), gifted persons demonstrate top-of-the-scale performance even when compared to other high-performing individuals. Gagné (2010) states more specifically that individuals in the top 10 percent of their age group in at least one ability domain could be considered gifted.

Researchers continue to debate on whether individuals' mindsets about intelligence are consistent across academic domains (Martin, Bostwick, Collie, & Tarbetsky, 2017). Physics is usually grouped with other subjects or domain categories such as "STEM subjects", or "quantitative" or "hard" sciences in domain-specific mindset-related studies, and in some cases it is paired with mathematics. Very few studies on mindsets focus exclusively on physics. However, research on higher education in physics, among both students and faculty members, reveals a tendency for a fixed mindset to be associated with talent and success (Leslie, Cimpian, Meyer, & Freeland, 2015; Scherr, Plisch, Gray, Potvin, & Hodapp, 2017). However, the link between mindset and achievement in quantitative subjects might not be as clear as previously thought. As Kuusisto, Laine and Tirri (2017) found in their study among students in elementary and secondary school, fixed beliefs about giftedness but malleable views about intelligence indicated higher grades in mathematics.

Previous studies have also revealed gender differences. A growth-oriented view on math-specific intelligence was found to indicate better learning outcomes among females than males in upper-secondary education (Degol, Wang, Zhang, & Allerton, 2018). It has also been reported that female college students who perceived their learning environment as endorsing growth ideas about math intelligence were likely to preserve a sense of belonging to the subject, even in an environment with a high degree of gender stereotyping (Good, Rattan, & Dweck, 2012). This, in turn, had a positive impact on their achievement and academic choices, whereas among males the link between a fixed mindset and gender stereotyping did not predict a sense of belonging to math. Broome (2001) reported similar findings related to physics. His study among lower-secondary-level students revealed that females with malleable views on physics-specific intelligence rated their problem-solving abilities more highly than females with fixed beliefs, whereas among males the result was the opposite. On the basis of these findings, researchers emphasize the importance of promoting a growth mindset in math- and physics-specific intelligence to increase females' participation in STEM subjects.

According to Dweck (2000), students identified as gifted may be more prone to developing fixed mindsets. However, Mofield and Parker Peters (2018) found no difference in mindsets about intelligence between gifted and average students in middle school. Esparza, Shumow, and Schmidt (2014) also compared intelligence-related science-specific mindsets among gifted and average seventh-grade students, reporting that gifted students had more malleable beliefs. Likewise, gifted 9–17-year-old summer-school students in Feldhusen and Dai's (1997) study held growth-oriented views on their abilities, although the words ability, gift, and talent were used instead of the term intelligence. Snyder, Barger, Wormington, Schwartz-Bloom, and Linnenbrink-Garcia (2013), in turn, showed that labeling high-ability college students as gifted was modestly related to their adopting a fixed mindset about intelligence. Makel, Snyder, Thomas, Malone, and Putallaz (2015) further highlight the need for a clear distinction between intelligence and giftedness as concepts. They found that gifted students understood intelligence and giftedness as being connected, yet many perceived intelligence as malleable and giftedness as stable, rarely the opposite.

Previous research has established the essential nature of the teachers' role in identifying and meeting the needs of gifted students. These students need to be challenged (Reis & Renzulli, 2009) and taught how to motivate themselves to deal with difficult situations (Balduf, 2009). Teachers also have a role in conveying the growth-oriented view of learning to their students (Dweck, 2006). Their mindsets affect their behaviors and pedagogical choices in terms of how they praise their students and deal with failures (Dweck, 2006), and how they introduce new topics and design classroom activities (Davis & Sumara, 2012). Teachers with a malleable view of intelligence prefer open-ended assignments that foster creative learning, for example, whereas those with an entity view tend to favor closed-ended tasks that do not offer growth-oriented feedback (DeLuca, Coombs, & LaPointe-McEwan, 2019). Mindsets are also closely connected to approaches to student assessment (DeLuca et al., 2019).

Studies on the association between teachers' mindsets and teaching domains have produced mixed results. Laine, Kuusisto, and Tirri (2016) found in their study of Finnish teachers' conceptions of giftedness that 54 percent of the teachers had a growth mindset, 30 percent had a fixed mindset, and among the remaining 16 percent the mindset was mixed. They observed no differences between teachers of different subjects. De Kraker-Pauw, Van Wesel, Krabbendam, and Van Atteveldt (2017), in turn, found no association between the teaching subjects and the mindset-related assessment orientation of Dutch teachers. However, they did observe that STEM teachers gave a higher proportion of growth-oriented feedback than non-STEM teachers. In contrast, Jonsson, Beach, Korp, and Erlandson (2012), reported that teachers of the Swedish language and of social science favored a growth over a fixed mindset about intelligence, thereby differing from STEM teachers among whom no such difference was observed.

Research on mindsets across different domains, especially physics, remains limited. We aim to narrow this gap by exploring how gifted students and their teachers view the nature of intelligence and giftedness in general, and specifically in physics. Our research question is as follows:

> What overall and physics-specific mindsets about intelligence and giftedness prevail among gifted students in Finnish upper-secondary education and their physics teachers?

The context of the study

This study was conducted in the context of Finnish upper-secondary school, which provides general academic education typically for 16–19-year-olds, most students graduating in three years. Over the last twenty years, females have comprised more than half of these students, the 2018 ratio being 58 percent (Statistics Finland, 2019). Gifted students have not been a priority in Finnish educational policy or in schools' teaching practices, despite the increasing tendency toward individuality (Tirri & Kuusisto, 2013). Moreover, there are no definitions of giftedness, and no identification criteria.

The selection of students for upper-secondary school is based on their grade point average (GPA) for the theoretical subjects in the basic education certificate. Although there is no official differentiation between schools for gifted and ordinary students, certain upper-secondary schools tend to attract high achievers, and they also require a high GPA for admission (Tervonen, Kortelainen, & Kanninen, 2017). Nevertheless, there are no significant differences in the quality of teaching between the various schools (Tirri & Kuusisto, 2013): high-performing students score equally well in the matriculation examination regardless of the school they attended, for instance (Tervonen et al., 2017). The Finnish national matriculation examination, a biannual series of final tests in several subjects, has an important role in guiding studies in upper-secondary education. The purpose is to evaluate how well students have assimilated the knowledge and skills required by the curriculum and whether they have reached an adequate level of maturity (Matriculation Examination Board, 2020a). It is also used as an entrance examination for third-cycle studies.

We identified the students participating in this study as academically gifted based on their top-of-the-scale performance (Gagné, 2010; Subotnik et al., 2011). The student data for this study was collected in a single school with an exceptionally high GPA requirement for admission, consistently among the highest of all general upper-secondary schools in Finland (Ministry of Education and Culture & Finnish National Agency for Education, 2019). In 2017–2019 the lowest GPAs allowing admission to this school ranged from 9.2 to 9.6 on a scale from 4 (*fail*) to 10 (*excellent*). Second, students from this school tend to achieve very high scores in the matriculation examination: in spring 2019, for example, 73 percent of those matriculating with a grade in physics achieved one of the two highest scores in the subject, against the 31-percent national average (Matriculation Examination Board, 2020b). The overall scores fell within the top five among all 401 Finnish schools offering upper-secondary education (Matriculation Examination Board, 2020b; Natri, Salminen, Ekholm, West, & Lång, 2019).

Teachers in Finland are trained to differentiate their teaching to consider the individual needs of students, yet there are no mandatory courses for teachers focusing on giftedness (Laine, Kuusisto, & Tirri, 2016). Physics teachers, as subject teachers, are qualified to teach on both lower- and upper-secondary levels. Subject teachers in Finland are required to have a Master's degree in their teaching subject(s), and the education also includes pedagogical studies and guided teaching practice. STEM teachers typically specialize in a major and a minor subject, a common combination being mathematics and physics.

Data and methods

Participants

The student data was collected in a single school. Students (N = 164) recognized as gifted responded anonymously to an online questionnaire as part of their physics lesson under the supervision of their teacher. Consent for participation was received from the students, their guardians, and the administrative principal of the school. Most of the respondents identified themselves as either female (n = 102, 62%) or male (n = 59, 36%). In the Finnish education system, students enter the upper-secondary level at the age of 15–16 (first grade). Hence, second-graders are aged 16-17, third-graders 17–18, and fourth-graders 18–19 in the beginning of the school year, which was the time of the data collection. Sixty-two (38%) students were in the first grade of upper-secondary school, 52 (32%) in the second grade, and 50 (30%) in the third or fourth grade. From the original sample of 179 respondents, 15 were removed based on information that they were not continuing to study physics. Thus, all the students in the final sample had selected to study physics beyond the single mandatory course. At the time of their participation the first-graders had completed only one physics course, the second-graders from three to four courses, and the third- and fourth-graders from seven to eight. The mean grade-point-average score in physics was 8.80 (SD = 0.80) on a scale ranging from 4 (*fail*) to 10 (*excellent*). The course grades were based on the teachers' assessment of course work and non-standardized test results.

The teachers (N = 131) were contacted through various regional and national science-teacher networks and were asked to complete an online questionnaire anonymously. Fifty-eight (44%) of the respondents identified themselves as females and 68 (52%) as males. Physics was a major subject among 71 (54%) of them. It was a minor subject among the rest (n = 60, 46%), the major typically being mathematics or chemistry. Three teachers with mathematics as their major also had a secondary major in physics.

The sample included teachers with a wide range of experience in teaching physics, the categories being less than one year (n = 5, 4%), from 1 to 5 years (n = 31; 23.5%), from 6 to 10 years (n = 26, 20%), from 11 to 15 years (n = 31; 23.5%), from 16 to 20 years (n = 6, 5%), and 21 years or more (n = 32, 24%). The majority of the respondents had accumulated most of their physics-teaching experience in upper-secondary (n = 54, 41%) or lower-secondary (n = 45, 34%) schools, or a combination of the two (n = 18, 14 %). The rest (n = 14, 11%) gained most of their experience on the vocational or university level.

Instrument

We utilized Dweck's instrument to investigate the beliefs of students and teachers about the overall nature of intelligence and giftedness. Dweck's instrument is a frequently used, originally 8-item self-report scale measuring fixed and growth mindsets about intelligence (Dweck, 2000, pp. 177–178). The instrument uses the following scores: 1 (*strongly agree*), 2 (*agree*), 3 (*mostly agree*), 4 (*mostly disagree*), 5 (*disagree*), and 6 (*strongly disagree*). We expanded the instrument with the physics-specific counterparts of the original items. We used four sets of four statements addressing overall and physics-specific intelligence as well as overall and physics-specific giftedness (Table 2). The participants indicated their attitude towards the statements on the previously mentioned 6-point Likert scale, the lower scores corresponding to a more fixed mindset.

With regard to the teachers, background information was collected on gender, teaching experience, major subject, and the school level of which they had the most experience, whereas the students were asked about their gender, grade level and whether they were going to continue studying physics in upper-secondary school. Grade point averages in physics were computed from the school's student record system.

Results

Students

Statistical analyses were conducted in several phases using SPSS version 25. A principal component analysis (PCA) was carried out to see if the items differed from each other. We had hypothesized that the components would correlate, hence we used a direct oblimin for oblique rotation. The Kaiser-Meyer-Olkin measure, *KMO* = .902, indicated a very good level (De Vaus, 2002) of sampling adequacy for the PCA. The Bartlett's test of sphericity was significant (p = .000), verifying that we could carry out the analysis.

The data revealed two components with eigenvalues exceeding Kaiser's criterion of 1, explaining 79.28 percent of the variance. The first component consisted of both general and physics-specific items related to giftedness, and the second one comprised both overall and physics-specific items about intelligence (Table 2). The Cronbach's alpha (1984) for the eight giftedness items was 0.972, and for the eight intelligence items it was 0.949, both indicating an acceptable level of internal consistency. Paired samples t-tests revealed no statistically significant differences between the overall and the physics-related items in either component.

Table 2: Items, Means, Component Loadings, Communalities (h^2), Cronbach's Alphas, and Percentages of Variance in the Student Sample (N = 164).

Item	*M* (SD)*	Comp. 1	Comp. 2	h^2
Mindset about intelligence	4.25 (0.95) α = .949			
General	4.24 (0.97)			
1. You have a certain amount of intelligence, and you really cannot do much to change it.	4.36 (1.03)	.06	.82	.71
2. Your intelligence is something about you that you cannot change very much.	4.12 (1.10)	–.05	.86	.70
3. To be honest, you cannot really change how intelligent you are.	4.45 (1.06)	–.12	.89	.73
4. You can learn new things, but you cannot really change your basic intelligence.	4.02 (1.12)	.05	.85	.76
Physics-specific	4.25 (1.04)			
5. You have a certain amount of intelligence in physics, and you really cannot do much to change it.	4.30 (1.09)	.06	.86	.77
6. Your intelligence in physics is something about you that you cannot change very much.	4.16 (1.06)	.03	.88	.80
7. To be honest, you cannot really change how intelligent you are in physics.	4.42 (1.13)	.00	.88	.78
8. You can learn new things in physics, but you cannot really change your basic intelligence in physics.	4.14 (1.23)	.05	.83	.71
Mindset about giftedness	3.54 (1.27) α = .972			
General	3.54 (1.36)			
9. You have a certain amount of giftedness, and you really cannot do much to change it.	3.65 (1.38)	.92	–.05	.82
10. Your giftedness is something about you that you cannot change very much.	3.46 (1.41)	.96	–.11	.86
11. To be honest, you cannot really change how gifted you are.	3.64 (1.47)	.94	–.03	.87
12. You can learn new things, but you cannot really change your basic giftedness.	3.42 (1.43)	.94	–.05	.86
Physics-specific	3.56 (1.27)			
13. You have a certain amount of giftedness in physics, and you really cannot do much to change it.	3.70 (1.31)	.86	.07	.78
14. Your giftedness in physics is something about you that you cannot change very much.	3.49 (1.30)	.87	.08	.81
15. To be honest, you cannot really change how gifted you are in physics.	3.63 (1.38)	.90	.09	.88
16. You can learn new things in physics, but you cannot really change your basic giftedness in physics.	3.44 (1.35)	.88	.09	.84
Percent of variance		55.14	24.15	

* On a Likert scale ranging from 1–6; higher values indicate malleable beliefs.

We conducted a correlation analysis based on Spearman's *rho* to find out how the mindsets about intelligence and giftedness were related to each other, to gender, and to the grade level (Table 3). We followed a non-parametric procedure given that none of the variables were normally distributed, and we included the only two fourth-grade students in the third-grader group. In the overall data, students' mindsets about intelligence were moderately related to their views on giftedness (*rho* = .379, $p < .01$). As Table 4 shows, these correlations were highest among the second-graders (*rho* = .552, $p < .01$) and females (*rho* = .491, $p < .01$). Paired samples *t*-tests revealed a statistically significant difference between the two mindsets for both genders and on every grade level (Table 4).

Table 3: Spearman's rho Correlations in the Student Sample.

Variable	Mindset about intelligence	Mindset about giftedness	Gender
Views on giftedness	.379**	—	
Gender	–.047	–.166*	—
Grade level	–.087	–.212**	.117

*$p < .05$, **$p < .01$.

Table 4: Views on Intelligence and Giftedness in Different Student Categories.

Student characteristic	*N*	Mindset about intelligence		Mindset about giftedness		Spearman's *rho*	Paired samples *t*-test
		M	*SD*	*M*	*SD*		
Gender:							
Female	102	4.29	0.89	3.70	1.15	.491**	$t(101) = 5.764$***
Male	59	4.16	1.07	3.22	1.43	.204	$t(58) = 4.448$***
Grade level:							
First	62	4.35	0.98	3.75	1.23	.379**	$t(61) = 3.571$**
Second	52	4.24	0.86	3.76	1.21	.552**	$t(51) = 3.415$**
Third	50	4.13	1.01	3.06	1.27	.248	$t(49) = 5.335$***
Entire sample	164	4.25	0.95	3.54	1.27	.379**	$t(163) = 7.049$***

**$p < .01$, ***$p < .001$; scale of 1–6, higher values indicate malleable beliefs.

The grade level correlated negatively but weakly with the students' views on giftedness (*rho* = –.212, $p < .01$). The result of Levene's test ($p = .784$) was not significant, therefore we conducted a one-way analysis of variance (ANOVA). The result showed a statistically significant difference between the grade levels ($F(2) = 5.486$, $p = .005$, $\eta_p^2 = .06$). Further, Bonferroni post hoc tests revealed that the third-graders' views on giftedness were statistically significantly more fixed than those of the first-graders and the second-graders ($p = .011$, $p = .015$, resp.).

There was a weak correlation between gender and views on giftedness (*rho* = –.166, $p < .05$), female students ($M = 3.70$, $SD = 1.15$) having a more malleable mindset than their male counterparts ($M = 3.22$, $SD = 1.43$). Given that the variable was not normally distributed in either gender, and that Levene's test ($p = .012$) was significant, we compared the genders by conducting a nonparametric Mann-Whitney U -test. The result showed a statistically significant difference ($U = 2410.5$, $p = .036$, $d = .370$) with a mean rank of 86.87 for females and 70.86 for males.

The mean grade-point-average score for the students' physics courses was 8.70 ($SD = .84$) among the females and 8.94 ($SD = .72$) among the males: the difference was not statistically significant.

Teachers

The Kaiser-Meyer-Olkin measure, *KMO* = .884, indicated a meritorious level of sampling adequacy, and Bartlett's test of sphericity was significant ($p = .000$). PCA identified two principal components with eigenvalues exceeding Kaiser's criterion of 1, explaining 82.74 percent of the variance. The first component consisted of general and physics-specific items related to intelligence, and the second of overall and physics-specific items related to giftedness (Table 5). An acceptable

level of internal consistency was achieved, the alpha coefficient being 0.967 for the eight intelligence items and 0.969 for the eight giftedness items.

Table 5: Items, Means, Component Loadings, Communalities (h^2), Cronbach's Alphas, and Percentages of Variance in the Teacher Sample (N = 131).

Item	*M* (SD)*	Comp. 1	Comp. 2	h^2
Mindset about intelligence	4.48 (1.09) α = .967			
General	4.32 (1.13)			
1. You have a certain amount of intelligence, and you really cannot do much to change it.	4.43 (1.21)	.92	.00	.84
2. Your intelligence is something about you that you cannot change very much.	4.22 (1.19)	.92	–.08	.79
3. To be honest, you cannot really change how intelligent you are.	4.44 (1.16)	.94	–.07	.83
4. You can learn new things, but you cannot really change your basic intelligence.	4.19 (1.31)	.87	.01	.76
5. Physics-specific	4.63 (1.15)			
6. You have a certain amount of intelligence in physics, and you really cannot do much to change it.	4.70 (1.18)	.90	.07	.87
7. Your intelligence in physics is something about you that you cannot change very much.	4.61 (1.17)	.89	.06	.84
8. To be honest, you cannot really change how intelligent you are in physics.	4.69 (1.18)	.90	.05	.86
9. You can learn new things in physics, but you cannot really change your basic intelligence in physics.	4.52 (1.28)	.86	.06	.79
Mindset about giftedness	4.10 (1.21) α = .969			
General	3.99 (1.23)			
10. You have a certain amount of giftedness, and you really cannot do much to change it.	4.22 (1.30)	.20	.75	.75
11. Your giftedness is something about you that you cannot change very much.	3.87 (1.29)	–.08	.95	.82
12. To be honest, you cannot really change how gifted you are.	4.03 (1.34)	–.02	.93	.85
13. You can learn new things, but you cannot really change your basic giftedness.	3.82 (1.36)	–.10	.94	.81
14. Physics-specific	4.20 (1.28)			
15. You have a certain amount of giftedness in physics, and you really cannot do much to change it.	4.33 (1.31)	.18	.81	.84
16. Your giftedness in physics is something about you that you cannot change very much.	4.19 (1.31)	.03	.90	.83
17. To be honest, you cannot really change how gifted you are in physics.	4.25 (1.34)	.03	.93	.89
18. You can learn new things in physics, but you cannot really change your basic giftedness in physics.	4.05 (1.39)	–.03	.95	.87
Percent of variance		63.28	19.46	

* On a Likert scale ranging from of 1–6, higher values indicate malleable beliefs.

A paired samples *t*-test revealed a statistically significant difference between the overall and the physics-specific items related to intelligence ($t(130) = 5.486$, $p = .000$, $d = 0.479$). Likewise, there was a statistically significant difference between the overall and the physics-specific items related to giftedness ($t(130) = 3.699$, $p = .000$, $d = 0.323$). However, given that the effect sizes were small and the mean values were located close to each other, all indicating moderately neutral views, we did not find it useful to separate the items into general and physics-specific subcategories for further analysis.

The correlations between implicit beliefs and the background variables were subjected to the Spearman's *rho* test (Table 6). Over the entire sample, the teachers' views on intelligence correlated

moderately with their views on giftedness (*rho* = .531, $p < .01$). Paired-samples *t*-tests revealed differences in teacher characteristics, however (Table 7). First, teachers whose major subject was physics understood that the nature of intelligence and giftedness are inherently different, whereas the teachers with mathematics as their major did not. Second, teachers with 21, or more, years of experience teaching physics did not differentiate between their intelligence and giftedness mindsets, whereas those with 20, or less, years of experience did make the distinction. Third, teachers with the most experience at the lower-secondary level had different beliefs about intelligence compared to giftedness, whereas those with the most experience in upper-secondary school made no such distinction.

Table 6: Spearman's rho Correlations in the Teacher Sample.

Variable	Mindset about intelligence	Mindset about giftedness	Gender	Major subject	Teaching experience
Views on giftedness	.531**	—			
Gender	–.012	–.086	—		
Major subject	–.060	–.050	.031	—	
Teaching experience	–.275**	–.072	.055	–.309**	—
Level on which the most experience	.021	.244*	.139	–.328**	.294**

*$p < .05$, **$p < .01$.

Table 7: Views on Intelligence and Giftedness in Different Teacher Categories.

Teacher characteristic	*N*	Mindset about intelligence		Mindset about giftedness		Spearman's *rho*	Paired samples *t*-test
		M	*SD*	*M*	*SD*		
Gender:							
Female	58	4.51	1.06	4.23	1.14	.569**	$t(57) = 2.221$*
Male	68	4.44	1.14	3.94	1.27	.497**	$t(67) = 3.439$**
Major subject:							
Physics	71	4.55	1.05	4.15	1.21	.520**	$t(70) = 3.033$**
Mathematics	43	4.41	1.07	4.05	1.16	.398**	$t(42) = 1.984$
Experience (years):							
≤ 5	36	4.89	0.68	4.27	1.24	.391*	$t(35) = 3.258$**
6–10	26	4.67	1.07	4.08	1.17	.311	$t(25) = 2.296$*
11–20	37	4.30	1.27	3.98	1.23	.659**	$t(36) = 2.152$*
≥ 21	32	4.05	1.11	4.05	1.23	.621**	$t(31) = –.015$
Level on which the most experience:							
Lower secondary	43	4.42	1.11	3.91	1.11	.420**	$t(42) = 2.847$**
Upper secondary	53	4.43	1.14	4.36	1.10	.672**	$t(52) = .641$
Entire sample	131	4.48	1.09	4.10	1.21	.531**	$t(130) = 3.929$***

*$p < .05$, **$p < .01$, and ***$p < .001$; scale of 1–6, higher values indicate malleable beliefs.

Teaching experience correlated negatively but weakly with the teachers' mindsets about intelligence (*rho* = –.275, $p < .01$). Given that the views were not normally distributed in either of the experience categories (Table 7), and that Levene's test ($p = .012$) showed significance, we carried out a nonparametric Kruskal-Wallis one-way analysis of variance to examine the differences. There was a statistically significant difference between the experience categories ($H(3) = 10.107$, $p = .018$). More specifically, pairwise comparisons placed a statistically significant difference ($Z = 3.048$, $p = .014$, $r = .39$) between the least experienced (≤ 5 yr.) (mean rank = 41.67) and the most experienced (≥ 21 yr.) (mean rank = 26.44) teachers.

Further, the school level on which the teachers had the most experience correlated weakly with their beliefs about giftedness (*rho* = .244, $p < .05$). Those with most experience on the upper-secondary level had more malleable ideas than those with most experience on the lower-secondary level. However, the *t*-test indicated that the difference was not statistically significant.

Students and teachers compared

The teachers were more malleable than the students in their mindsets about intelligence, and a similar result held for giftedness. However, the results of the *t*-tests showed that students and teachers differed statistically significantly only regarding giftedness ($M_{\text{teachers}} = 4.10$ (1.21), $M_{\text{students}} = 3.54$ (1.27), $t(293) = 3.802$, $p = .000$, $d = .446$).

Discussion

We investigated the mindsets of academically gifted Finnish students at upper-secondary school ($N = 164$) and Finnish physics teachers ($N = 131$) about overall and physics-specific intelligence and giftedness. The results showed that both students and teachers had somewhat malleable mindsets about intelligence, which regarding the students is in line with the findings from a study of students on a summer program conducted by Feldhusen and Dai (1997). Moreover, because of the high physics grades achieved by the students in our study, the results follow a similar trend as observed by Kuusisto et al. (2017) indicating that students' fixed views on giftedness related to higher grades in mathematics. However, our results contrast with those reported by Leslie et al. (2015) and Scherr et al. (2017), although their research focused on the university level. The general trend indicating that teachers have more malleable mindsets than students is reasonable in the light of teacher ethics, according to which teachers should believe in their students' learning capabilities and continuous talent development (Tirri, 2016).

The most malleable mindsets about intelligence were observed among the newcomers, in other words first-year students and the least experienced teachers. The difference in malleability between grade levels was not significant among the students, but among the teachers the more experienced they were the weaker their malleability. On the other hand, mindsets about giftedness followed the opposite trend: there were differences related to grade level in the student sample, the third-graders being the most fixed, whereas mindsets about giftedness were not related to the length of teaching experience. We interpret these findings as reflecting a somewhat natural development in students during their school years. Although they compare themselves with their peers from early on, the last year of upper-secondary school is the most crucial for their future. By the time of the matriculation examination, most students' self-rated belief in their own abilities has stabilized on a certain level. However, views on giftedness appear to settle earlier than intelligence-related views, which were still observed to change among the teachers.

By placing themselves in the gray area between a clear fixed and a clear growth mindset, the students exhibited mixed views about the developmental idea of giftedness (Gagné, 2010; Subotnik et al., 2011). However, as Dweck (2000) states, using the term "gifted" in labeling students could in itself lead to fixed beliefs in that as "it implies that some entity, a large amount of intelligence, has been magically bestowed upon students" (p. 122). Although Finnish schools do not label students as gifted, it is possible that even using the term may interfere with their beliefs about giftedness. Consequently, our finding that the mindsets about intelligence were more malleable than those about giftedness verify the recommendation of Makel et al. (2015) to make a clear distinction between the two terms.

Among the students, gender was not related to their mindset about intelligence, but there was an association with giftedness. On average, the females' mindsets about giftedness were slightly malleable whereas those of the males were somewhat fixed. It should also be noted that physics grades did not differ between the genders. The observed gender-specific variance in mindsets is in line with the findings reported by Kuusisto et al. (2016) in a similarly Finnish context.

Although gender was not related to the teachers' mindsets about intelligence or giftedness, statistical analyses revealed interesting relations between differences in mindsets and specific teacher characteristics. Teachers with 21 years or more experience, with mathematics as their major subject or those acquiring most of their experience at the upper-secondary level did not think differently about intelligence and giftedness, whereas those with less experience, physics as their major or whose experience was mostly on the lower-secondary level made a distinction. These findings raise the question of whether school levels or changes in teacher education differ in ways that could explain the observed differences.

The overall and the physics-specific mindsets did not differ within the student sample. Instead, it was encouraging to find that the physics-specific views of the teachers were more malleable than their overall views. Although the difference was minor, it is indicative of teachers' attitudes to learning in their field. According to Dweck (2006), teachers' actions reflect their own mindsets. Physics is generally considered a difficult subject, thus their mindset may play a crucial role in their pedagogical choices, and in how they convey their own perceptions to their students.

The student data for this study was collected in a single school, hence it is questionable whether one could generalize the results to all gifted upper-secondary students in Finland. There are only a few Finnish schools in which all the students are high achievers, as in this school. It is more typical for the gifted to study among normal students in normal schools. Therefore, more research is needed to assess the possible impact of the school environment and their peers on the mindsets of gifted students in these schools. Furthermore, the teacher data was collected by means of convenience sampling and thus might not be sufficiently representative. However, it would have been practically impossible to adopt a sampling method that was not based on voluntary participation.

Conclusion

Mindsets offer an explanation for differences in gifted students' achievement goals and challenge-related behaviors. If we are to help these students in reaching their full potential in STEM subjects, we need to bring mindsets to the center of our attention. This study indicates that there is still room for mindsets about giftedness to move in a more malleable direction, especially among males and the oldest students.

Interventions, typically conducted by researchers, have proven beneficial in promoting growth mindset in students (Rissanen, Kuusisto, Tuominen, & Tirri, 2019). However, driving such changes with everyday teacher-driven pedagogical practices has been neglected both in classrooms and research. We suggest the framework for growth mindset pedagogy (Rissanen et al., 2019) to be applied in physics instruction by fostering formative assessment, in other words valuing learning over grades, and by embracing mistakes as a source for learning. Moreover, gifted students should not be protected from difficult tasks. This could be especially important for students with fixed mindsets, as they tend to respond to challenges in negative ways.

Given that a fixed mindset can develop at an early age (Dweck, 2000), it would be useful to study mindsets more thoroughly on lower school levels. If high-achieving young students undervalue persistence, they may face serious setbacks as subject matter becomes more difficult on upper-secondary level. Pedagogical tools such as student self-evaluation could also be used for providing teachers with practical feedback on students' implicit beliefs.

The teachers in this study held incremental views on intelligence and giftedness. However, it is not self-evident that all teachers with a growth mindset actualize it in their classroom practices. Teachers need tools to convey the idea of malleable human qualities to their students. Therefore, providing knowledge of mindsets and their implications should be an essential part of teacher education.

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About the Authors

Addresses

Lic.Phil. Taina Makkonen;
University of Helsinki; Viikki Teacher Training School; P.O. Box 30 (Kevätkatu 2);
00014 University of Helsinki, Finland.
e-Mail: taina.makkonen@helsinki.fi

Prof. Dr. Jari Lavonen;
University of Helsinki; Faculty of Educational Sciences; P.O. Box 9 (Siltavuorenpenger 5A);
00014 University of Helsinki, Finland.
e-Mail: jari.lavonen@helsinki.fi

Prof. Dr. Kirsi Tirri;

University of Helsinki; Faculty of Educational Sciences; P.O. Box 9 (Siltavuorenpenger 5A); 00014 University of Helsinki, Finland.
e-Mail: kirsi.tirri@helsinki.fi

Low-Income Gifted Students in the United States: Are their Peers in Other Countries Treated Better?

Hani Morgan; Tom O'Brien
University of Southern Mississippi, USA

Abstract

This article compares the way the United States deals with its low-income gifted students with the methods Finland, Japan, and Singapore implement for these pupils. Four components of gifted education were used to compare these nations: the methods for identifying gifted students, each country's gifted education policy, the educational opportunities for low-income gifted students, and the concerns each nation faces relating to the education of gifted pupils. The conclusion focuses on the practices Finland, Japan, and Singapore implement that would benefit low-income, high-ability students in the United States.

Keywords: Inequalities; Low-Income Students; Comparative Education.

Nations in different regions of the world can vary greatly in the methods implemented for teaching low-income students. For example, Singapore's approach to teaching these students differs greatly from that of the United States. Singapore, like Finland and Japan, does a better job of supporting children equitably (Darling-Hammond, 2014-15; Morgan, 2018). To explore how a few top-performing nations in international testing differ from the United States in their approaches to teaching low-income gifted students, the methods of three leading nations in international testing were analyzed. The methods of Japan and Singapore were investigated because these two countries are known for their high scores on one of the most important international tests: the Program for International Student Assessment (PISA). Finland's approach was also analyzed because this nation has usually been considered the leading European country in international testing throughout the 21st century (Morgan, 2018).

Four components were used to compare the United States with these nations on how each of them deals with low-income gifted students: the methods for identifying high-ability students, each country's gifted education policy, the educational opportunities for low-income gifted students, and the concerns each nation faces relating to gifted education.

Background

Before exploring how these nations differ in their methods to teaching low-income gifted students, we offer a brief background on international testing. We also include information on the characteristics of high-ability students.

The program for international student assessment

The Program for International Student Assessment (PISA) is offered every three years to 15-year-old students in reading, mathematics, and science (OECD, 2018a). On the 2015 PISA, Singapore surpassed all nations in the three subjects this test covered. Japan scored second in science, fifth in math, and eighth in reading, and Finland performed very well when compared with how other European nations fared, coming in fifth in science, fourth in reading, and twelfth in math. In contrast, American students continued to achieve unimpressive results.

Low-income students in these three high-scoring nations tend to outperform their counterparts in the United States. One of the ways the PISA results were analyzed was by determining the percentage of socioeconomically disadvantaged students who achieve a certain level of proficiency in the three cognitive domains the PISA assesses. PISA refers to these students as core-skills resilient students. The top-performing nations, which include Singapore, Japan, and Finland, were found to have the largest shares of core-skills resilient students (OECD, 2018b).

Gifted Students

Gifted students are generally considered to include those with above average ability in an academic field such as language arts, mathematics, and science. These students can also include those with exceptional intellectual, creative, artistic, or leadership skills (National Association for Gifted Children [NAGC], n.d.-a). The number of gifted students in the world and in the United States is difficult to determine because it depends on the methods used to identify them (NAGC, n.d.-a).

Winner (1996) distinguished between profoundly and moderately gifted children students. She explained that the former have an extraordinary passion to pursue the area in which they have exceptional talent. For example, they may read voraciously even before entering kindergarten. In contrast, moderately gifted children are usually described as bright, but they do not exhibit an obsessive desire to master an area. Although they may score highly on IQ tests, they are not years ahead of their peers like profoundly gifted children.

Callahan (2018) explained that there are no crucial developmental times when students exhibit gifted traits. Children are not necessarily born with talent and may develop it late in life. For example, Laura Ingalls Wilder did not publish her first book until the age of 65. In addition, not all traits of giftedness are positive. Someone with advanced verbal ability can be viewed as disruptive, and students with superior academic ability may act out if placed in classes below their grade level as a consequence of being bored. Further, not all gifted students exhibit the behaviors that characterize them as gifted all of the time (Callahan, 2018).

Since gifted students learn faster than their peers of the same age, their teachers need to differentiate instruction. Specifically, teachers need to adjust the level, depth, and pace of their teaching to match these students' abilities (Firmender, Reis, & Sweeny, 2013; **NAGC, 2010).** Educators also may need to include appropriate interventions, such as parent education, counseling, and placement in a program designed for older students. Many gifted students do not do well in school because they lack educational opportunities resulting from poverty, cultural barriers, or discrimination (Kautz, 2017; NAGC, 2010). Such students need to be provided with additional support and placed in challenging programs to have a chance to work at a level appropriate with their skills **(**NAGC, 2010).

Methods for identifying gifted students in the United States

American schools typically identify gifted students through nomination and screening (NAGC, n.d.-b). Examples of instruments used for identification include intelligence and achievement tests, student cumulative records, teacher observations, nomination forms, portfolios, and student educational profiles (NAGC, n.d.-b). Since a single test cannot measure all the talents gifted students may possess, one best practice for identification is the use of multiple assessments. Further, to promote equity, teachers need to recognize that students from cultural minority groups may exhibit giftedness in different ways than mainstream students (Johnsen, 2009). To nurture these students' gifts, educators need to provide an environment allowing them to focus on their talents rather than their weaknesses.

Unfortunately, many states fail to recognize some students as gifted because they focus on academic ability and overlook the other talents high-ability students may possess. A recent study, for example, found that over half of states emphasize intellectual and academic abilities in their

definitions of giftedness (Hodges, Tay, Maeda & Gentry, 2018). Additionally, some gifted programs have been found to overlook gifted children who do not show the cooperative, high-achieving behaviors some educators believe students need to display to attend these programs (Hamilton et al., 2018; Kautz, 2017).

American's policy on gifted education

The Jacob Javits Act is the only federal program devoted especially for gifted students in the United States (NAGC, n.d.-c). The Javits Act was passed in 1988 and reauthorized under the Every Student Succeeds Act to encourage the development of talent in U.S. schools. Its purpose is to arrange programs of research, demonstration projects, and strategies that help elementary and secondary schools meet the needs of gifted and talented students. The Javits Act funds demonstration grants and a National Research and Development Center that conducts research designed to inform practice. Like other federal programs, Congress funds the Javits program (NAGC**,** n.d.-c).

Although the Javits Act is designed to serve underrepresented students, especially minority and economically disadvantaged youth, gifted low-income students achieve at lower levels than their more privileged peers both in high school and beyond it. Some of the reasons they underperform involve the harsh living conditions children from low-income families endure and the inferior schools they usually attend (Morgan, 2019). Other concerns related to gifted education policy in the United States include the great diversity in programs within and among states (VanTassel-Baska, 2018).

Equity for U.S. Students

The high-poverty schools that many low-income gifted students attend lack the resources to accurately identify high-ability students. This condition contributes to the low percentage of these children in gifted programs. The Thomas B. Fordham Institute indicated that students in high-poverty schools, where high proportions of students of color attend, participated in gifted programs at about half the rate than that of pupils who attended low-poverty schools (Yaluma & Tyner, 2018).

In addition to having inadequate textbooks and fewer computers, schools serving large numbers of students of color are typically overcrowded. Many of these schools fail to offer the courses needed for students to be eligible for college and operate with a shortened school day and school year (Darling-Hammond, 2014). Such an environment makes it difficult to perceive these students as gifted because they do not experience the conditions needed to show their talents. Consequently, many talented low-income students of color do not get recognized as gifted students (Gollnick & Chinn, 2013; Olszewski-Kubilius & Corwith, 2018).

In addition, teachers who teach in low-income schools generally have fewer qualifications than their counterparts who work for wealthier districts (Owens, Reardon, & Jencks, 2016). Such schools are more likely to hire teachers with emergency credentials than low-poverty, low-minority schools. Teachers on these credentials are the least qualified teachers (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). This trend should concern American policymakers interested in improving the schools gifted low-income students attend because qualified teachers can make a significant difference in children's academic success (Morgan, 2018). With lower numbers of qualified personnel, underserved schools are less likely to identify their high-ability students accurately and to offer them the stimulating environment they deserve.

In some cases, students from wealthier families may get placed in a gifted class simply because their parents can afford to pay for an IQ test that helps in determining if their children are eligible. For example, Card and Giuliano (2015) investigated one district allowing parents the option to hire a private psychologist to test their children in order to present IQ scores directly to the district. Psychologists who could provide the tests were easy to find because there was an active market for IQ testing where the district was located, and psychologists in the area had posted advertisements to attract wealthier parents.

Concerns about gifted education in the United States

One obvious concern about U.S. gifted education programs is the low percentage of socioeconomically disadvantaged students enrolled in these programs and the consequences of this problem. Recent statistics indicated that only 6.1% of students in high-poverty schools participated in gifted programs but that 12.4% of those in low-poverty schools participated in gifted education (Yaluma & Tyner, 2018). The evidence suggests that the academic gap between these students and their more privileged counterparts would narrow if the percentage of low-income students of color in gifted programs increased.

When South Carolina implemented a new policy that increased the percentage of low-income and minority children in these programs, students benefitted in several ways. This approach boosted the students' self-confidence and developed their communication skills more than if they would have remained in regular classrooms **(**VanTassel-Baska, 2018). Card and Giuliano (2016) concluded that participation in gifted classrooms helped Black and Hispanic students make achievement gains at a large urban school district. They indicated that gifted programs had the potential to serve large numbers of high-achieving disadvantaged students at little or no cost to other students.

Other concerns about gifted education involve programs that can vary greatly within and between states and the lack of legislation designed to address the needs of gifted students regardless of their socioeconomic background. For example, the No Child Left Behind Act did not address gifted students. This problem leads many gifted pupils to sit in classes without instruction that meets their needs (VanTassel-Baska, 2018).

Methods for identifying gifted students in Finland

In contrast to the United States, Finland does not identify gifted students. This may lead educators in other countries to assume that a large number of high-ability children in Finland do not receive the education they deserve. However, gifted students in Finland are more likely to receive stimulating instruction than those in other countries because the newest Basic Education Act emphasizes individualism and diverse education. As a result, Finnish educators accept learners as unique and respect their rights. Further, Finland's approach to education is in harmony with an important aspect of gifted education: acceleration (Tirri & Kuusisto, 2013). Acceleration occurs when students skip an entire grade, take an Advanced Placement class, or enroll in a class with students in a higher grade (Finn & Wright, 2015).

Finland's policy on gifted education

Finland does not have a gifted education policy, and gifted students are not discussed in any important educational documents. Gifted education has been a controversial topic in Finland, with some interest groups perceiving it as necessary while others view it as elitist (Laine & Tirri, 2016). Discussing giftedness in Finland can even create feelings of discomfort as a result of traditional cultural beliefs. In contrast to the individualistic values that prevail in the United States, Finnish people tend to have egalitarian attitudes (Morgan, 2014). Therefore, they shy away from regarding one person as being more talented than others (Laine & Tirri, 2016).

Despite the absence of a gifted education policy, Finland's approach to education serves high-ability students rather well because students are placed in classes that match their skills. This occurs as a result of the strong emphasis on identifying and providing support for all students with needs in reading, writing, and math. Consequently, schools in Finland have a higher rate of students with special needs at the primary level when compared with the percentage of students who receive special education in many other countries (Morgan, 2014). These students may be children with learning disabilities or those below grade level in a particular subject. At the upper secondary school level, schools use modular curriculum units, allowing students to take courses at their own pace. Thus, students with strong academic abilities can complete their studies at a faster rate than other pupils (Sahlberg, 2012).

Additionally, as a result of the strong emphasis on differentiated instruction, many students in Finland receive instruction that matches their skill levels. In fact, the national core curriculum considers differentiation as the foundation of teaching, and this instructional approach starts in kindergarten (Laine & Tirri, 2016). Because differentiation focuses on children's needs, teachers in Finland are expected to provide support for both gifted students and those with learning problems.

Although Finland does not have a gifted education policy, special schools exist. These are schools with higher than average percentages of students who get admitted to a university. Such schools are similar to those for the gifted. Finland has over 50 special high schools, and many families send their children to these schools so that they have better chances for university admission. These schools admit students based on their applicants' GPA, and some require admission examinations, interviews, or other methods of evaluation (Finn & Wright, 2015).

Equity for students in Finland

Finland's egalitarian school system creates opportunities for low-income gifted students to receive stimulating instruction that matches their talents. Whereas in the United States socioeconomically disadvantaged children usually attend underserved schools (Owens, Reardon, & Jencks, 2016), in Finland, the schools are more similar in quality, regardless of how many low-income students attend (Morgan, 2014; Sahlberg, 2012).

Since the Finns value egalitarian principles, they tend to resist separating students. Consequently, they implement education for high-ability students in mixed-ability settings (Laine & Tirri, 2016). However, some students with special needs are placed in a separate class in their school or in a separate institution when necessary (Sahlberg, 2012). One reason low-income gifted students are likely to experience a stimulating education in Finland is that all their teachers are rigorously prepared to teach. In addition, teacher attrition is not a problem. Teachers usually stay in the same school for life, and very few primary teachers leave their profession after the first 5 years. Only about 10% to 15% of teachers leave the profession (Darling-Hammond & Rothman, 2015). In the United States, however, teacher attrition rates are high, especially in low-income schools (Morgan, 2018).

In contrast to the United States, Finland requires all teachers to complete a more rigorous and selective teacher education program than most of those American teachers attend. They also need to hold a five-year master's degree to teach. And the admission process in Finland is fierce. In 2010, over 6,600 students applied for the 660 slots available for the primary school preparation programs (Economic Opportunity Institute, 2012; Hancock, 2011).

Concerns about gifted education in Finland

Although Finland does a fine job in providing its low-income children opportunities to succeed academically, the country receives its share of criticism for the way high-ability students are treated. Teacher training programs devote sufficient time to prepare future teachers for teaching students with disabilities but almost no time to prepare them to teach gifted students. Although they are expected to provide a fast pace for high-ability students, they receive inadequate training on teaching these students.

It is not uncommon for future teachers to listen, at most, to a single lecture on the characteristics of gifted students. This lack of training leads to a lack of consistency in teaching high-ability students at the primary and middle schools levels (Finn & Wright, 2015).

The lack of emphasis on gifted education is, in part, the result of how special education is perceived in Finland. Educators in Finland tend to view special education as an approach to support students with learning disabilities rather than gifted students. As a consequence, less emphasis is placed on research on gifted education than on research for students with learning disabilities (Tirri & Kuusisto, 2013).

Another concern involves the trend to offer better educational opportunities for gifted children from wealthier families. Although differences in school quality in Finland are generally smaller than those in many countries, they exist. Some parents with high-ability children even move to a new neighborhood to send their kids to the best schools. They can tell which schools perform poorly and which ones contain more children from low-income families because struggling schools receive extra resources. Despite Finland's reputation as an egalitarian country, this controversial practice is increasing and contributing to segregated neighborhoods (Finn & Wright, 2015).

Methods for identifying gifted students in Japan

Like Finland, Japan has no official methods for identifying gifted students and no formal definition of giftedness. Nonetheless, students have the opportunity to be educated in a similar way to those placed in a traditional gifted program. Since there are no official gifted programs, education that plays this role is sometimes referred to as virtual gifted education or de facto gifted education. This form of education is available inside and outside of school settings (Matsumura, 2016).

The de facto gifted education system sorts the highest-performing students based on their school entrance examinations, but this process generally does not occur until the middle and high school levels (Ibata-Arens, 2012). During the primary grades, parents can enroll their children in a few selective schools affiliated with teacher training programs. These schools offer accelerated instruction, especially for children from wealthier families. In addition, regular primary schools may implement ability grouping, but they need to get government approval to do this (Finn & Wright, 2015).

Although public primary schools are generally not ranked, when students move up to the middle and high school grades, they enter schools that are ranked according to how well these institutions prepare students to enter the best universities. The students who perform highest on the entrance examinations are those who attend the highest-ranked schools (Ibata-Arens, 2012). Since tests determine which students will receive de facto gifted education, it is primarily their scores on entrance exams that determine their giftedness (Matsumura, 2016).

Japan's policy on gifted education

The limited chances for students to receive gifted education throughout their nine years of compulsory education resulted to a great extent from the opposition to this form of education. This resistance reflects the egalitarian values that prevail in Japan. As a consequence of these values, Japan has no official policy on gifted education (Matsumura, 2016).

Japanese values emphasize the group over the individual. Such beliefs are inconsistent with the idea of offering special learning opportunities for certain students (Heuser, Wang, & Shahid, 2017; Sumida, 2013). The Japanese believe in contributing to the group because the group will respond by helping individuals. But if someone shuns the group, it will not help this person in return (Tucker & Ruzzi, 2011). As a result, the Japanese educational system has encouraged a high average achievement rate for all students instead of focusing on excellence for a few (Morgan, 2018; Cooper, 1999).

The idea of contributing to the group over the individual is in harmony with the idea of teaching high-ability students to help struggling pupils. As a consequence, instead of skipping grades or attending separate classes for accelerated instruction, Japanese educators usually have high-ability students help pupils who struggle throughout the compulsory years of schooling. They believe this approach helps all students because children who tutor others often learn as much as those who are tutored (Tucker & Ruzzi, 2011). In addition, this practice reduces the inequalities associated with tracking (Bugaj, 2009), a practice that occurs when high-ability students are separated from other children so that they are taught in different classrooms (Brookings Institution, 2013). Classes at the primary level in Japan, therefore, frequently consist of students with varied skill levels (OECD, 2011; Tucker & Ruzzi, 2011).

Although the Japanese generally believe that devoting special attention to a certain group is discriminatory (Bugal, 2009), in 2005, Japan implemented the third Science and Technology Basic Plan, which focuses on the special abilities of gifted students. This plan involves developing the abilities of gifted children through several programs including "Super Science High Schools," "Next Generation Scientists Programs," "Science Camps," and "Japan Science Tournaments."

In addition, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) formed a task force in 2011 to explore the possibilities of reforming the national education system to better support science education. This task force concluded that a national system of gifted education should be created (Basister & Kawai, 2018). In 2012, the Japan Society for Science Education published various articles about gifted programs. This was regarded as a significant step since gifted education was previously viewed as taboo (Sumida, 2013).

Equity in the school system in Japan

Although Japan's high-ability students have few opportunities to enroll in gifted programs in the primary grades, some aspects of the Japanese approach to education would likely benefit American gifted students from low-income families. These aspects relate to the practices that allow low-income students to have an adequate level of learning opportunities. One reason Japan repeatedly outperforms the United States on the PISA involves the opportunities available for its low-income students. In contrast to the United States, Japan provides better than average learning options for its students, regardless of their socioeconomic status (OCED, n.d.). Low-income gifted students in Japan are therefore likely to receive instruction that matches their ability. However, it frequently involves an inferior form of learning because the memorization needed for them to do well on exams promotes rote methods of study rather than analytical thinking and creativity (OECD, 2012).

Further, many high-ability students in Japan receive instruction appropriate for their skills in cram schools, which can help both gifted students and struggling students. However, cram schools frequently use an approach to instruction based on preparing students for tests, reducing their opportunities to develop critical thinking skills. When students prepare for their high school entrance exams, for example, cram schools usually teach to the test, offering sample tests similar to the ones pupils need to pass to be admitted to their preferred school (Morgan, 2018).

Concerns about gifted education in Japan

Japan has lacked gifted programs to serve talented students well, especially during their compulsory years of schooling. At this level, other than a handful of schools that offer accelerated education, few programs for gifted students exist. Although in Tokyo schools may offer afterschool and summer programs for high-ability students, the demand for these programs exceeds the supply. Since wealthy parents can afford private schools that may offer accelerated instruction, low-income parents generally have fewer opportunities to enroll their children in gifted programs (Finn & Wright, 2015).

Although Japan may have fewer educational inequalities than those in America, low-income students still face them. The idea of admitting students to selective high schools through exam scores may seem fair. However, pupils from wealthy families have an advantage because their families can afford the cram schools that offer tutoring to help pupils achieve the scores needed for admission.

This nation also implements a system of education that promotes memorization, especially during the high school years. Such an approach reduces the opportunities for creative and gifted students to receive the kind of teaching that matches their talents. Although Japan has attempted to improve the education of its high-ability students by creating various programs, there is doubt as to whether enough students are attending these programs. The Super Science High Schools, for example, impact only a small fraction of all students (Ibata-Arens, 2012).

Methods for identifying gifted students in Singapore

Gifted students in Singapore are regarded as those with exceptional intellectual and leadership ability. Pupils with strong psychomotor ability or talent in art and music are considered

gifted as well (Ministry of Education, 2015). Unlike Finland and Japan, Singapore recognizes that gifted children's needs might not be met in the primary mainstream classroom. Singaporean educators believe that if their needs are not met, learners could become indifferent or disruptive in class. As a consequence, the country implements a gifted education program (GEP) designed to develop intellectual rigor, values, and creativity (Ministry of Education, 2015).

Tests are used to identify gifted students. However, the Ministry of Education (2018) recommends against preparing children for these tests and warns that this practice could inflate test results. When parents neglect this advice, it leads to the misidentification of gifted pupils. Students not ready for the demands of the GEP, which they can enroll in starting at grade 4, may struggle rather than benefit, possibly even losing confidence and self-esteem.

The tests that determine if students are eligible for the GEP are offered during the third grade. After taking the first of these tests, those scoring in the top 8% take a second test about two months later. About 550 of these students are offered the chance to enroll in the gifted program, and about 450 pursue this opportunity. This number constitutes about 1% of the age cohort (Finn & Wright, 2015).

Singapore's policy on gifted education

Singapore has stronger policies on gifted education than those of Finland and Japan, offering more learning opportunities for high-ability students. In addition, many graduate students conduct research on gifted education and receive doctoral degrees that cover gifted education. Members of the Ministry of Education and academics do research on gifted education as well, although it is not shared with the public (Neihart & Tan, 2016).

Gifted children in Singapore can pursue a range of types of projects that constitute the Individualized Study Options (ISOs). Each option focuses on different skills, including information technology skills, research skills, problem solving skills, and inventive thinking skills. All pupils in grade 4 are taught to acquire the skills needed for the ISOs in grade 5. When the ISOs are implemented, a teacher mentors a small number of students, helping them to complete their projects. And parents can participate to provide support and encouragement. Although students do not receive grades, they can share their projects at their schools. If they produce stellar work, it is displayed at an annual exhibition (Ministry of Education, 2017a).

Nine schools offer essentially the same GEP at the primary level. Teachers and other personnel meet to make sure that all the schools use similar standards. Although differences exist among schools, all students have the chance to interact with their peers as they participate in activities (Ministry of Education, 2017b). In addition to the students in the GEP, other pupils receive advanced education, which consists of supplementation composed of content determined by individual schools. Since each school typically has a small number of high-ability students, schools often collaborate with one another to offer specialized classes (Finn & Wright, 2015).

At the secondary level, individual schools provide a curriculum designed for high-ability students. These pupils receive instruction that focuses more on learning and less on test preparation. The Integrated Program (IP) schools, which are designed for the top 6 to 10% of Singapore's students, select some high-ability students not formerly identified as GEP pupils as well as those previously enrolled in this program. Students at these schools can take the university qualifying exams without taking the O-level exams. Most students need to do well on O-level exams at the end of grade 10 to attend junior colleges and pre-university programs (Finn & Wright, 2015; Neihart & Tan, 2016).

Equity in the School System in Singapore

One reason Singapore has a strong school system involves its commendable methods of preparing, retaining, hiring, assessing, and mentoring its teachers (Sclafani, 2015). More importantly, well-regarded teachers are assigned to teach in struggling areas to minimize inequalities in education.

As a result of such practices, low-income gifted students in Japan experience fewer inequalities than those their counterparts in the United States endure. The Ministry of Education also funds all schools on an equitable basis, providing each school extra funds to spend on low-income students. These funds enable schools to offer enrichment activities and to buy resources for these students (**National**

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Although other countries claim they have a commitment to nurture and recognize the potential of their students, this outcome may not occur unless their parents make it happen. Singapore aims to avoid this trend. For many years, Singapore has improved the programs for its high-ability pupils. Although tracking and ability grouping can cause inequalities, Singapore implements these methods while maintaining a strong commitment to equal educational opportunity. For example, one strategy used for equitably placing students in the GEP program is a universal screening process (Finn & Wright, 2015). Universal screening promotes equity because all students are tested to determine if they are eligible to be placed in a gifted program (Plucker & Peters, 2018).

In contrast, most schools in the United States select students through parent and teacher referrals, a practice that can lead to bias if teachers fail to recognize the talents of gifted low-income student (Grissom & Redding, 2016; Elhoweris, 2008). A recent study, for example, showed that even when American low-income students performed well in reading and math, they got placed in gifted education less often (Hamilton et al., 2018).

Concerns about gifted education in Singapore

Although high-ability students in Singapore are generally served well, like Japan and Finland, this nation can improve its programs for high-ability students in a few ways. One area of concern is the low number of primary students (less than 1.5%) who enroll in the GEP. Further, while these students receive the methods previously discussed, much less is known about the opportunities for gifted students not placed in the GEP (Neihart & Tan, 2016).

Another concern relates to the emphasis on standardized tests. Although students in the GEP receive instruction that focuses on problem solving and critical thinking, gifted students not placed in this program are more likely to receive instruction that promotes high exam scores. This type of teaching hinders the development of critical thinking skills. In addition, gifted students are identified through tests based on their intellectual potential (Ministry of Education, 2018), but such an approach does not serve students gifted in nonacademic areas well.

Additionally, the meritocratic exam system in Singapore rewards students who do well on exams with more educational and career opportunities. However, those with low scores do not receive these benefits. Because high scores are crucial for educational and career success in Asian nations, critics of Singapore's school system say that teachers are more inclined to teach to examinations rather than experiment with innovative approaches to teaching (Morgan, 2018).

Conclusion

Many educational practices for low-income gifted children in Finland, Japan, and Singapore differ from those of the United States. One reason for these disparities involves different cultural attitudes. Another reason involves the different type of educational systems these nations have. The United States has a decentralized school system, but Finland, Japan, and Singapore each has a ministry of education that controls more of the educational policies that are implemented throughout these countries. These nations are also less culturally diverse than the United States.

Policymakers therefore need to realize that differences in cultural attitudes may lead a practice that works overseas to backfire in the United States. They also need to be aware that the differences in the structures of the educational systems of Japan, Singapore, and Finland can make it difficult to successfully implement a practice that works well in one of these nations in the United States.

Despite these differences, some of these nations' educational practices would benefit low-income gifted students in the United States. For example, schools in Singapore use a universal screening process to determine which students are placed in gifted education. In contrast, most schools in the United States rely on parent and teacher referrals to select these pupils. American schools that have experimented with using universal screening have experienced impressive results. One large diverse district in the United States found that implementing this approach led higher percentages of low-income students to be placed in gifted programs (Card & Giuliano, 2015).

Another approach these nations implement involves providing better-prepared teachers and more resources for their low-income students than the United States offers. Supplying disadvantaged gifted students with the same educational resources as those privileged pupils receive would improve the education of these students in the United States.

While Finland, Japan, and Singapore implement some commendable practices for their gifted students, there are concerns about the ways high-ability students are treated in these countries. Teacher-training programs in Finland devote very little time for preparing candidates to teach gifted pupils, and high-ability students in Japan have few chances to attend a gifted education program during their nine years of compulsory education. In Singapore, a very low percentage of primary students (less than 1.5%) are placed in the GEP program.

Reflecting on how top-performing nations in international testing treat their low-income gifted students can help American policymakers develop ideas on providing a better approach to teaching gifted students in the United States. Such an approach can lead to practices that would enhance the American public school system.

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About the Authors

Hani Morgan is Professor of Education in the School of Education at the University of Southern Mississippi. He completed two postgraduate degrees from Columbia University. His first master's degree from Columbia's Teachers College was in Curriculum and Teaching, and his second master's degree was in International Education. Shortly after finishing his studies at Columbia, Morgan worked for ETS as an assistant examiner for the Principles of Learning and Teaching Praxis Test. He then started his doctoral studies at Rutgers University and specialized in Foundations of Education. During his years at Rutgers, he taught two courses for the English Department at the College of New Jersey. After completing a doctoral degree from Rutgers, Morgan returned to ETS to work as a reader for the School Leaders Licensure Assessment Exam. Morgan is the author of *The World's Highest-Scoring Students: How Their Nations Led Them to Excellence* and the co-editor of *The World Leaders in Education: Lessons from the Successes and Drawbacks of Their Methods*. He also authored and co-authored over 50 academic articles in journals such as *Childhood Education*, *The Reading Teacher*, and *American Educational History Journal.*

Thomas V. O'Brien is Professor of Educational Studies in the School of Education and a faculty affiliate at the Center for Black Studies at the University of Southern Mississippi. O'Brien studies the history of race, class, and schooling in the U.S. He is author of the book *The Politics of Race and Schooling: Public Education in Georgia, 1900-1961* and has published in journals such as *American Education Research Journal, Teachers College Record, Educational Forum, History of Education Quarterly, and American Educational History Journal*. O'Brien also studies topics related to pedagogy, multiculturalism, and teacher education. He is the co-editor (with Mordechai Gordon) of *Bridging Theory and Practice in Teacher Education*. In 2016 O'Brien expanded his conception of "the South" when he won a Fulbright visiting scholars award to study and teach in the Republic of Chile. O'Brien earned his B.A. (in Human Biology) at Brown University and Ph.D. (in Educational Studies) at Emory University. In the 1980s he taught middle-school and high-school science and math in Massachusetts. Prior to Southern Miss, he held tenured positions at Millersville University and The Ohio State University.

Addresses

The Use of High-Impact Practices for Teaching Social Justice Content in Social Work Curriculum

Sharon Alston; Kirsten Ericksen
Norfolk State University, USA

Abstract

Social justice is an essential concept of the human service profession and a core value of the social work profession. In social work education, students acquire this knowledge through implicit and explicit curriculum. For example, students learn the concept and importance of social justice in the delivery of service in the core curriculum (i.e., human behavior, policy, research, and practice courses). This approach to learning new content is traditional in that students acquire this knowledge through readings, class discussions, and final term papers. An intentional and interactive instructional design such as high-impact practices (HIPs) may be more advantageous in teaching social justice content. Researchers used a mixed-method research design with a self-administered survey to collect data from a convenience sample of 27 social work students on their perceptions of HIPs and its utility for advancing knowledge (awareness, understanding, and appreciation) of social justice. HIPs are teaching and learning strategies that have been proven to be beneficial to increasing students' learning and retention of knowledge (Kuh & O'Donnell, 2013). This preliminary research strongly suggests that HIPs have an impact on participants' learning and, specifically, their understanding of social justice content for both micro issues to macro-level of concerns. Overall, students reported 1) HIPs had a significant influence on the acquisition of social justice content, and 2) having an overall positive experience with HIPs. It is recommended that faculty, regardless of discipline, explore the use of HIPs in facilitating discipline-specific knowledge.

Keywords: Social justice; curriculum; instructional design; high-impact practice (HIP).

Introduction

Social justice is an essential concept of the human service profession and a core value of the social work profession. The engagement in social justice activities by human service professionals (educators, clinicians, lawyers) helps to ensure the equitable distribution of resources and services to those in need to include people in poverty, with disabilities, and who are marginalized and disenfranchised. In social work education, students acquire this knowledge through implicit and explicit curriculum. For example, students learn the concept and importance of social justice in the delivery of service in the core curriculum (i.e., human behavior, policy, research, and practice courses). This approach to learning new content is traditional in that students acquire this knowledge through readings, class discussions, and final term papers. An intentional and interactive instructional design such as high-impact practices (HIPs) may be more advantageous in teaching social justice content.

The Association of American Colleges and Universities (AACU) lauds the positive outcomes of the use of HIPs as instructional design. HIPs are teaching and learning strategies that have been proven to be beneficial to increasing students' learning and retention of knowledge (Kuh & O'Donnell, 2013). HIPs such as Experiential Learning, Project-Based Learning, and Service Learning are instructional strategies that engage students in "sustained, collaborative real-world investigations" (Coffey & Lavery, 2015). While HIPs approaches have been used in higher education, little is known about the use of HIPs in social work education. Less is known about the use of these approaches in the translation of knowledge of social action and social justice. This paper assessed the effectiveness of HIPs as an innovative instructional method for teaching social justice content in a Social Work program. In this article, the researchers are exploring if social justice content can be more effectively taught with an intentional and interactive instructional design such as HIPs.

Literature review

The literature on the use of HIPs is promising. For example, Kuh (2013) found a pronounced benefit from participation in HIPs for underserved student populations to include African American students. Specifically, in their research related to underserved student populations, Finley and McNair (2013) found students reported perceived gains to deeper learning following participation in all/any high-impact practice in education. Additionally, Arroyo et al. (2016) concluded HIPs such as learning communities can incorporate adaptations to benefit underserved populations (i.e., Afrocentric perspectives) and provide best practices and learning environments.

The AACU also highlights other benefits of participating in HIPs. For example, students who participate in service learning, learning communities, faculty-student research, and study abroad perceived their learning more positively than students who did not participate in the same practice (Finley & McNair, 2013). Benefits of cumulative engagement in HIPs were also identified. Students who participated in five to six HIPs activities reported more gains in personal and social development, practical competence, and general education than students who have less engagement or no engagement of HIPs (Finley & McNair, 2013).

Of the many approaches of HIPs, this paper is specific to Experiential Learning, Project-Based Learning, and Service Learning. Experiential learning has been found to be valuable for student gains in knowledge and skills (Clements & Minnick, 2012; Cramer et al., 2012; Humphrey, 2014; Kolb, 1984; Lichtenwalter & Baker, 2010; Rosenwald et al., 2013). Experiential learning is a process whereby knowledge is created through the transformation of experience (Kolb, 1984). Experiential learning incorporates active learning through the use of engaging activities to provide application of course content and enhanced comprehension. Students learn through observation and interaction, frequently participating in 'hands-on' experiences (Kolb, 1984).

Research has demonstrated integrating experiential activities (including watching a movie from another culture, speaking with a couple from this same culture, and participating in group discussions) positively impacted the participants' intercultural sensitivity (Jain, 2013). Research related to team-based experiential learning theory has found positive student satisfaction and perceptions of learning gains (Venema et al., 2015).

Researchers have found experiential learning prominent in specific social work curriculum content, including macro-level change (Jewell & Owens, 2017), group work (Clements & Minnick, 2012; Warkentin, 2017), and research (Venema et al., 2015). Students participating in experiential groups reported a better understanding due to their own experience in the group process (Clements & Minnick, 2012). Warkentin (2015) found students' use of experiential methods assisted with group knowledge and skill development. Social work students engaged in community training and collaborations to improve their understanding of power and macro practice level skills (Jewell & Owens, 2017).

Project-Based Learning (PBL) is an active-learning pedagogy in which students gain knowledge and skills by investigating and responding to a complex question, problem, or challenge by creating and implementing a final product (*What Is PBL?*, n.d.). Project-Based Learning has been found to develop higher-order thinking and critical thinking skills in students (Bradley-Levine & Mosier, 2014). Project-Based Learning leads to a change in teaching pedagogy in which students take ownership of their learning, and educators serve in the role of facilitators (Dole et al., 2015).

The impact of project-based learning (PBL) on student learning is evident. Kwon et al. (2014), in his paper on PBL with 99 students in engineering, concluded that students reported significant gains related to their learning experience. He reports 76% of students agreed that the PBL teaching and learning activities, such as projects, discussions, and presentations, help them to achieve the learning outcomes for the course (Kwon et al., 2014). Gülbahar and Tinmaz (2006) report that students in an undergraduate education course were extremely satisfied with PBL. Students in the

course reported advantages of PBL as "eliminating direct instruction, learning by doing, active participation and that they were offered opportunities to participate in the course" (2006, pp. 317–318).

Further research using PBL includes the work of Heinricher et al. (2013), who assessed the long-term professional and personal impacts of PBL on careers and lives of 2,532 alumni. They reported the greatest impact in the areas of personal abilities, interpersonal and communication skills, professional advancement, world views, and personal impacts. Specific impacts were taking responsibility for one's own learning, solving problems, succeeding in a career, awareness of how one's decisions impact others (Heinricher et al., 2013).

Other researchers have found service learning to be beneficial regarding the service learning pedagogical approach in social work curriculums (Petracchi et al., 2016; Schelbe et al., 2014; Williams et al., 2002). Specifically, research-based service learning pedagogy has demonstrated growth in students' social responsibility related to policy advocacy and civic awareness (Lim et al., 2017) or promoting altruism (Forte, 1997). Additionally, some have offered suggestions to improve the outcomes and implementation of service-learning programs (Lemieux & Allen, 2007), recognizing that most baccalaureate social work education programs offer at least one course with a service learning component (Petracchi et al., 2016). Williams et al. (Williams et al., 2002) found inclusion of service learning in a master's level course to increase students' perceived self-efficacy related to mezzo and macro-level skills. Similarly, research finds service learning to be a positive experience for students while developing a greater appreciation for the course content (Postlethwait, 2012). Schelbe et al. (2014) assert that service learning in the Bachelor of Social Work (BSW) curriculum helps students build a sense of community, apply theoretical concepts, increase self-awareness, and give exposure to the social work profession.

Service learning incorporates a field-based experience as a portion of the course requirement. The intent, in part, is to have students apply what they are learning in the classroom to the community in order to achieve real-world applications (Kuh, 2008). According to Kuh and O'Donnell (2013), service learning provided deep learning and gains in three areas; general, personal, and practical. This suggests that through the participation service learning, students are prepared to become good community citizens.

As the literature suggests, HIPs such as experiential learning, project-based learning, and service learning are innovative instructional methods. In this research, the term HIPs refers to experiential learning, project-based learning, and service learning.

Methodology

Research design

The purpose of this research was to explore the use of HIPs as an innovative instructional method for teaching social justice content in the social work program. We conceptualize social justice content as educational material relating to engaging in diversity and difference in practice, advancing human rights and social, economic, and environmental justice, and engaging in policy practice. Social justice knowledge is conceptualized as having awareness, understanding, and appreciation of social justice content.

The study employed a mixed-method concurrent research design with a qualitative focus. The qualitative approach used Hermeneutic phenomenology (Creswell & Poth, 2018). This approach acknowledges the uniqueness of the lived experiences of participants and the influence on the phenomenon. In this study, the phenomenon is social justice related to social work.

The following research question is explored:

1. **How effective are HIPs at increasing students' knowledge in social justice?**

Study setting and procedures

The study takes place in a four-year university in the southeast region of the country. The School has a BSW, MSW, and Ph.D. program comprising over 600 students. The School offers content in both Micro and Marco concentrations; however, its program is heavily clinical with a curriculum that focuses primarily on direct practice knowledge and skills with individuals. The school is well poised to utilize HIPs to integrate social justice content into the social work curriculum, and it is timely. The area in which the school is located is undergoing structural changes through urban revitalization. While the redevelopment will bring structural improvements in the form of new parks and modern homes, it will also displace many current residents. Providing students with specific knowledge and skills in the area of social justice is essential as we are preparing them to engage in the current social and political climate that will inevitably affect the profession of social work and the places where they will become employed.

In the spring of 2018, the researchers implemented and evaluated HIPs in a general education course, a research course, and a practice course. In addition to the standard curriculum, students in each course planned or engaged in a project around a social justice issue.

Experiential learning occurred in the Trauma-Informed Practice with Children and Families practice course. A focus of this course was health disparities and marginalized populations. Seven students participated in the elective course.

Learning outcomes for this course include the ability to: 1) Recognize ethical dilemmas that social workers may experience in a setting that assesses and/or treats children or families who have experienced trauma; 2) Identify assessment and diagnosis of and treatment methods for individuals with physical trauma-related problems to provide effective social work services (while maintaining good professional self-care); 3) Identify how complex life challenges and protective factors impact individuals and families that are affected by traumas.

Throughout the course, students participated in experiential activities including the pouring of red sand for human trafficking, obtaining certification in Stewards of Children Child Sexual Abuse Prevention training, self-reflective wellness activities aimed to prevent secondary trauma (meditation, journaling, mindfulness), and attending a sexual abuse international expert presentation. Specifically, guided mindfulness activities (breathing, eating, and coloring) were completed in class, journaling techniques were discussed in detail, and resources for meditation were provided to address any potential secondary trauma.

The research course utilized PBL. The student learning objectives were: 1) Use practice experience to inform research and use research findings to improve practice, policy, and social service delivery; 2) Conduct a needs assessment and program evaluation, 3) Write concise and accurate research reports. The associated tasks were to identify a problem and its cause, identify a solution, evaluate the solution's effects, and write a report of the findings. The students identified the "problem" as a lack of knowledge and use of research in social justice by students in the social work program, and the solution was to expose students to professionals engaged in research at the micro, mezzo, and macro levels.

The research students collaborated with staff from the Court Services and Offender Supervision Agency of Washington, DC, Hampton City Schools of VA, Human Services Department of Defense, United States Navy, and Skills Builders Independent Living Agency for Youth to sponsor a research symposium. The focus of the symposium was to educate all social work students on the importance of research across micro and macro levels of practice—specifically, how research is used to address racial and health disparities in services and outcomes for marginalized groups.

The symposium was held during social work month, with over 80 students and faculty in attendance. Additionally, students developed a survey to assess the impact of the symposium on student learning and analyzed the data using SPSS.

Service learning was the high-impact practice used in the introduction to university life course. In this freshman course, four undergraduate social work students completed the survey. The following learning outcomes were among the course objectives: 1) Use written communication skills to argue and critically assess ideas and viewpoints; 2) Distinguish and Assess concepts and perspectives of cultural diversity; 3) Apply principles of responsible citizenship within and beyond the campus community.

Course assignments were developed to facilitate learning outcomes using the high-impact practice of service learning. Each small group of students identified a social justice community need, developed, and implemented a brief project to address the need. Issues students examined included the school to prison pipeline, underserved youth with disabilities, and disparities in health and mental health among older adults. The projects were a youth mentoring program, a recreational program for youth with disabilities, and an intergenerational matching experience.

Participants and recruitment

Recruitment was limited to students who were enrolled in the courses where the researchers were teachers of record in the three noted courses. However, students were given the option to participate in the study without an impact on their final grade.

The participants were 27 social work students who were currently enrolled in one of three courses. Of the 27 students, 16 were graduate students. The total sample consisted of 16 students enrolled in the research course, seven students enrolled in the practice course, and four students enrolled in the Introduction to University Life course. Ninety-six percent were female, and 4% were male. Seventy-five percent were African American, 11% were Caucasian, 3% were Latinx, and 11% identified as other. Students ranged in age from 20 years to 46 years with a mean age of 24 and a standard deviation of 6.2.

Data collection and measurement

A self-administered survey was distributed to students on the last day of class. The researchers ensured confidentiality by providing each student with an envelope in which he or she was to return the survey. The survey is a suggested measurement of the social work competencies offered by Petracchi & Zastrow (2010) and comprises nine subscales, each measuring one of the core competencies outlined in the Council on Social Work Education's (CSWE) Educational Policy and Academic Standards (EPAS). Each subscale comprised two to five items on a 5-point Likert scale and assessed how HIPs help students to acquire knowledge of social justice content. For this paper, we utilized three subscales; Engage in Diversity and Difference in Practice; Advance Human Rights and Social, Economic, and Environmental Justice; and Advance, Engage in Policy Practice as the measure of knowledge of social justice content. We operationalize knowledge of social justice content using the combined score on the three subscales of knowledge of social justice content.

The qualitative section of the questionnaire required students to share their perceptions of how HIPs contributed to their learning and what skills they had acquired as it related to social justice.

1. Please provide your feelings, thoughts, or perceptions about high-impact practices such as Experiential Learning, Project-Based Learning, and Service Learning as an instructional pedagogy (instructional method);
2. Briefly describe specific high-impact practices such as Experiential Learning, Project-Based Learning, and Service Learning activities that enable you to acquire new knowledge about your course;
3. Please list some specific skills you have acquired because of participating in high-impact practices such as Experiential Learning, Project-Based Learning, and Service Learning;
4. Please provide recommendations for improvement of the use of high-impact practices such as Experiential Learning, Project-Based Learning, and Service Learning; and,
5. Please list any activity that YOU believe has increased your learning in this course.

Additionally, respondents rated whether the HIPs were either 1, indicating extremely ineffective, or 5, indicating extremely effective. Higher scores indicate a higher degree of students' perception of effectiveness in helping to acquire knowledge regarding knowledge and application of social justice content and skills. In addition, we collected demographic and categorical data: age, gender, ethnicity, and course enrolled.

To the researcher's knowledge, the reliability and validity of the competencies as a full scale has not been established. Item analysis was conducted to assess the reliability of the subscales Engage in Diversity, Advance Human Rights and Social, Economic, and Environmental Justice; and Advance Engage in Policy Practice. Reliability for each subscale ranged from .70 to .95, which is an acceptable measure of reliability (Abu-Bader, 2011). Table 1 lists all scales with the number of items and Cronbach's alpha statistic for each.

Table 1: Reliability coefficient of instruments.

Scale	# of items	Range of Possible Scores	Reliability
Differences in diversity Advance Human Rights and Social, Economic, and Environmental Justice	3 2	3-15 2-10	.70 .72
Advance Engage in Policy Practice.	3	3-15	.95

Strengths and limitations

There are significant strengths in that the results help to validate highly effective instructional design that can be utilized in social work but has utility for other disciplines and content areas. While not a focus of this study, we identified other advantages of HIPs that reach beyond the classroom, such as critical thinking, self-awareness, and collaborative work. However, there were some limitations, as well. The measure of social justice content used in this study is newly developed and only tested knowledge acquired through the use of HIPs. We did not assess current/prior knowledge of social justice content. However, because these were first- and second-year students in undergraduate education and first semester students in graduate education, the researchers assumed that students would have limited if any knowledge of social justice and it would not have a significant influence on the outcome of the study. The small sample size was also a limitation, and two students did not complete the final survey. No information is available to assess if there were differences between the two students who did not complete the survey and those students who did. We assume the two missing students did not have a significant impact on the outcome of the findings. Generalizability is also a limitation due to the non-probability sampling technique applied and the small sample size.

Analysis

Qualitative

Systematic content analysis was used to guide the review of the students' self-reported experiences after their participation in HIPs. A deductive approach was used to analyze the survey data using the social justice defined categories. As discussed previously, social justice knowledge was operationally defined as the combined score on three social work subscales -Engage Diversity and Difference in Practice, Advance Human Rights and Social, Economic, and Environmental Justice and Engage in Policy Practice. These subscales were used as preset categories and guided the researcher's analysis in reading the survey text for meaning and common experiences of the HIPs participants. NVivo 11 software was used to assist with the qualitative data analysis. The researchers developed an initial codebook (nodes in NVivo), which was reviewed by both researchers until agreement occurred. During the contextual analysis, similarities and differences between the categories were examined for themes and common emerging patterns. Significant statements were reviewed and provided connections and meaning of the findings for interpretation of the data.

Quantitative

Using SPSS, we conducted a descriptive analysis of the three subscales of social justice content to answer the research question: "How effective are HIPs at increasing students' knowledge in social justice?" We then report the percentage of students who felt HIPs were effective at helping them to demonstrate knowledge across the three areas of social justice (Differences in Diversity, Advance Human Rights and Social, Economic, and Environmental Justice; and Advance Engage in Policy Practice). Mean scores are also reported for the three areas of social justice knowledge under investigation (Differences in Diversity, Advance Human Rights and Social, Economic, and Environmental Justice; and Advance Engage in Policy Practice). The results of the descriptive analysis were used to confirm and validate the qualitative data of the survey (Creswell, 2014).

Results

The purpose of this research was to explore the use of HIPs as an innovative instructional method for teaching social justice content in the social work program. As a reminder, we conceptualize social justice content as educational material relating to engaging in diversity and difference in practice, advancing human rights and social, economic, and environmental justice, and engaging in policy practice.

Social justice knowledge is conceptualized as having awareness, understanding, and/or appreciation of social justice content. Overall, the results for the analysis of the data suggests that participants reported 1) HIPs had a significant influence on the acquisition of social justice content, and 2) they had an overall positive experience with HIPs.

Participants reported aspects for each HIPs ranging from having awareness about social justice "offering support to people who felt left out or not worthy" to actively working with individuals to advocate for micro-level needs "being able to help and assist" and macro issues "understand how policy and funding is [*sic*] implemented as well as the services and goal of the program." Participants in the HIPs experienced gains in their social justice knowledge. Both the qualitative and quantitative data support these findings related to HIPs and social justice content.

The qualitative data were examined for common emerging experiences among students regarding their perceptions of the outcomes from HIPs. Through systematic analysis, specific emerging common experiences related to HIPs and social justice social work education was evident. Student participants from all HIPs reported an increase in knowledge of social justice content. Specifically, *advance human rights and social, economic, and environmental justice (competency # 3)* were demonstrated in participants' responses "the group work on the demolishment of the public housing communities allowed for these items to be put into place."

The quantitative data support this finding as 90% of students reported that HIPs were either effective or highly effective at helping acquire knowledge in the areas of advance *human rights and social, economic, and environmental justice*.

Students reported advances in awareness in engaging *in diversity and difference in practice (competency # 2)* through statements such as "offering support to people who felt left out or not worthy," and "how to deal with people with less needs." This finding was also confirmed through the quantitative data. Ninety-three percent of students reported that HIPs were effective or highly effective at helping acquire knowledge in the areas of *engaging in diversity and difference in practice.* Other students shared the social justice emphasis of *advancing and engaging in policy practice (competency # 5)* through their experience "in research methods, I learned how to research is used to advocate for my clients in program evaluation and provide better outcomes to help the client." This finding was also confirmed through the quantitative data.

Eighty-seven percent of students reported that HIPs were effective or highly effective at helping acquire knowledge in the areas of *advancing and engaging in policy practice.* The social justice content (based on noted competencies) emphasis related to HIPs is represented in Table 3.

Table 3: Social justice content emphasis for High-Impact Practices (HIPs)

Social Justice Emphasis	HIPs Participant Qualitative Data Results	HIPs Participant Quantitative Data Results
Advance Human Rights and Social, Economic, and Environmental Justice - competency # 3, *(Engage in practices that advance social, economic, and environmental justice).*	"the group work on the demolishment of the Norfolk housing communities allowed for these items to be put in place" "understand how policy and funding is implemented as well as the services and goal of the program" "being able to help and assist"	90% of participants reported HIPs were effective in advancing human rights and social, economic, and environmental justice
Engage Diversity and Difference in Practice - competency # 2, *(Apply self-awareness and self-regulation to manage the influence of personal biases and values in working with diverse clients and constituencies)*	"Being able to work with groups of people" "how to deal with people with less needs" "Being able to work [in] a group with others" "offering support to people who felt left out or not worthy"	93% of participants reported HIPs were effective in engaging in diversity and difference in practice
Advance and Engage in Policy Practice- competency # 5 *(Assess how social welfare and economic policies impact the delivery of and access to social services).*	"in research methods, I learned how to research is used to advocate for my clients in program evaluation and provide better outcomes to help the client." "in creating the logic models, we had to look as various programs"	87% of participants reported HIPs were effective in advancing and engaging in policy practice

Descriptive statistics

Descriptive statistics were conducted to answer the research question "How effective are HIPs at increasing students' knowledge in social justice identified in related competencies including; engage in diversity and difference in practice (competency # 2), Advance Human Rights and Social, Economic, and Environmental Justice (competency #3) ; and Engage in Policy Practice (competency # 5)?"

For *engage in diversity and difference in practice,* the mean was 14 with a standard deviation of 1.4; the mean for *advance human rights and social, economic, and environmental justice* the mean was 9 with a standard deviation of 1.47. The mean and standard deviation for items 2.1, 2.2, 2.3 is 4.8 SD .42, 4.7 SD .54, 4.6 SD .54 respectively. 3.1, 3.2 were 4.48 SD .97, 4.62 SD.68 respectively. For the #5, engage in policy practice, the mean was 13 with a standard deviation of 2.36. The mean and standard deviation for items 5.1, 5.2, and 5.3 were 4.37 SD 79, 4.48 SD 89, 4.48 SD 84, respectively. The results from this analysis are reported for the total scale as well as by each item on each scale. (See Table 4).

Additional significant findings emerged from the data. Students who participated in HIPs reported very positive reviews about the approach. One student stated, "I enjoyed this way of learning over working alone. The HIPs allowed everyone to collaborate and solve problems." Another student reported, "I liked the way the class was taught. I learned a lot about research and how it is used in the social work field, and we got to do a lot of hands-on activities…"

Other students reported the teaching and learning activities provided through HIPs helped them to acquire new knowledge. Several students listed the logic model activity, inputting data, research proposal, and research symposium as helpful activities to acquire knowledge. Students noted through statements such as "offering support to people who felt left out or not worthy," and "how to deal with people with less needs." This finding was also confirmed through the quantitative data. Ninety-three percent of students reported that HIPs were effective or highly effective at helping acquire knowledge in the areas of *engaging in diversity and difference in practice.* Students reported acquiring skills such as public speaking, networking, critical thinking, decision making, and reasoning.

Table 4: The mean and standard deviation for social justice.

Variables of Social Justice	*Mean*	*SD*	Mode	Minimum Maximum
Differences in Diversity* (competency # 2)	14	1.4	15	10–15
• Apply and communicate understanding of the importance of diversity and difference in shaping life experiences in practice at the micro, mezzo, and macro levels.	4.8	.42	5	4–5
• Present themselves as learners and engage clients and constituencies as experts of their own experiences.	4.7	.54	5	3–5
• Apply self-awareness and self-regulation to manage the influence of personal biases and values in working with diverse clients and constituencies.	4.6	.54	5	3–5
Advance Human Rights and Social, Economic, and Environmental Justice* (competency # 3)	9.0	1.4	10	2–10
• Apply their understanding of social, economic, and environmental justice to advocate for human rights at the individual and system levels.	4.48	.97	5	1–5
• Engage in practices that advance social, economic, and environmental justice.	4.62	.68	5	2–5
Advance and Engage in Policy Practice (competency # 5)	13.00	2.36	15	3–15
• Identify social policy at the local, state, and federal level that impacts well-being, service delivery, and access to social services.	4.37	.79	5	3–5
• Assess how social welfare and economic policies impact the delivery of and access to social services.	4.48	.89	5	2–5
• Apply critical thinking to analyze, formulate, and advocate for policies that advance human rights and social, economic, and environmental justice.	4.48	.84	5	2–5

This research further supported the benefits of "hands-on activities" reported by HIPs participants. Findings from Gülbahar and Tinmaz (2006) suggest students also reported benefits from the "hands-on" activities utilized in the HIPs. Participants' assertion that they acquired additional skills was similar to Kwon et al.'s (2014) findings citing 76% of students agreed that the PBL teaching and learning activities such as projects, discussions, and presentations help them to achieve the learning outcomes for the course (Kwon et al., 2014). The HIPs service learning was found to "help students acquire new knowledge outside the classroom" and demonstrates similar findings to Postlethwait (2012) developing appreciation for the course content.

Discussion and recommendations

This study demonstrates preliminary evidence for the use of HIPs in social work education. The impact of social justice competence gains was apparent across the undergraduate and graduate programs. This preliminary research strongly suggests that HIPs have an impact on participants learning and, specifically, their understanding of social justice content for both micro issues to macro-level of concerns. Incorporating HIPs within social work courses offers many benefits to students. Through the opportunities provided by HIPs, students are able to observe the impact of their efforts in "real-time."

In addition, through the use of HIPs, students have a more intimate experience with real-life problems that they are charged with resolving, especially with respect to social justice. This process helps to build students' confidence in their ability to influence change. HIPs create engaging learning experiences, improved students' understanding of course content, and increased students' ability to identify and apply strategies to promote and advocate for specific issues related to the fair and equitable distribution of resources and services.

Increased awareness is another benefit of HIPs. In the classroom, students are informed about the importance of self-awareness and self-regulation and how these values influence the ways by which and under which conditions they will engage in social justice work and activities. Through

HIPs, students are actively engaging with diverse populations and are forced to process and regulate their feelings almost immediately. As a result, students are able to see how their personal biases and values can influence how they engage with diverse clients and constituencies. There are some drawbacks to this approach, such as some students' initial inability to self-regulate, but with prior preparation and assessment of students' skills and abilities, the experience can be invaluable training for emerging social work professionals. Specifically, students can participate in journaling to enhance self-reflection and learning about the experience.

Additional benefits of HIPs include opportunities for students to engage in inter-professional collaborations on social justice issues with lawyers, health care professionals, educators, and economists. For example, projects could center on the impact gentrification has on families such as affordable housing, access to healthcare, childcare, concentrated poverty, and develop interdisciplinary approaches to advocate for resources such as funding, new policies, and access to affordable housing.

The HIPs within academic courses alone will be insufficient. The assignments and activities must be rigorous and interactive, so students are able to demonstrate knowledge, skills, and application of the specific content. Some suggestions are to develop assignments that are student-driven. Students are more likely to be willing to engage in activities in which they have a particular interest. For example, for future assignments, students can research social justice issues of importance to them, develop plans, and facilitate programs to address the need. In addition, faculty should share resources about local justice issues, including educational materials, weblinks, and agencies, to determine the best approaches to local advocacy.

This study produced preliminary data on the utility of HIPs as an effective instructional strategy. While the results are promising, we recommend further research with a larger sample size. In addition, including comparison groups can add to the internal validity of the research and the credibility of the use of HIPs.

We also found students showed evidence of critical thinking skills, self-awareness, and collaborative work; however, we did not assess for changes in these variables. Further research could include HIPs as an approach to course delivery rather than content-specific, thereby assessing how students develop skills across different domains of learning (cognitive, affect, psychomotor).

Finally, this study included graduate and undergraduate courses and assessed different HIPs approaches within the three courses. A comparative study to assess for differences across course level, age, gender, and course may provide additional evidence for the use of HIPs, for example, comparing gender differences in learning through HIPs.

Conclusion

This research suggests the influence of HIPs across content areas can help to develop knowledge of social justice in social work students. Both qualitative and quantitative data demonstrate gains in social justice competence, as reported by students participating in high-impact practices. Through these approaches, students collaborate with professionals (teachers, recreation specialists, and criminal justice staff) from other disciplines (education, psychology, criminal justice) to plan and organize around a social justice issue. HIPs encourage students to create or engage in projects that explore and develop meaningful approaches to address the identified social justice issue. If we expect students to remain competitive and competent in their respective disciplines, faculty must continue to explore effective instructional designs that facilitate learning and skills that create pathways to employment. If social work and other discipline-specific programs are to remain competitive among the ranks of colleges and universities, their faculty must be willing to incorporate innovative pedagogical approaches that provide opportunities for students to gain knowledge, skills, and competence to compete in the current social, political, and economic climate of our society. Faculty in social work programs are uniquely positioned to facilitate these ideals as a purpose of the social work profession is to promote the value of social justice. Therefore, social work faculty must be innovative in their instructional design and delivery of course content in a way that actively engages students in the classroom and in the communities in which they will become employed. High-impact practices provide a method to achieve this.

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About the Authors

Dr. Sharon T Alston is an Assistant Professor of Social Work in the Ethelyn R Strong School of Social Work at Norfolk VA with over 10 years of teaching experience. Her primary area of teaching is in research methods for social workers. Her teaching research in the scholarship of teaching and learning (SoTL). Dr. Alston uses High-impact practices to facilitate student learning, increase student engagement and increase retention among students of color. She is also interested in understanding how students evolve in their use of higher-level thinking from acquisition of knowledge to the evaluation and creation of new knowledge.

Dr. Kirsten S. Ericksen is an Associate Professor in the Ethelyn R. Strong School of Social Work at Norfolk State University (NSU). As a practicing professional for 10 years, Dr. Ericksen gained experiences in leadership and professional encounters in micro, mezzo, and macro levels including; higher education, early intervention (birth-3), school social work (K-12), service organizations, and non-profit agencies (Executive Director for BBBS). Her research interest applies to the scholarship of teaching and learning. Specifically, research related to using innovative engaging methods integrated into the classroom to enhance their learning and skill development (practical application) and help them become effective professionals and build resiliency with clients/communities

Addresses

Dr. Sharon Alston;
Norfolk State University; 700 Park Ave Norfolk VA, USA 22192
e-Mail:

Dr. Kirsten Ericksen;
Norfolk State University; 700 Park Ave Norfolk VA, USA 22192
e-Mail:

Collaborative Continuous Improvement Practices

Beverly Sande
Whitlowe R. Green College of Education, Prairie View A & M University, Texas, USA

Abstract

Research about organizational improvement has come from several disciplines—business management, organizational sociology, communications, and education. Across these fields, much of the research involves case studies of effective organizations (e.g., Collins, 2001; Johnson, 1996). Review of these case studies suggests several commonalities among organizations that have been effective at making systemic improvement through the collaborative continuous improvement practices that engage organizations and other stakeholders. Among these common practices are (a) cultivating a shared vision, (b) focusing on agreed upon set of goals, (c) using evidence-based theory to practice, (d) developing and maintaining alliances, (e) fostering the on-going use of data, and (f) deploying a strategy for scaling-up the work. Because of the supposed benefits of collaborative improvement, state education agencies and other funders encourage and incentivize these types of initiatives (Blanton & Pugach, 2007; Blanton, Pugach, & Boveda, 2014; Fixsen, et at., (2013)).

Keywords: Continuous improvement; collaborative practices; large-scale educational reforms.

Collaborative continuous improvement practices

The complexities of providing quality education for school age children can best be realized through collaboration between practitioners. This same ideology has infiltrated Education Preparation Programs (EPP) encouraging the emphasis on collaborative methodologies of program design, development, implementation, and evaluation. An added advantage to collaborative practices stems from statewide support for such endeavors. This context presents a huge challenge for many EPP trying to refocus their efforts for Preschool- Graduate (P-20) collaboration emphasizing core values held by both Institutions of Higher Education (IHE) and their Preschool to grade 12 (P-12) partners. Such collaborative efforts need to be sustained. The push for educators to collaborate at all levels of education preschool to undergraduate levels (P-20) has created effective communication pathways for many institutions at various geographic locations.

Collaborative Continuous Improvement Practices (CCIP) build on models similar to other large-scale improvement practices that prioritize implementation of educational reforms on a large scale.

In this paper, I describe frameworks for large-scale collaborative models, as well as the key elements of collaborative practices between IHEs and stakeholders from P-12 schools, state support teams, and various state departments. In this paper I also describes the conditions that motivate various institutions to develop effective partnership with stakeholders at their local schools. I delve into describing effective collaborative processes, including team-based approaches for implementing educational reforms. Finally, I highlight recommendations for future research in this area.

Collaborative initiatives

Collaborative initiatives are evident and considered effective in many states (DuFour & Marzano, 2011; McNulty & Besser, 2011; Darling-Hammond, 2010; Wahlstrom, et al., 2010; Wahlstrom, & Louis, 2008; Leithwood, & Jantzi, 2008; Schmoker, 2006; Davis, 2008; Gallimore, et al., 2009; Seashore, et al., 2010). Collaborative initiatives are more effective than single unit initiatives because of the wealth of knowledge and skills, shared resources, opportunities for large scale research and impact assessments. Many state departments seem to be encouraging initiatives and projects that involve partners working together for regional and or state benefits (See the works of CEEDAR). In my work experiences both in Ohio and Texas, I have had the pleasure of experiencing such collaborative initiative, both at a state level (Ohio) and at a systems level (Texas).

There are common characteristics that can be found in most collaborative initiative. There is a sense of having a common goal or vision that will need to be advanced. The stakeholders seem to be authentic given that they have a shared vested interest in the project. Most large-scale collaborative initiatives have a funding source for the project. These could be state funded or federally funded. The outcomes of the projects aimed to be scaled up especially if they are considered initial pilots or models for other institutions (IHEs, schools, or state department). Implementation is expected to be large scale. Figure 1 is a model for most large-scale collaborative initiatives. The figure describes four essential components of a large-scale collaborative model including specific actions or activities that occur at each level.

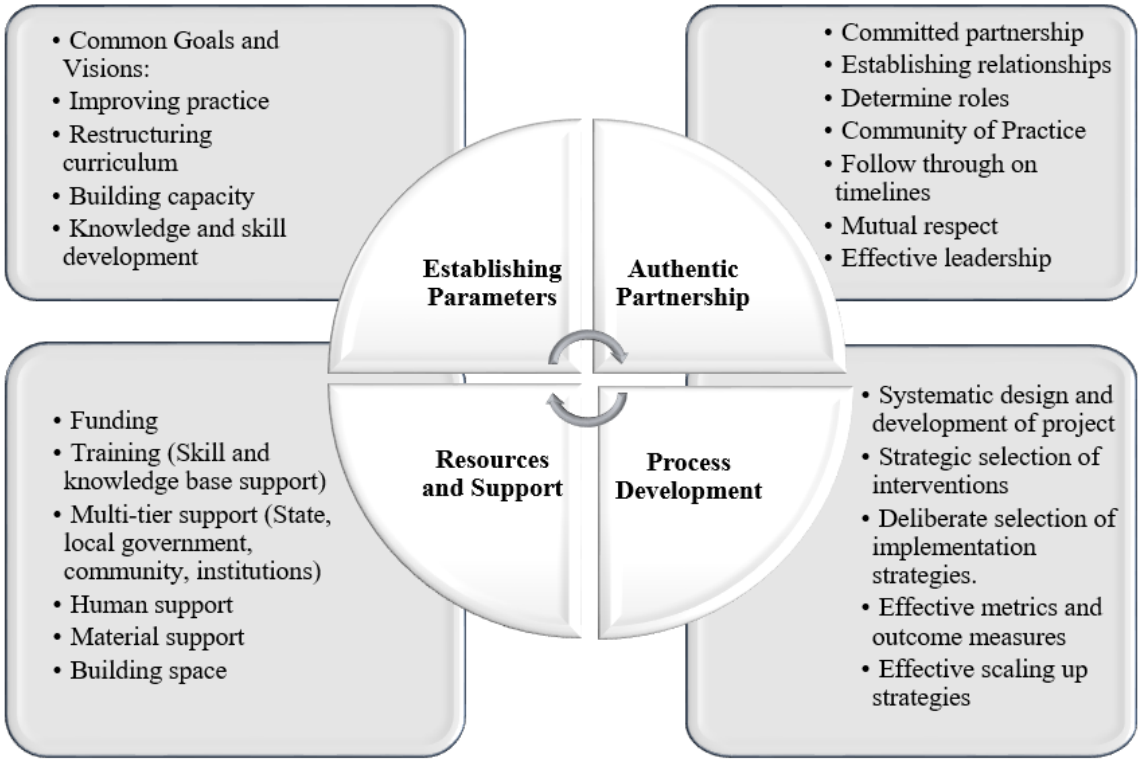

Figure 1: Collaborative Continuous Improvement Practices Framework for Large-scale Collaborative Models: Essential features of a large-scale collaborative model.

Comprehensive school reform

Large scale educational reform initiatives are developed to facilitate the implementation of reforms that have been identified as beneficial to education as a whole and result in positive student outcome. Frameworks for large-scale collaborative models, for example, Comprehensive school reform (CSR), are among the waves of improvement efforts that radiated from the 1983 report *A Nation at Risk*, a landmark indictment of U.S. public schools (Ochieng-Sande, 2013; Staresina, 2004). The basic principle of CSR is that instead of a fragmented approach to addressing achievement issues, schools must overhaul their systems from top to bottom (Staresina, 2004). CSR improvements encompassed everything from curriculum to school management and their implementation is large-scale (Vernez, et al., 2006). Some of the most recent educational reforms have stemmed out of the No Child Left Behind reauthorization of the Elementary and Secondary Act. These reforms include Race to the Top, Closing the Achievement gap, and Standards and Accountability.

Other large-scale models can be seen in initiatives such as response to intervention initiatives (RtI), and positive behavior and intervention support models (PBIS) school wide reform initiatives ((Horner et al., 2009; Hughes, & Dexter, 2011; McIntosh, Filter, Bennett, Ryan, & Sugai, 2010; Ochieng-Sande, 2013; Sugai, Horner, & McIntosh, 2008). Every stage of the design process involves a group of stakeholders who will ensure the educational reform, including each design phase is

implemented with fidelity. It is essential that members of the design team have efficient means of communication, and the necessary resources they need to see the reform effort through to its inception. Faithfully implementing a CSR model according to the developer's design is challenging (Vernez, et al., 2006). It often requires educators throughout the school to rethink their practices, actively change many of them, and sustain the changes over time, a process that requires leadership, know-how, teacher buy-in, additional resources, time for teachers set aside from other school duties, persistence, and compatibility with state and district standards and policies (Vernez, et al., 2006).

Team-based approaches

State based initiatives are encouraged to use a team-based approach for project implementation and practitioner support. This approach supports the creation of several tiers of leaders from the state department down to the school level. Using this team approach, many of the state-wide educational reforms are designed and implemented by these teams. A team approach, which is a collaborative approach, is effective because projects get done faster, and has a lot more buy-in than national or state designed projects, mandates, or educational reforms (Ochieng-Sande, 2013). Figure 2 is an example of the team-based approach; a conceptual model that focuses on teaming as an effective method for project development and implementation.

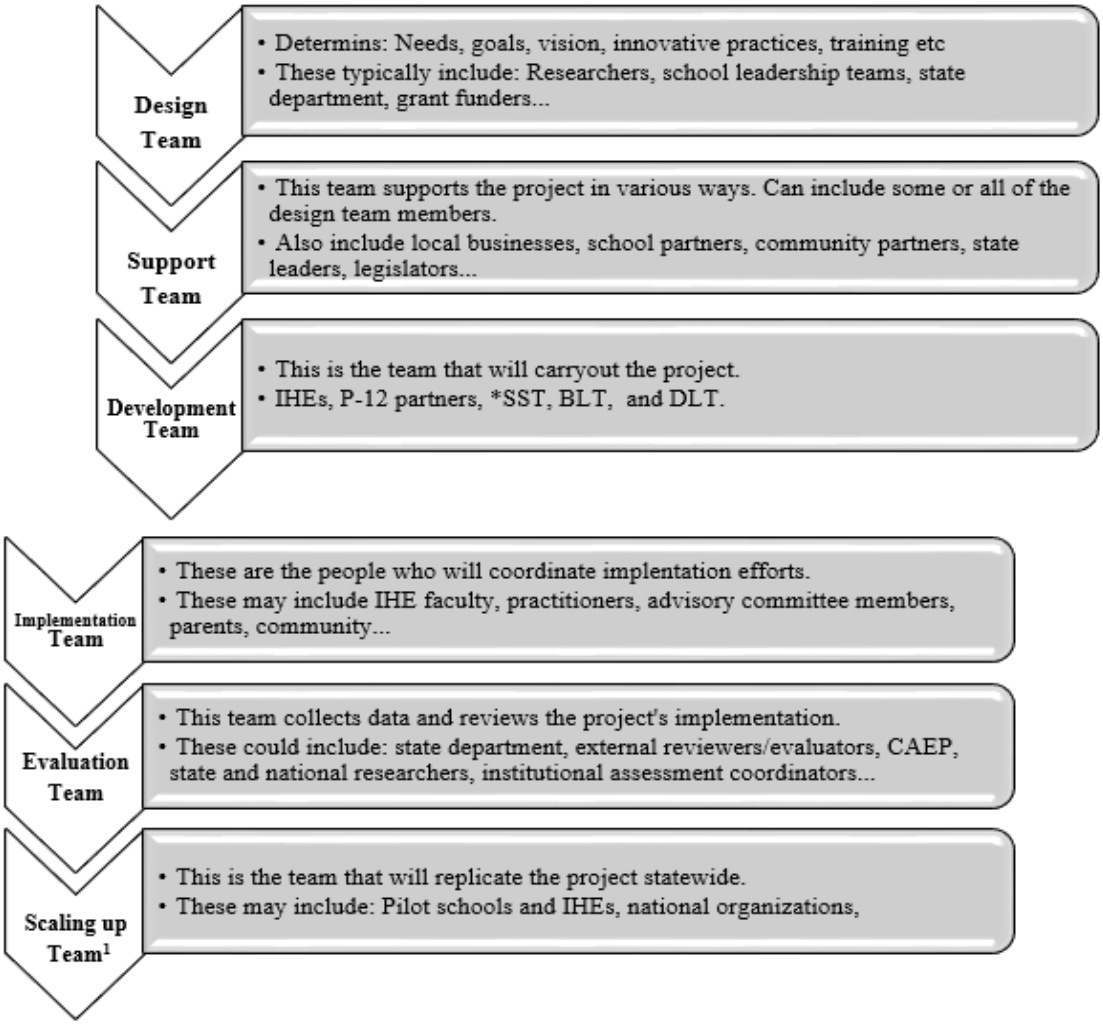

Figure 2: Systematic Collaborative Reform Process: CCIPs use this team-based approach to design and implement educational initiatives and reforms.

*SST: State Support Team, BLT: Building Level Team, DLT: District Level Team

[1] Scaling up can be defined as the process by which researchers or educators initially implement interventions on a small scale, validate them, and then implement them more widely in real-world conditions (Odom, 2009).

In is important to note that Collaborative Continuous Improvement Practices (CCIP) build on models similar to these large-scale initiatives that prioritize implementation of educational reforms on a large scale, but also draws from prior and more recent innovative theories and frameworks that emphasize partnership and group creativity.

Conceptual framework

CCIP is founded on specific theories and frameworks. In addition to building on the CSRs models, CCIP framework is grounded on the convergence of the theory of change (ToC), improvement and implementation science (LeMahieu, Edwards, & Gomez, 2015; Hannan, Russell, & Takahashi 2015), and investment theory of creativity (Sternberg & Lubart, 1991, 1995).

ToC which is generally used in many funded projects to map out a link between the project developer's initiative and desirable outcomes. The initiative usually includes the available resources, activities, and products with long term and short-term goals described. Systems that use ToC begin by identifying the desired long-term and short-term goals including some basic assumptions, and then work their way backward from these to identify all the conditions (outcomes) that must be in place for the goals to be achieved. This is done by not only leveraging partnership between educator preparation programs and P-12 school partners, but including all stakeholders including parents, state departments and regional education agencies.

Investment theory of creativity is a confluence theory according to which creative individuals are described as those who are willing and able to "buy low and sell high" in the realm of ideas (Sternberg, 2006). According to the investment theory of creativity, there are six resources for creativity: intelligence, knowledge, intellectual styles, personality, motivation, and environment (Zhang, & Sternberg, 2011). The investment theory of creativity in this case is looked at in the context of the collective or the collaborative. The CCIP postulates that these six resources for creativity can be realized as a collective to rapid improvements in the field of education.

Implementation science uses a research approach to implement what is proposed as effective into routine practice and or policy while evaluating its effectiveness and planning a scaled-up implementation of the initiative (LeMahieu, Edwards, & Gomez, 2015**)**. Evaluation is done throughout the process from the development stage all through to the implementation stage. A sister approach is Improvement science (LeMahieu, Edwards, & Gomez, 2015**).** which is used to accelerate how a field advances by using a disciplined inquiry to drive improvement. It is a methodology for using disciplined inquiry to solve a specific problem of practice by deploying rapid tests of change to guide the development, revision and continued fine-tuning of new tools, processes, work roles and relationships (*Carnegie Foundation for the Advancement of Teachers*). Along the same lines, Improvement science is explicitly designed to accelerate learning-by-doing. It's a more user-centered and problem-centered approached to improving teaching and learning. It offers a framework for data-driven explorations of practice while integrating change into complex systems (Hannan, Russell, & Takahashi 2015).

Both are a contrast to the pilot approach that was used in the CSR models, where an initiative must be seen to be effective before large-scale implementation. Since improvement research is an iterative process often extending over considerable periods of time, it is also referred to as "**continuous improvement".** The role and responsibilities of the stakeholders shift to being more of an innovator, designer, researcher, and so on as the team collectively generate improvements in practice.

Ohio's Model for Effective Inclusive Practices

There are several key ingredients that make for good collaboration. In this instance, collaboration will be seen at in the context of statewide partnership and alliances for capacity building, effective teacher preparation, and overall student improvement. I highlight the following

concepts as essential elements necessary for statewide collaboration. In understanding the concept of CCIP, The Deans Compact is showcased as the exemplar in the Ohio's Model for Effective Inclusive Practices (OMEIP) model.

1. Establishing Parameters

Documentation of Shared Values:

The excellence of The Deans Compact rests in part in the shared values of its members and partners. The shared values are evident in partner selection, curricular development, research endeavors, and the greater good of training high quality teachers. It is also crucial to understand the importance of identifying, collecting, analyzing, and effectively using relevant data to identify greatest problems to be addressed (OLAC, 2013). Many of the IHE have integrated evidence-based practices (EBP), highly effective practices (HEP) and high leverage practices (HLP) (CEC 2013; Hardman, 2009) within university courses. The purpose for this kind of integration is so that all the EPPs statewide can develop and implement superior quality program.

The Compact serves as an advisory group to state leaders from the Ohio Department of Education (ODE) (Office for Exceptional Children) and the Ohio Department of Higher Education (ODHE) (ohiodenscompact.org). A shared mission of the Deans Compact, ODE and ODHE is to restructure and revamp teacher preparation and personnel development in Ohio (ohiodenscompact.org). An articulated common objective helps stakeholders identify fundamental targets and the process of realizing those targets.

Development of philosophical and operational interdepartmental and inter-institutional goals:

A necessary ingredient for any collaborative effort is having a common goal or set of goals. Departments within IHEs tend to work independent of each other. With the work of The Deans Compact, departments are forced to work together for the benefit of their students. These departments could be at the school level, at the university level, of at the state level. The ultimate goal is for school age students to receive the best possible educational experience that will guarantee their success at their individual potential. Though philosophical and pedagogical approaches may differ, operationalizing a single overarching philosophy, that is mutually agreed upon is essential to bridging the theoretical divide between departments. It is essential that when faculty work together they are integrating content with meaningful experiences, essential life skills, appropriate dispositions, and professional code of ethics.

Similarly, general education teachers and special education teachers are encouraged to partner and work together to benefit all students. It is essential that both teachers are accorded time to consult and collaborate (Wallace, Anderson, & Bartholomay, 2002).

Development of effective collaborative instructional practices

Course articulation agreements have existed in Ohio for years.

These have ensured seamless transitions between all public and private IHEs. One example is the *Transfer Articulation Agreements (TAGs)* courses whose learning outcomes are collectively developed for key content educational courses. Because of the binding nature of these TAGs, students are able to transfer course credit from one two-year or four-year institution to another. More importantly, institutions have been able to give credit for courses completed at other institutions without having to dig for evidence that the course is as rigorous as it should be. The benefits of developing these TAGs have been the collaboration between several IHEs in developing common educational learning outcomes (ELOs) through a shared set of goals and expectations.

Similarly, the Deans Compact have encouraged the development of dual license programs that focus on core standards (CAEP standards) without making the programs too large to be completed in four years. This requires major restructuring of programs and collaborative efforts to see it through. Key components in the restructured programs must address innovative inclusive practices that meet the needs of marginalized school age students.

2. Authentic Partnership

Formation of Academic Alliances:

The formation of an academic alliance means faculty from colleges/universities and faculty from schools who teach the same academic disciplines collaborating to identify critical subject-matter knowledge, core concepts, and pedagogical strategies that promote student learning in their specific subject area. Academic alliances can go beyond classroom- university alliances to cross department alliances, regional alliances and state alliances. In this same token The Deans Compact has created opportunities for IHEs across the state to work collaboratively to develop high quality EPP. In the same token, faculty have worked across programs to develop robust dual license programs that attract more future teachers. Similarly, stronger alliances between university faculty and P-12 partners have resulted in creation of rich clinical experiences for teacher candidates through Year Long Clinical Models in Southeast Ohio, Professional Development Schools, and Co-Teaching experience developed and implemented through collaborative academic alliances. Through the work of the Deans Compact, many IHEs and their partners have focused on the critical need for immersive and extensive fieldworks as a measure of quality in teacher preparation.

Beyond the IHEs and school/community partners, the Deans Compact has partnered with CEEDAR to share resources and funds of knowledge on implementing inclusive practices.

Emphasis on building capacities through regular meetings and periodic consultation:

A product of collaboration through the Deans Compact has been the increase in capacity building between schools and IHEs. The Deans compact uses these meetings and professional development for their partners, for dissemination of information, for collaboration on state specific needs, and for updates on development and implementation of innovative practices. All stakeholders get to hear about policy changes, accountability requirements, innovative practices for schools, IHEs and statewide implementations, state department requirements/update, and various professional organization presentations. The Deans Compact has an annual conference and quarterly meetings. Periodic collaboration is done through telephone collaboration to facilitate sharing of updates, discussion on ongoing projects, and planning for upcoming meetings.

3. Resources and Support

Robust membership and representation

Effective collaborative initiatives need to ensure their constituents are well represented to ensure needs are addressed. The Deans Compact's membership consists of deans and heads of department, faculty from various educational departments, state department of education representatives, regional educational representatives, superintendents, principals, professional association representatives, teachers, and community representatives. As are evident multiple constituencies are consulted to gain support for much needed improvements. By acquiring support from different constituents, the work of the Deans Compact becomes meaningful, relevant and authentic to all stakeholders who work with children, especially those who aim to improve the quality of education for exceptional children.

Emphasis on Partnership Grant Programs:

Through the Ohio Deans Compact on Exceptional Children, collaboration has been encouraged through partnership grants. These partnership grants are written collaboratively by IHE partnering with other IHE, IHE partnering with PK-12 schools/districts, or multiple IHEs partnering with Multiple PK-12 partners, their regional support teams and other agencies within the state. At the center of all the partnering are state departments who support the great work done by all stakeholders. The Deans Compact focuses on identify institutions that exemplify collaboration and shared learning among Ohio's IHEs. The Deans Compact looks for evidence of collective and cross-departmental collaborative approaches, and partnerships with community and local businesses and supports these initiatives through simultaneous renewal grants.

4. Process Development

Evaluation and review of innovative practices

Continuous review and evaluation are the cornerstone for effective practices. It is essential that any project is assessed for its effectiveness. The Deans Compact provides support for research, demonstrations and evaluations of the IG projects. IHEs and their partners are able to demonstrate products resulting from the funding provided during regular quarterly meetings and conferences. Research is done on the simultaneous grant initiatives that are used to increase knowledge and skills as well as for capacity building.

Each IG recipient is required to have an external evaluator who also reports the works of the grantees to the Deans Compact. These reports by the external evaluators describe the process and timelines for the project, what has been accomplished, challenges identified and implementation efforts.

Scaling up effective practices

A good collaborative initiative should always plan to scale up its practice and increase implementation of effective innovative practices beyond its initial assemblage. Efforts to scale up the works of the Deans Compact are ongoing statewide and literature from the works of the Deans Compact is shared at various conferences to enable implementation at institutions in other states. More information about the scaling-up efforts are discussed in the next sections.

Implications for CCIPs

The works of the Deans Compact has resulted in more institutions offering dual licenses programs and giving preservice teachers options to graduate with two teaching licenses. The benefits of this is two-fold; a teacher candidate can work with all students including exceptional children in an inclusive general education classroom, and a teacher can work exclusively with exceptional children providing much needed special education services.

Moreover, the Deans Compact added a "*policy committee"* to examine licensure requirements and make recommendations to the team and the state department a future in which inclusive education prevails (ceedar.education.ufl.edu). The restructuring of the teacher and leader licenses to include licensure structures that would accommodate dual qualification that are necessary for realizing inclusive practices.

The Deans Compact provided opportunities for IHEs and their partners to be privy to numerous experts who have shared many research-based Collaborative Frameworks, Active Implementation Frameworks, Global Implementation Specialist Model, and Scaling-up Evidence based Practices Frameworks (Duda & Wilson 2015; Fixsen, et al., 2009; Metz, Louison, Ward, & Burke, (2017); NCEO, 2012).

IHEs and their partners have had opportunities to share their individual works at regional, state and national conferences. So far, the Deans Compact efforts have followed the Effective Collaboration Process seen in Figure 3 until the implementation stage. Many of the IHE implementing their dual license programs and P-12 partner projects are collecting data to use later to evaluating their programs. The excellent work that has been done so far by the Deans Compact has been presented at numerous conferences (CEC, AACTE, National Co-Teaching Conference, AMLE, PDS conference, etc.).

CCIP approach be can be applied more generally to education. Just like the *Call to Action-Bringing the Teaching Profession Back* by Michael Fullan and Andy Hargraves (2016), it is time to build a culture of capital. It is important to make collaborative professionalism (Fullan & Hargraves 2016) as well as collaborative solution finding the centerpiece of any reform strategy. Whether it is a state or national coalition, or even a system coalition, all stakeholders must be at the table for effective reform to take place.

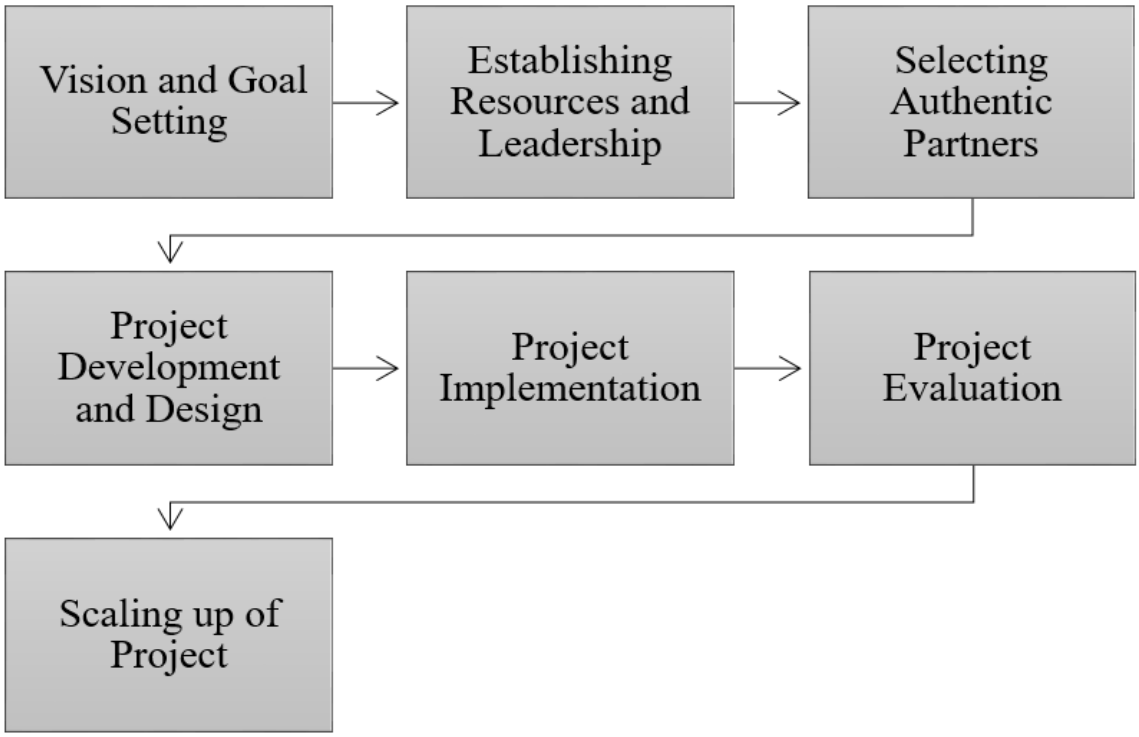

Figure 3: Effective Collaborative Processes: This model shows a typical process for collaborative project design and implementation.

They also advocate for taking a bold and broad yet also specific and explicit stance on competencies and outcomes (Fullan & Hargraves 2016). Values, skills, and competencies for students and for teachers must be defined, fostered in practice, and assessed in terms of progress. By endeavoring in an inclusive practice of education to ensure equity of access, especially for exceptional children, OMEIP ensures EPPs are preparing teachers who qualify to work with all students and not just one discipline or content area. The collaborators brainstorm ideas of how to ensure teacher candidates graduate in programs that prepare them to obtain dual licenses.

Finally, Fullan & Hargraves (2016) advocate for reform efforts to get involved beyond region, state, or country. As these reform efforts are taking place, observe education trends outside of your educational purview. It is important to reach out to and learn from other systems and strategies (Fullan & Hargraves 2016) and partner with other collaborative organizations (Such as The Deans Compact, RYHT, US Prep etc.) to ensure you are all implementing and scaling up effective evidence-based practices. By emphasizing a community of practice "climate of learning" approach, stakeholders can be encouraged to work together?

It is important to note that all these plans, and implementation of changes in practice are aimed at an overall improvement in student learning outcomes. When EPPs and their partners identify effective practices for preparing teachers through ToC and Improvement/ implementation science, the direct outcome will be positive learning outcomes for all students.

Replication in other states

Currently there is no commonly accepted definition of scaling or scaling up in human services or other fields (Fixsen, et al., 2009). Nevertheless, any effort made to share and or replicate the works of the Deans Compact will be considered scaling up efforts.

The Deans Compact continues its vision of meeting the critical need of improving EPP so that highly qualified teachers offer all children the appropriate education they deserve (Seashore, et al.2010). The excellent work of the Deans Compact needs to be replicated by states who have similar needs and have a yearning to implement effective collaborative practices across their states.

Ohio has been an Intensive Technical Assistance Partner of CEEDAR since 2014 (ceedar.education.ufl.edu). The collaborative efforts between the Deans Compact, Kent State University, University of Cincinnati, University of Dayton and CEEDAR is an example of shared the work for overall student improvement. In the article by Fullan (2009), he reiterates how everyone agrees that high quality teachers are critical, and that leaders and teachers working together focusing on student learning and achievement is essential. However, there are sharp differences concerning the policies and strategies for reaching these outcomes.

Given the current systems and leadership structures in Ohio, the state can develop implementation efforts to scale up the works of the Deans Compact to effect educationally and socially significant outcomes for the children of Ohio (See Figure 4). This systematic structure of scaling up the works of the Deans Compact could result in wider implementation of these projects (Klinger, Boardman, & McMaster, 2013). IHEs have an obligation to demonstrate how they will sustain the projects they have developed. In the same token, these partnerships at the local level can implement small scale replication of their projects. It is necessary that each project developer develops a strategy for sustaining the project (Sindelar, et al., 2006).

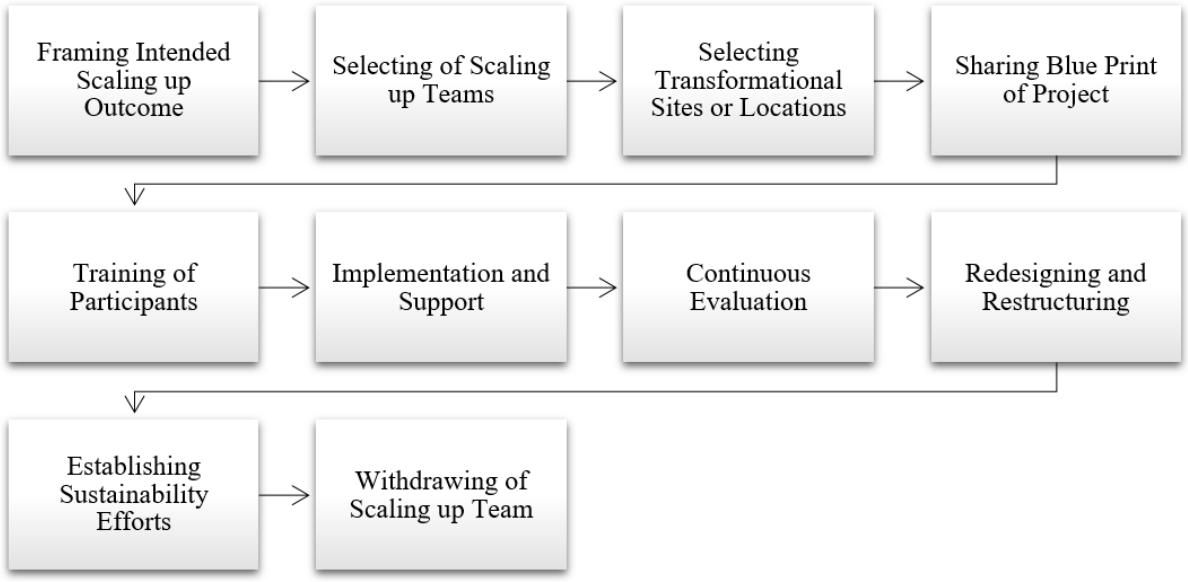

Figure 4: Scaling-up Process: This model demonstrates the process of scaling-up a project.

The task of the Deans Compact would be to begin by framing the scaling up outcome. This would include making accessible the various Blue Prints of the restructure programs. The Deans Compact would then select leadership teams and locations for scaling up the project. Training is essential so that the projects are implemented with fidelity at the various sites. During implementation, continuous evaluation should take place so that the scaling up team can decide whether to redesign or restructure the project. Sustainability efforts should be put in place before the scaling up team exits.

Beyond the works in Ohio, similar collaborative continuous improvement processes exist in other states. One such example includes the works of the Carnegie Foundation in collaboration with "*Raise Your Hand Texas (RYHT) Foundation".* This partnership between RYHT and 11 educator preparation programs in Texas aims to improve teacher education by bolstering the teacher-

candidate pipeline and deepening the clinical experience which is an essential component of teacher preparation. shared problems as a networked improvement community.

Summary

CCIPs can be used to initiate statewide educational reforms through systematic and systemic development, implementation and monitoring. The implications of the Deans Compact work are far reaching that is why "Ohio's work to improve outcomes for students with disabilities and other marginalized learners is supported by a statewide system of support (SSoS) that is both systemic in nature and statewide in scope" (Compact Synopsis #3, p 7). Even though collaborative efforts are primarily sustained through grant funding, all stakeholders are encouraged to develop independent sustainability strategies at the local level. Furthermore, replication is encouraged beyond the partners to other local schools and IHEs.

Educators interested in talent development and those who encourag creativity with students at any levels can identify many of the collaborative practices found in the CCIP to collaboratively engage in change to enhance the field of education. EPPs and their partners will need to identify what they both value to determine authenticity in their partnership before they begin to formulate a ToC that would be effective for positive student outcome (both at IHE and school level).

At the local level each institution will need to use the investment theory of creativity, to acknowledge individual intelligences and creativity, and ability to creatively contribute to practice and policies of student learning.

Finally, what should continue as an integral part of the continuous process is the continued engagement through communities of practice. Professional development should not be limited to presenters presenting workshops or teachers and professors attending conferences. Active research and intellectual engagements through communities of practice is not only advantageous to the professionals, but ultimately a benefit for all out students.

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About the Author

Dr. Beverly Sande is an Assistant Professor and Director of Panther Teaching Academy at Prairie View A & M University. She has worked as an educator for over 24 years. She is a licensed educator in South Carolina, Ohio and Texas. In her capacity as an educator she has held several leadership positions: Department chair, Program Coordinator, and Chair Faculty Senate.

Dr. Sande's research focuses of comprehensive educational reforms, collaborative partnerships, large-scale implementations and scaling up of interventions and culturally responsive state-wide reforms. She has written articles and book chapters that focus of large-scale / comprehensive reforms. She presents research and best practices at various renowned conferences. She has provided professional development through workshops across many states. She has worked with colleagues on grant funded projects since 2014 as a principal investigator, co-principal investigator, and external evaluator. She has conducted project analysis and evaluation for various other projects.

Dr. Sande is a member of several professional organizations as well as serving in several committees. As a member, she is engaged in the works of her profession championing highly effective practices. Professional organizations come with various obligations including voting and service, both of which she fully engages.

Address

Building Human Infrastructure through Programming and English Education in Rural Japan

Mary Frances Agnello; Naoko Araki; Florent Domenach
Akita International University, Akita, Japan

Abstract

As Japanese Ministry of Education educational mandates for implementation by 2020 press on public school administrators, teachers, students, and communities, the Sustainable Programming Education proposes strategies for addressing English and programming education curricula in the elementary and middle schools. Sustainability resides in the retraining of teachers, working with university undergraduates who can be technologically savvy as they network in the rural community, and using existing resources wisely. Over a period of two years, the Sustainable Programming Education (SPE) model has emerged based on a community action model with university administration support in the northern rural Japanese prefecture of Akita.

Keywords: Sustainable; programming; education; professional development; rural infrastructure.

Introduction

As Japanese Ministry of Education (MEXT) educational mandates for implementation by 2020 pressure public school administrators, teachers, students, and communities, the Sustainable Programming Education (SPE) proposes strategies for addressing English and programming education curricula in the elementary and middle schools. Sustainability resides in the retraining of teachers, working with university undergraduates who network as they work in the rural community, and using existing resources wisely.

Over a period of two years (2017-2019), the (SPE) model has emerged based on a community action model with university administration support in the northern rural Japanese prefecture of Akita. Initially, the project impediments were traced to the over-busy schedule of public school teachers, administrator fears to disrupt the routines of the school week, as well as teacher insecurities with concepts of computer programming and English education.

As the ideas for teacher, parent, and student training were disseminated in the community, parents and students became very interested in the potential of students learning English while mastering computer programming, concepts, language, and skills. As teachers understood that they already teach logical thinking, creativity, and problem solving, they became more relaxed. Finally, administrators realized that university students can provide much needed technical knowledge in the community.

Purpose

Sustainable Programming Education (SPE) in Akita, in rural northern Japan, will collaboratively develop sustainable pedagogical approaches multi-generationally, particularly regarding Instructional Technology expertise and integrated studies based on teacher knowledge, skills, and needs. Teachers will disrupt current practices by re-positioning themselves with pedagogical and programming strengths through SPE to ensure their compliance with MEXT 2020 mandates.

Objectives

The objective of this project and the action research model implemented to both document and improve the professional educator-private sector-and public school effort to build information systems through the Sustainable Programming Education (SPE), an initiative that integrates multi-generational English and Programming Education through teacher professional development. This collaborative model will strengthen professional relationships amongst individual teachers, as well as train university students to become scientific communicators while engaging parents with a public school and private business sector to contribute to local rural educational and economic strength. Relying on free-use web-based programs, "unplugged activities", private sector technology, teacher expertise to teach logical thinking, problem solving, and creativity, as well as providing experiences for Akita International University students to teach peers, professional teachers, and public school students, a sustainable programming education program is being developed.

Background

Why SPE? As public school administration face the challenges of depopulation of small towns and the countryside, stagnant economic conditions, and the need to adapt locally, nationally, and internationally to a globalizing world, the MEXT has high expectations for Japanese schools. Further professional pressure on public educators by MEXT 2020 curriculum reform ensues from the need to prepare digital "natives" to become proficient in computer programming. Increasing Japanese students' English language abilities has also been the main focus by MEXT. Rural areas of Japan such as Akita are examples of many communities facing these challenges. Teachers are the social and educational connection between educational mandates and student learning. Yet, over the years, teachers find themselves at a crossroad of personal language development need. Additionally, their knowledge and skills in IT will be put to the test from 2020. Working with educators to develop professional proficiencies in both English and computer programming through SPE will help address the heavy burden that teachers face during the preparation and the initiation of MEXT 2020 reform. By tapping the talents of university students and training them to work in schools with teachers and public school students in collaboration, a digital and linguistic inequality gap problem will begin to be lessened. Additionally, university students' expertise will be engaged to address needs of local rural communities.

Through a series of progressive steps, we are providing on-going support to school teachers and students in rural areas in northern Japan for the 2020 requirements of the new educational policies in programming and English. This support will help collaboratively developing pedagogical approaches with local communities and teachers that are sustainable, particularly regarding instructional technology (IT) expertise and integrated studies based on their knowledge, skills and needs. Through teachers re-positioning themselves with confidence in their expertise and revisiting their pedagogical strengths through the SPE project, their art and science of teaching both programming and English will increase. This collaborative model will strengthen professional relationships amongst individual teachers, as well as train university students to become scientific communicators. Original in concept, no other projects in Japan have tackled such issues. Anticipated results and effects of two workshops delivered in November 2017 and January 2019 have led to communication networks developing in rural settings where linguistic and technology expertise are in demand.

Sustainability literature

Wiek, Withycombe, and Redman (2011) conducted an extensive literature review across disciplines in order to identify competencies necessary for solving sustainability problems particularly in urban settings. They found transformational action connections in participatory, deliberative, and adaptive settings identified by Bäckstrand (2003). In educational literature, there is an extensive body of problem solving literature perhaps made most well-known by John Dewey's pragmatism of education as schooling an integral part of society, rather than separate from it In his most famous

treatise on education, Democracy and Education (Dewey, 1923), he illustrates vividly the need for collaborative problem-solving to be achieved in communities. The precepts of sustainability reside in collaborative, problem-solving, and transformative models of education and goal achievement. Many angles of sustainability have been and will continue to be studied—for we know that water will sustain the planet, as will agriculture; yet, we also recognize that we need technological knowledge and the ability to communicate globally in order to solve some of humankind's most pressing issues, including how best to educate the young to become the problem solvers of tomorrow. Thus, we cannot separate the "hard sciences" from the social and behavioral realm of teaching and learning in order to tap our most precious human resources in the effort to sustain social systems within sustainable environments.

Building from years of sustainability research and curriculum innovation efforts informed by Dewey, the researchers have considered the green built environment (Darwish and Agnello, 2011), water as the key to survival of the planet as a curricular mainstay (Doue, Agnello, & Morgan-Fleming (2008), as well as the use of a participatory action model of research for problem solving (Agnello, 2006, 2007; Agnello & Lucey, 2007; Agnello & Todd, 2008). Participatory action research models along with professional development workshops helped educators in Japan in particular when English as a foreign language education was introduced to elementary school curricula for the first time (Araki & Senior, 2015; Araki, 2012 a, b; Araki, 2011). Another aspect developed by researchers through the years is university students' involvement and training, especially in research development (Domenach & Rajabi 2017) or as links to industry (Savva, Hadjidakis, Domenach & Stylianou 2015, Domenach, Charmarai, Savva & Christou 2015). Such academic knowledge building became the backdrop of the current research focused on a participatory action research model, as well as the focus on environmental and social sustainability.

In rapidly expanding fields of sustainability wherein international educational programs have been founded and curricular focus at such institutions of higher learning as Akita International University have been established, the groundswell of emphasis on educating current and future generations to solve sustainability problems warrants the need for the SPE. We see the need for the foundations of a sustainable computer programming education, as well as more and improved English skills in the northern rural prefecture of Akita, Japan where human resources are dwindling due to rural flight of the young and the paucity of economic alternatives to the once highly successful agricultural economic sector in the area.

The overarching framework posited by Wiek, Withycombe, and Redman (2011) provides problem-solving capacity supported by analysis leading to sustainability solutions, anticipation and preparation for future challenges of sustainability. Addressing the need for more and better English skills in rural Akita, as well as competencies leading to computer science expertise, the teachers, AIU students, and existing IT resources provide a linchpin for future development and growth as described by Wiek et al. (2011) who articulate five key competencies in sustainability that can be applied in university curriculum in urban settings although they are also highly relevant to rural university sustainability curriculum as well. They include systems thinking competence, interpersonal competence, anticipatory competence, strategic competence, and normative competence. Such acumen allows for in-depth understanding of present systems, generating several alternatives for future sustainable visions—both interventionist and non-interventionist, in addition to group dynamics fueled by collaborative and cooperative individuals intent on goal achievement that depends on acquired normative knowledge reliant on concepts of justice, equity, social and ecological integrity, and ethics (Wiek et al., 2011; Darwish and Agnello, 2011). Wiek and fellow researchers, as do all researchers cited here, emphasize that sustainability efforts link knowledge to action, depending on the co-construction of knowledge and practical solutions.

Methodology

The first trial SPE workshop was held in Akita on a Saturday to encourage educator participation in November 2017. A second trial workshop was held in early January 2019 on a Saturday similarly so that regular work and school schedules would not interfere. The local Ministry

of Education in the Akita prefecture provided their continuous support for these trials, along with that of Akita International University administration. Based on the findings from the trials, a participatory action research (Problem, Actions/Solutions, Assessment) will be incorporated for planning and implementing the full SPE project beginning in January, 2019. The project will engage an action research model combining pre-assessment, intervention preparations, intervention, and on-going assessment, as well as project evaluation. The objectives of the three-part professional development initiative includes three phases (Research, Education, and Social impact) illustrated in Figure 1. The training and implementation period will be tailored to school commissioners' and teachers' needs to adapt their views of teaching two required curricular subjects in an integrated manner—English and programming (See Figure 2). University students will develop and improve their skills to deliver the instruction. In turn, the PI and co-Is, with students, will deliver more workshops in schools of Akita, as well as disseminate the findings of their project work as depicted in Figure 3.

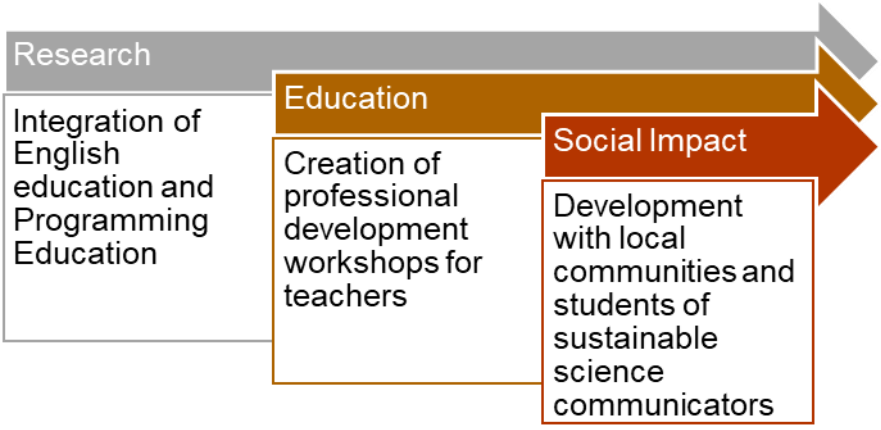

Figure 1: The implementation of Sustainable Programming Education.

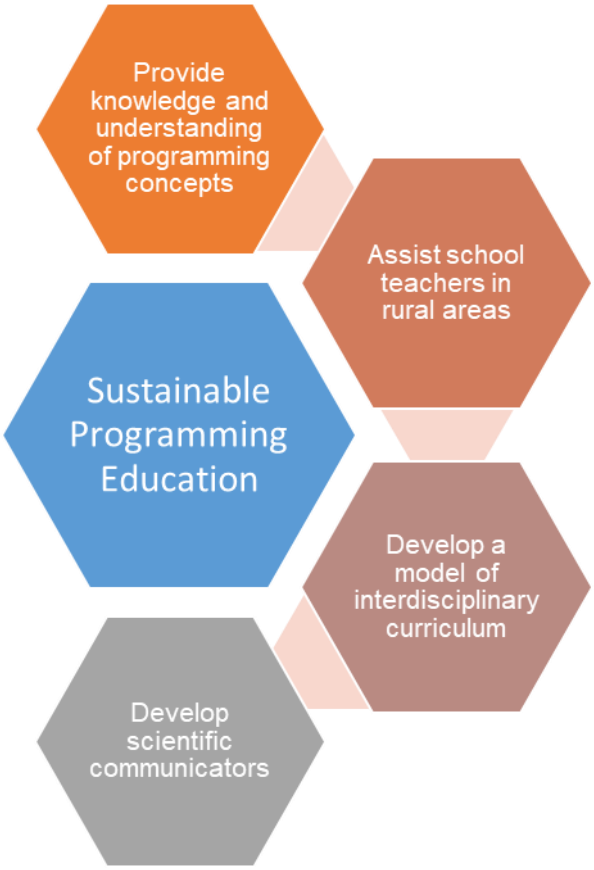

Figure 2: Objectives of the Sustainable Programming Education (SPE) effort.

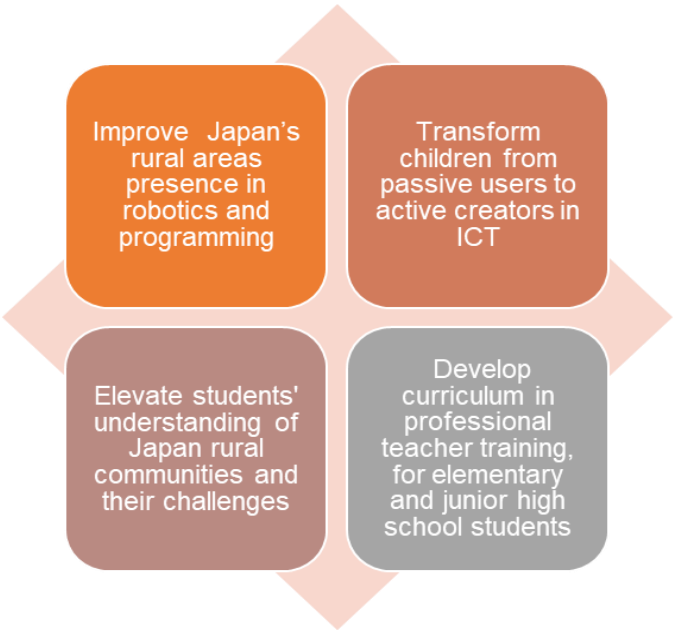

Figure 3: Outcomes of the Sustainable Programming Education (SPE) implentation in Akita, Japan.

Findings—Three facets of building sustainability

University students

Since the focus of computer programming is taught in the university, and the English curriculum is the instructional medium at AIU, the students are well positioned to become experts and teachers. As demonstrated in both the December 2017 and January 2019 teacher workshops, the university students were both necessary and integral to the three-partite program in development. The participating students are personable, know programming techniques, and speak English, and perhaps even more remarkable is that they are collaborative problem-solvers. They were able to ensure that all participants in the simultaneous adult/student and teacher workshops were able to follow and engage in the activities—instructing, demonstrating, redirecting, correcting, and trouble-shooting when they were needed to oversee the unplugged, computer, and robotic activities. Further, they were logistical assets—directing participants where they needed to be, making signs for clarity, and getting the participants from the greater community familiar with the university campus environment. The president of the participating private sector instructional technology company, EK Japan, remarked both in person and in post-workshop email communications how much knowledge that the students have of English, computers, and pedagogy to connect the public school students, teachers, and parents from the community with the desired learning outcomes of each activity. In many ways, the young adults are the foundations of the proposed sustainability effort.

Public school teachers

The teachers in attendance at both the 2017 and 2019 workshops expressed the desire to know more about how to address the students' and teachers' needs in order to be in compliance with the MEXT 2020 curriculum change mandates. They realized after they started participating in the unplugged and computer-based learning sessions that they already do much of what is being repurposed and reframed in the name of computer programming; that is they already impart logical thinking, creativity, and problem-solving to their students every day in routine teaching. As they began to comprehend how to reframe, redirect, and re-establish their knowledge frameworks, they were able to see that there is not much new to consider as necessary to the preparatory programming that they are responsible to teach. They have much of what they need in their pedagogical repertoire. They just need to master some new vocabulary, re-imagine what they do in the various disciplines in the contexts of the programming guidelines, and implement instruction that engages all of their students. If they had doubts about the resources needed to achieve this goal before the workshop, they were assured that they have some resources that can be shared in effective teaching practices that they implement routinely with no cause for panic.

Resources—using and stretching what we have

Because many rural schools lack up-to-date hardware and software, administrators and teachers expressed that they felt overly challenged to meet the computer coding curriculum. Yet, as they saw the workshops being implemented, they witnessed the kinds of turn-taking and rotations that they use in the classroom in order to provide interest for the students, in order for all the students to be able to engage in the activities, and in order to have the students take turns in various classroom stations in rotation fashion. Although the computer labs in many of the rural schools date back to the 1980s, there are many ways that an internet connection can afford the accessibility to needed resources online. The hourofcode.com for example provides many short computer programming lessons building from simple to more complex concepts. Using pencil and paper can also achieve many of the goals of the programming instruction detailed in the MEXT 2020 mandates. Thus sustainability can be achieved by relying on existing resources without expending large sums of money in order to accommodate elaborate computer laboratories. Also, the few existing computers in classrooms will be shared among the students in order to ensure that all students will have opportunities to work hands-on with computer technologies.

Major conclusions

A three-phase educational and professional development effort will address needs of schools, teachers, and students to fulfill local and national directives of ministries of education. We aim to support teachers to incorporate and upgrade the technology and programming education for curricula in the elementary and junior high schools. This will be achieved by introducing an interdisciplinary approach to programming education with the emphasis on English language education since English is the core language in programming. Such efforts are aimed at building the foundations for information systems to enable future international communications and local prefectural information systems infrastructure. Such knowledge foundations will contribute to rural Japan's participation in robotics and programming, as well as establish curriculum to further technological goals with and for local teachers and their students.

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About the Authors

Addresses

Mary Frances Agnello;
Akita International University, Akita, Japan.
e-Mail: maryfrancesagnello@aiu.ac.jp

Naoko Araki;
Akita International University, Akita, Japan.
e-Mail: fdomenach@aiu.ac.jp

Florent Domenach;
Akita International University, Akita, Japan.
e-Mail: fdomenach@aiu.ac.jp

How Italian, European and American Frameworks Contribute to Promoting Talent Development in Italian Schools

Lara Milan; Sally M. Reis; Maria Assunta Zanetti; Joseph S. Renzulli
University of Connecticut, USA

Abstract

This article describes current attempts and steps to expand both services and research about gifted education and talent development programs and educational opportunities for academically talented students in Italy. The laws, procedures, and policies that have been essential to this process are described, as is the outcome, which is the implementation and use of the Schoolwide Enrichment Model as one viable method for developing students' talents and gifts in Italian schools.

Keywords: Gifted education; talent development; identification; differentiation; enrichment; acceleration; SEM; Renzulli Learning System.

Introduction

In an increasingly globalized world, our society needs a wide range of skills to succeed in a rapidly changing environment. Societies and economies have experienced significant change; innovative digital technologies have had a significant impact, as many of today's jobs did not exist a decade ago and we do not know what kind of jobs our youths will do in the future. Society and economy rely on creative and competent people to design the solutions to tackle demanding problems that haunt our future while competency requirements are changing. In addition to strong basic skills (literacy, numeracy and basic digital skills), skills such as creativity, critical thinking, entrepreneurship, and executive function, and other problem solving play an increasing role in coping with complexity and change in today's world.

Learning competencies for the future

Some international organizations have identified lifelong learning competences needed for the new world knowledge society, or what the European Community refers to as "Key Competences." These are important and cross-curricular in nature within the curriculum (European Communities, 2007). In the United States, the term, 21st century skills, is often used to describe these competences. The 'key competencies for lifelong learning' refer to the framework approved by the Council and European Parliament in 2006 and the 21st century learning have become increasingly popular (e.g., Partnership for 21st century skills [P21] 2002) within the Education and Training 2010 work program. This framework identifies and defines various key competencies and capabilities that are necessary in our knowledge society and serves as a call to join efforts to ensure the development of a set of competences across all age groups in Europe (Commission for the European Communities, 2008; European Communities, 2007).

Despite some differences in the implementation and assessment approaches of these 21st century competencies (Voogt & Pareja Roblin, 2012), it is encouraging that both European and American approaches to education share a common goal of promoting personal fulfilment and development, employment, and positive citizenship for our youth. These different societies actually agree on a common list of competences, sometimes called the "soft skills," that may suggest a wider perspective on educational offerings in areas such as communication, digital competence, learning-how-to-learn, and social and civic competencies, creativity, and cultural awareness.

A comparison between the European competence framework and the American 21st Century Skills shows common features, as both competence frameworks refer to the need to deal with complexity of the fast-changing world and to respond to the new digital, virtual reality, and technological environments. They both emphasize the development of important affective skills, such as critical thinking, creativity and problem solving. Both frameworks support the development of competence-oriented teaching and learning and suggest how these competences need to be transferable to new contexts. Both frameworks also suggest that a plan is necessary to integrate these competences into school curricula to respond to the need for changes. They also point to the need for new teaching methods and assessment procedures, as well as the need to invest in the education and professional development of staff in order to promote fundamental changes to teaching practices.

Most policy makers believe in the central role of teachers in the implementation of 21st century skills as well as key competences and subsequent need for teacher professional development (Voogt & Pareja Roblin, 2012). The 21st century education movement in the USA relies on a long-lasting tradition of procedures and strategies to help all students reach their full potential, as many of the 21st Century Skills have been integrated into gifted education pedagogy since its inception.

Italy has had minimal expertise in the field of gifted and talented education compared to other European countries but that is beginning to change. The premise of this article is based on a doctoral thesis completed by the first author that challenges the current theoretical and practical point of view, despite any cultural and educational differences, can enable Italian Schools to adapt current American programs and models for talent development. To do that may help to ensure that Italian students can develop a broad set of skills early on in life to develop the country's human capital.

Addressing this challenge will ultimately boost employability, competitiveness and economic growth in our society. Critical thinking, entrepreneurship, problem-solving or digital competences are some of the competences needed to enable Italian students to fulfil their potential and become confident and productive citizens.

Italy's investment in promoting talent development in schools

During the past 40 years, Italy has invested human and economic resources in developing programs, tools and teacher training to meet the educational and emotional needs of students with learning disabilities, neglecting the educational needs of students of uncommon ability and high IQ and creative potential. Italian society's perception of high ability students is that they are already a privileged group who will do quite well without special services. Other research suggests a different scenario and it is clear that some academically gifted students both underachieve in school and drop out of high school (Reis & McCoach, 2000; Renzulli & Park, 2000).

Compared to other European countries, Italy has been slower to respond to the educational needs of high ability students who are under-challenged in schools due to a lack of awareness of their too long ignored educational needs. Italian educational policies over the past four decades have failed to include Gifted and Talented Education while directing available resources to bringing low-performing students up to proficiency.

Educators, school administrators, policy makers, school psychologists, and the popular press all agree that not all students start out on an equal footing, but all educational efforts were directed towards remedial services rather than providing students with uncommon ability to actualize their yet unrealized high potential. Consequently, in Italy a lack of best practices or research in gifted education exists as does an absence of educational tools and even training courses on gifted education and talent development. The moral principle of equity for all students that is a foundational principle of educational policies is all but nonexistent in Italian schools at the present time. Rather, currently, school provisions are more focused on meeting the educational needs of students with learning disabilities, neglecting the urge to address the educational needs of highly able students.

The Italian education system

To better understand the Italian Education System, it may be useful to refer to the text edited by the Italian Eurydice Unit – (Eurypedia, http://www.indire.it/eurydice/eurypedia/) which outlines the Organization, Structure, Administration and Governance at Central and Regional level of the Italian Education System in the Pre-primary, Primary, Lower and Upper Secondary Education. Eurypedia was created in 2011 to offer comprehensive descriptions of the education systems of the 38 countries that took part in the EU's Lifelong Learning Programme. In Italy, every child receives education and training for at least 12 years, between the ages of 6 and 16, as follows:

- pre-primary school (for children between 3 and 6 years of age);
- primary education (for children between 6 and 11 years of age);
- lower secondary school (for children between 11 and 14 years of age);
- upper secondary school (for students from 14 to 19 years of age); and,
- Higher education offered by universities and colleges.

The Italian education system is organized on the basis of the principles of subsidiarity and autonomy of schools. The Ministry of Education, University and Research (MIUR) is responsible for general administration at national level and has exclusive legislative competence for determining the standards of education that must be guaranteed throughout the country. In fact, the Ministry of Education sets the general objectives and quality of the educational services, the subjects to be taught, the learning objectives, the so-called soft skills, and the annual number of teaching hours, the general criteria for student assessment. Schools at pre-primary, primary and secondary levels have teaching, organizational and research autonomy, granted since 2000. Conversely, the Regions have a joint legislative role along with the State on issues related to education. Regions are solely responsible for the planning, management and provision of vocational education and training through recognized institutions. As there are no National Guidelines in Gifted Education in Italy, teachers are not required to access proper training on how to meet the educational needs of gifted children. Therefore, at the local level, each school designs its own Educational Offer Plan (POF) which is approved by the Teachers' Council and represents the cultural and planning identity of the school. It must be consistent with the general and educational objectives set at national level and, at the same time, it must reflect cultural, social and economic requirements at local level. The POF must be approved by the District/School Council and provided to students and their parents on enrolment. Schools are administered by the school manager who is responsible of the direction and deployment of human resources, in order to arrange school activities, assuring the quality of the educational process. According to the National Guidelines for the Curriculum, the general aim of school is the harmonious and comprehensive development of the individual, in keeping with the principles of the Italian Constitution and European cultural tradition, to be achieved through the promotion of knowledge, respect for individual diversity and the active involvement of students and their families. The reference for these new guidelines is the Framework for Key Competences for Lifelong Learning set up by the European Parliament and the Council of the European Union through the Recommendation of 18 December 2006.

Teachers are able to select teaching methods as well as textbooks and teaching tools, which must be consistent with each school's educational offer plan (POF) and the general and educational objectives established at national level. Freedom in teaching is a principle set out in the Italian Constitution (Art. 33). In this respect, any innovation process is to be approved by the Teachers' Council which makes it difficult for any researcher to carry out educational research in schools. This is particularly true when addressing a new subject such as the educational and emotional needs of gifted children.

In schools, pupils are enrolled into class according to their age and students spend their schooling career with their peers. Occasionally, pupils from different classes can be grouped together for special school activities or objectives but there are no resource rooms nor gifted education specialists to provide personalized learning activities to gifted children. A class has a minimum of 15 and a maximum of 26–27 pupils. These limits are not strictly observed as some classes can include up

to 30/32 students. The number of pupils per class is usually lowered to 20, if the class includes students with learning disabilities. There are no pull-out programs for highly able students, nor is there a national definition or identification system for gifted and above average students. No resource rooms nor specialist in gifted education are available and teachers are not asked to plan and present activities that are differentiated to address student's individual interests or enhance their talents.

In Italy, different education models can and should be adopted to meet the diverse educational needs of children with high cognitive potential. Several national and European provisions exist to support these provisions, the most important of which dates back to the last century, as summarized below:

- In 1994 the Council of Europe publishes a "Recommendation 1248" on education for gifted children;
- In 2005 the "Gifted Education in 21 European Schools - Inventory and Perspective" report is published (Mönks & Pflüger, 2005);
- In 2013 The Journal of the European Union, in a discussion entitle "Opinion of the European Economic and Social Committee" discusses "releasing the potential of children and young people with high intellectual abilities in the European Union" (own-initiative opinion) with explicit suggestions based on a plenary session (Garcia-Caro, 2013); and,
- In 2013 The EESC - European Economic and Social Committee states that the problem of children and young people with high intellectual ability is relatively well analyzed thanks to research carried out over several decades and to the existence of an abundant specialized scientific bibliography.

In particular, the Recommendation of 1248/1994 of the Council of Europe was inspired by the workshop "Education of the Gifted in Europe: Theoretical and Research Issues," held in Nijmegen, Holland, in 1991 and supported by the Council of Europe itself. The recommendation states that: gifted children should be able to benefit from adequate teaching conditions, capable of fully developing their potential, in their interest and in the interest of society. No country can afford to waste talents, since it would be a waste of human resources not to identify intellectual or other potentials in time, for which adequate instruments are needed.

In particular, the Assembly reaffirmed: education as a fundamental human right, stating that it should, as far as possible, be appropriate for each individual. Whereas for practical purposes education systems must provide adequate education for the majority of children, there will always be children with special needs and for whom special arrangements have to be made. One group of such children is that of the highly gifted.

The Assembly therefore recommended that the Committee of Ministers ask the competent authorities of the states signatory to the European Cultural Convention to take account of the following considerations in their educational policies.

Point 5 in the Recommendation is more specific on this:

5.1: legislation should recognize and respect individual differences. Highly gifted children, as with other categories, need adequate educational opportunities to develop their full potential;

5.2: basic research in the fields of "giftedness" and "talent" and applied research, for instance to improve identification procedures, should be developed in parallel. Research on the "mechanisms of success" could help to tackle school failure;

5.3: meanwhile, in-service teacher training programming to include strategies for identifying children of high ability or special talent. Information on gifted children should be made available to all those who deal with children (teachers, parents, doctors, social workers, ministries of education, etc.);

5.4: provision for specially gifted children in a given subject area should preferably be arranged within the ordinary school system, from pre-school education onwards. Flexible curricula, more chances of mobility, enriching supplementary material, audiovisual aids and project-oriented

teaching styles are ways and techniques to foster the development of all children, whether highly gifted or not, and enable the identification of special needs at the earliest possible time;

5.5: the ordinary school system should be made flexible enough to enable the needs of high performers or talented students to be met;

5.6: any special provision for highly gifted or talented students should be administered with discretion, to avoid the innate danger of labelling, with all its undesired consequences to society.

In Italy, national educational measures have not been implemented for gifted students, even though actual school regulations make clear reference to the need for promoting the development of students' potential and talents. In 2015, the law n. 107, called "The Good School," sets the grounds for a review of current educational teaching strategies, in particular to support talented students. But the law does not state the need to make all necessary investments in teacher training, as Italian teachers are not presently trained to differentiate the curriculum in order to promote each student's potential.

The Note of the Ministry of Education n. 2805 (December 11, 2015), known as "Educational Flexibility," makes reference to the use of flexible instruments. The goal is to underline and reinforce that the school curriculum and the achievement of the educational objectives cited in the law cannot be realized without a flexible organization such as the stretching of school time, even beyond the usual time frames, within the limits of the resources that the autonomy can guarantee. The adoption of programming methods that enable students to participate in cross-grades groups and level groups could be an effective tool for the implementation of individualized and personalized teaching strategies; one can refer to previous positive experiences adopted for remedial purposes and/or strengthening in curricular and/or extracurricular hours; or based on the peer-to-peer strategy (students groups with an "internal" tutor, chosen among students); to teaching strategies based on cooperative learning; to lab and hands-on activities; to problem solving methodologies; to the introduction of optional courses in the student's curriculum; and to the importance of flexibility in the implementation of an integrated plan in full compliance with the choices of the autonomy of educational institutions. All of these modifications call for profound reflection and a renewed commitment to designing more flexible programming options.

The provisions discussed above could be used to establish the conditions for the implementation of tailored instruction to accelerate and/or enrich the curriculum in order to engage the highly able students in differentiated activities that may suit their learning pace, respecting their learning styles, to prevent underachievement and dropout especially of highly gifted students. Unfortunately this has not occurred.

The purpose of gifted education and talent development programs

Renzulli and Reis believe that the first purpose of education, and in particular of gifted education, is to provide young people with maximum opportunities for self-fulfillment. The second purpose is to increase society's reservoir persons who will help to solve the problems of contemporary civilization by becoming producers of knowledge and art rather than consumers of existing information. If we agree with these two goals of gifted education, and if we believe that our programs should produce the next generation of leaders, scientists, inventors, problem solvers, entrepreneurs, and persons who will make important contributions to all areas of human productivity, then the third purpose is to show the sensibility in modeling special programs and services after the *modus operandi* of these personas rather than after those of good lesson learners. (Renzulli & Reis, 2014).

In Italy, the need to develop students' educational talents and gifts is mainly the concern of some parents of gifted children, and a few researchers and progressive universities. The Ministry of Education, with the Departmental Decree n. 1603 (2018), established a National Technical Committee with the primary purpose of designing national guidelines for gifted children. The LabTalento of the

University of Pavia LabTalento is the only university talent lab in Italy. Its purpose is to help young people with high cognitive skills or a specific ability in an area of talent to fully develop their potential. LabTalento has the following goals:

- Supporting and disseminating research about the nature of giftedness, talents, creativity, and the education of gifted and talented children and their teachers;
- Establishing opportunities for the exchange of ideas, and experiences through teacher training;
- Supporting and enhancing programs, activities and best practices provided for gifted and talented children;
- Supporting and enhancing parent and family education regarding the development of the potential of all children; and,
- Creating an atmosphere of acceptance and recognition of gifted and talented children from any background.

In 2017 an International Agreement between the University of Pavia and the University of Connecticut was signed in order to promote academic research and encourage the intellectual development of Italian scholars in the field of gifted education. The long-lasting cooperation aims at bringing together researchers and professionals coming from different parts of the world through collaborative research projects, resource sharing, and the organization of international conferences.

Over the years, strong collaborations have developed between the LabTalento of the University of Pavia and internationally experienced researchers, in order to create synergies, share models such as The Schoolwide Enrichment Model (SEM; Renzulli & Reis, 1997; 2014; Reis & Renzulli, 2003.). The challenge at the LabTalento in recent years has been to adapt enrichment, acceleration and empowerment programs to the Italian school communities with an inclusive approach, in order to a support students' potential, as suggested by the Renzulli and Reis's SEM motto "A rising tide lifts all ships." Ultimately, the educational challenge of the new policies should be to support the development of potential and talent, in order to achieve equity for academically talented students in Italy.

In 2019, the Bill n. 1607 represents the latest law proposal to provide provisions to recognize the existence of gifted children in Italy, to promote the adoption of personalized teaching plans and to advocate for teachers training on this subject. And recently, the Ministry of Education emanated the note n. 562 (April 3, 2019) that officially includes gifted children in the spectrum of Special Needs. The note states that: gifted students are to be included in the Special Needs group, indicating the possibility of finding customized solutions. If, according to the team of teachers, there are evident manifestations of discomfort and criticality, it is the responsibility of teachers to evaluate the need of a personalized curriculum, to be formally outlined in a PDP (Personalized Educational Plan).

However, three problems emerge from this.

- there is not a national definition, an act or law that defines the characteristics of gifted children;
- a PDP is to be adopted as a remedial approach only to respond to an evident manifestation of discomfort; and,
- the team of teachers who should evaluate the opportunity of planning differentiated strategies are not trained in recognizing the signs of underachievement and have received no training in gifted and talented education.

It seems quite risky to improvise new solutions because there is no expertise nor professional training on this subject. Once again, professional training and the scientific research on the different approaches that have characterized the history of gifted education in other countries could be implemented to help to address the 40 years gap that the Italian school system faces, with the advantage of learning from other countries' experience, including failures and successes. The overview of the field of gifted education, the individuals who influenced the field, the streams of

research and educational practices in the field, including legislation, educational practices, gifted education publications, and advocacy efforts are the grounds of the academic training of a Specialist in Gifted Education, a professional degree that unfortunately does not yet exist in Italy.

Indeed, anyone wishing to understand the options for educating gifted and talented students should review the many models and strategies that exist and these vary widely in the ways they may be used to promote talent development and to meet the needs of gifted students (Renzulli et al., 2009). In general, most existing systems and models are based on a chosen definition of who is gifted and talented. Most of the models focus on meeting gifted students' academic needs, some focus on creativity, a few also include students' social-emotional aspects. Some approaches delve more into differentiation strategies and others into enrichment and/or acceleration strategies; some models are more content-based and others are more process-driven.

The history of gifted education in the United States and Europe teaches us that, throughout time, the most popular intervention programs have proved their effectiveness not only in the United States, but in different educational settings across the world. However, the subject of gifted education is still relatively unknown in Italy. In other countries of the European Community, as well as in the emerging countries, the concern for talent development is more widely acknowledged and is based on the more widely recognized concepts that some people demonstrate abilities or potentials beyond the norm compared to their peers, in various academic, artistic, and creative fields.

Definitions and identification of gifted and talented students in Italy

In Italy there is not an agreed upon definition of giftedness, but which particular conceptions of giftedness are being adopted has important implications for educational practice, as each conception of giftedness brings with it its own set of implications for education. The main criteria for selecting a definition should be which models are both theoretically sound and can also be practically implemented in the Italian school system. Identification is also an issue that comes up for discussions among Italian experts. The history of gifted education teaches us that there is no one right way to identify children as gifted, and modern giftedness researchers emphasize alternative assessments that do not rely solely on intelligence tests, suggesting a trend towards domain-specific conceptions as well as the assessment of co-cognitive traits such as motivation and creativity.

Despite this tendency, in Italy the use of high IQ score is becoming a primary criterion for labelling students as 'gifted.' The reality is that giftedness is a social construction (Borland, 2009). Moreover, there is a general understanding that 'being gifted' means that you have a high IQ. The myth 'once gifted, always gifted' persists among the Italian population, and giftedness is perceived as something permanent, although studies since the early 1970s consistently show that such development is the result of an interaction between the child's genetic endowment and a rich and appropriate environment.

The benchmark for assessing giftedness varies among Italian experts and typically refers to the top 5% of the population with IQs of 120 or higher whereas others refer to the top 2% with IQs of 130—~~o~~r higher. From an international perspective, this approach clings to the misunderstood conception of giftedness that dates back to the pre-1970s literature and before controversy took a new turn and thanks to the research conducted by eminent scholars such as Feldhusen (1988), Gagné (2000), Gardner (1983), Reis (Reis & Renzulli, 1982), Renzulli (1978, 1986), Sternberg (1982), and Tannenbaum (2003). Reis and Renzulli (2009) proposed that no single homogeneous group of gifted children and adults exist, and that giftedness is developmental, not fixed at birth. The work of these contemporary scholars is now widely accepted in the U. S., Europe, and Asia; and it is critical that Italian educators begin conceptualizing giftedness and the types of programming that they imply in order to capitalize on the human capital that these more flexible conceptions will allow us to identify.

To overcome the long-standing controversy between 'gifted' and 'non-gifted' students, some scholars have suggested replacing the term gifted education with "talent development" (Renzulli & Reis, 1997; Treffinger & Feldhusen, 1996). This perspective emphasizes the process of developing

the individual talents of all students, as well as the need of adopting a multi-criterion approach to identify talents, with the consequent promotion of flexible educational programs that respond to the different characteristics of the students.

The European trend toward talent development tends to advocate for an inclusive approach, and this approach helps to overcome some of the criticisms that gifted education has historically experienced such as elitism and the under representation of minority groups and students who learn differently from traditionally prescriptive and memory-oriented teaching practices. Contemporary models now provide a theoretical and practical guide for the development of enrichment and more open educational programs. In the selection process of an educational model for the development of talent it is essential to opt for a flexible system, adaptable to the Italian school settings and to the administration of the Italian school system which presently is not structured to provide differentiated instruction to meet the needs of students that are above grade level in aptitude or achievement.

Comparing gifted education models for use in Italy

Analysis of educational models shows that "the two mega-models," the acceleration initiative developed by Julian Stanley (1971; 1973) and the SEM developed by Joseph Renzulli and Sally Reis (Reis & Renzulli, 1985, 2014; Renzulli, 1977) have defined the major organizational efforts of the gifted education field since the mid-1970s. Both also represent the consistent division in the field between accelerative and enrichment approaches (VanTassel-Baska & Brown, 2007). Although curricular differentiation is considered more of a strategy than a model, it is also a very useful approach that can assure that some of advanced students' curricular needs are addressed in their regular classroom settings. Whether teachers differentiate content, process, products, or the learning environment, this successful approach to instruction can benefit a wide range of student achievement levels, from those with learning disabilities to those who are considered to be high achievers. These three main areas of programming in the field, Differentiation, Acceleration, and Enrichment, are briefly described below.

Differentiation

Differentiated instruction is a useful and practical tool that enables teachers to create opportunities for academic challenge and engagement for all students, avoiding the one-fits-all educational approach. The differentiated classroom creates opportunities for challenging and engaging learning opportunities for all students, that address their specific differentiated instructional needs (Tomlinson et al., 2003). Differentiation can offer students individual opportunities to perform at the appropriate level and be challenged in school. The goal of differentiated instructional strategies is to ensure that all students are engaged and challenged by providing tasks that match their learning needs.

Acceleration

In the Italian School system, students in grades K-10 are allowed to skip one school year during their academic career. Apart from early entrance to school or college and grade skipping, no other acceleration options are allowed in Italy at the present time. *Acceleration* can be referred to as a "vertical curriculum;" it enables students to progress more quickly through academic subjects and content, allowing them either to skip grades and instructional content, to learn at a level that best matches their academic abilities and needs. Some examples of acceleration options are early entrance to school, grade acceleration, subject acceleration, Advanced Placement, dual-enrollment courses, curriculum compacting, distance learning, and opportunities to participate in International Baccalaureate programs.

Enrichment

Enrichment refers to providing richer and more varied educational experiences, and expanding the regular curriculum so that it is modified, extended and broadened to provide greater depth and breadth that is generally provided.

Discussions in gifted education between the approaches of acceleration and enrichment have continued, although it is often now recognized that comprehensive and high quality gifted and talented programs should provide both enrichment and acceleration opportunities. A review of the main schools of thought that characterize the history of gifted education in the United States in the past four decades suggests that these main approaches should be considered in Italy (Milan & Zanetti, 2018). Italian policy makers have taken steps towards the promotion of educational policies to support students with a potential to excel (Pfeiffer, 2012). The professional training and the understanding of the dynamics that generated these major provisions of enrichment, acceleration, and differentiation suggest that the choice for a model to be implemented in Italian schools had to include all these three validated approaches. An approach that combines all three and has begun to be implemented in Italy is The SEM (see Figure 1, Renzulli & Reis, 2014).

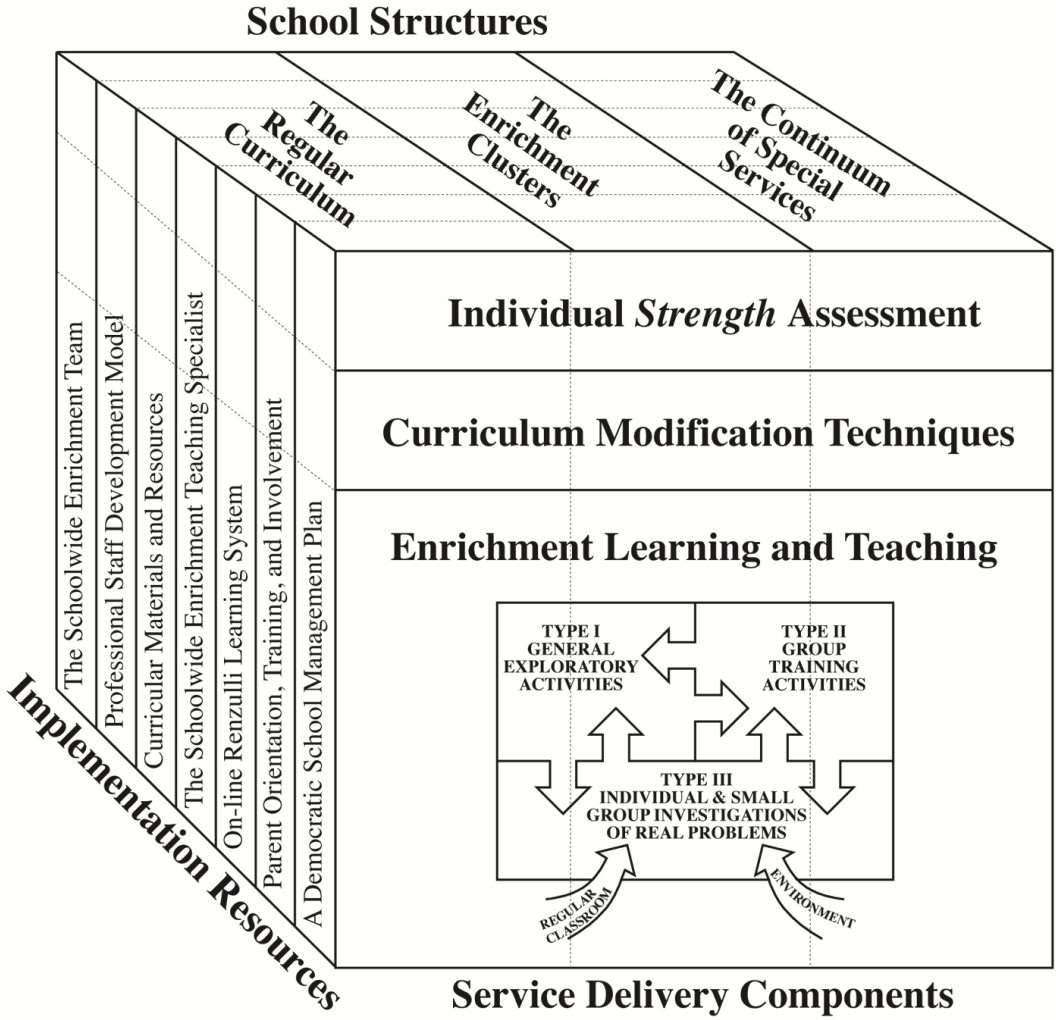

Figure 1: The Schoolwide Enrichment Model (SEM): Combining the Three Main G&T Approaches.

The SEM (see Figure 1, Renzulli & Reis, 1985, 1997, 2014), combines the three primary gifted and talented approaches ~~in Italy~~. It also applies the pedagogy of gifted education to talent development, providing every student with opportunities, resources, and encouragement necessary to achieve the students' individual potential, through the use of differentiation, enrichment and acceleration strategies. Unlike traditional gifted programs, for which identification is regulated by achievement test and IQ cut-offs, the SEM adopts a broadened conception of giftedness (Renzulli, 1986), the Three Rings Conception of Giftedness (Renzulli, 1978), that avoids labelling students as "gifted" and "non-gifted." The identification system in the SEM is based on a variety of measures including: The Renzulli Rating Scales (Renzulli et al., 2013), achievement tests, teacher/parent/self-nominations, as well as alternative pathways. Based on the belief that "a rising tide lifts all ships," the

SEM usually identifies 15–20% of above average ability/high potential students. Indeed, enrichment activities provide gifted children, as well as non-identified students, with opportunities to explore their potentials and uncover their gifts.

Various research studies show highly favorable results for underachieving gifted students when the SEM and the Enrichment Triad Model (Renzulli, 1977) are used as a direct intervention for counteracting underachievement (Baum et al., 1995). The SEM model has been implemented in hundreds of school districts across the USA and around the world and has demonstrated effectiveness under widely differing socioeconomic levels and program organization patterns (Reis & Renzulli, 2003; Renzulli & Reis, 1997, 2014).

The scientific and ethical reasons that guided the suggestion about the use of the SEM for Italian schools includes the body of research that supports this model, either as a whole-school approach or for a program for talent development. The SEM is an inclusive approach and flexible approach and provides practical materials and tools for teachers. As noted, using the SEM can reverse the process of gifted underachievement and prevent students from dropping out of school. The model also supports twice exceptional students (2E; Baum et al., 2014).

Renzulli and Reis have worked to translate their research findings into practical suggestions about identification and programming that work in classrooms (Reis, 2015). In developing theoretical constructs, Renzulli and Reis devoted equal or even greater attention to creating instruments, procedures, staff development strategies, and instructional materials for implementing this model, pursuing a Practice-Research-Theory approach. To provide Italian teachers with resource materials for the implementation of the SEM, the original book 'The Schoolwide Enrichment Model: A How-To Guide for Talent Development' (Renzulli & Reis, 2014) is being translated into Italian and will be shortly available in Italy, as will the 'Scales for Rating the Behavioral Characteristics of Superior Students' (SRBCSS-R), a teacher rating instrument appropriate for use as one measure in the identification process. The Renzulli Scales are among the most popular tool for identifying gifted children in the United States. This standardized instrument is completed by teachers and provides an effective method for identifying gifted children.

The SEM is also equipped with an interactive online program, the Renzulli Learning System, that aids in the implementation of the SEM by matching student interests, expression styles and learning styles with a vast array of enrichment educational activities and resources, designed to enrich gifted and high potential students' learning process. The Renzulli Enrichment Database includes thousands of carefully screened, grade-level appropriate, child-safe enrichment opportunities that are regularly monitored, updated, enhanced and expanded. Students can remain with chronological peers but have ability level enrichment resources delivered to electronically through this Internet based program. It is also helpful for classroom teachers, who can quickly and easily find and infuse/enrichment activities into any and all prescribed curricular topic.

Conclusion

All children benefit from participation in research-based programs for talent development to develop their gifts and talents. Simply stated, gifted and talented education works and G&T programs contribute to developing students' metacognitive knowledge and higher order thinking skills, as suggested by both the European framework and in the 21st Century movement. Due to the sheer number of models in gifted education, the choice of a model that enhances the strengths and abilities of the school population, (including high achieving learners and twice exceptional students), should be guided by some important factors such as:

- an agreed upon and research supported conception of giftedness;
- the availability of numerous research based resources for identification, implementation, and evaluation;
- professional development materials and services including videos and on-line training; and,
- visitation sites and networking vehicles for communicating with other SEM programs.

To ensure the success of any model, professional development must be provided to teachers to promote a mindset that is supportive of gifted education in general, as well as specific training focused an evidence-based gifted education practice of the selected model. Implementation fidelity is a potential moderator of intended benefits of any educational strategy. Implementation fidelity is a potential moderator of intended benefits on any model (Brigandi, 2019).

An enrichment specialist in gifted education plays a key role in implementing this model with fidelity, adhering to recommended structures and processes. Therefore, providing professional training to teachers on the components of any model is key to its success. We recommend that, over time, at least one enrichment specialist is hired in every school in Italy that will implement the SEM. Although this is obviously a very ambitious goal, we will not develop the gifts and talents of our most potentially able young people unless there is a person(s) on the faculty of every school who has the specific leadership responsibility and specialized training that will guarantee that certain highly targeted services are provided.

The research currently being conducted in Italy will be similar to previously conducted American research studies on the SEM (Reis & Renzulli, 2003) to examine how the SEM implementation will work in Italian Public Schools. It will also investigate how an Italian SEM implementation can produce positive changes in student achievement and teacher attitudes toward education of the gifted. We will also produce research about classroom teachers and how they implement the SEM for both high achieving students and the general student population. We anticipate that the implementation of the SEM in Italy will result in favorable attitudes toward special programming for both students and parents. More comprehensive implementation of special programs using the SEM will also provide the opportunities for the types of research that has been conducted in the United States and in other European countries.

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About the Authors

Lara Milan, *Ph.D.*, Specialist in Gifted Education and Talent Development. She implemented for the first time in Italian Public Schools the Schoolwide Enrichment Model for her PhD research study. Founder of SEM Italy (www.semitaly.com), she cooperates with the LabTalento at the University of Pavia. She translated and co-authored the Italian edition of the SEM book.

Dr. Sally M. Reis is the former Vice Provost of Academic Affairs and a Board of Trustees Distinguished Professor at The University of Connecticut. She is past Department Head of Educational Psychology Department, where she also serves as a Principal Investigator for the National Research Center on the Gifted and Talented. She was a teacher for 15 years, 11 of which were spent working with gifted students on the elementary, junior high, and high school levels. She has authored or co-authored over 250 articles, books, book chapters, monographs and technical reports. Her most recent work is a computer-based assessment of student strengths integrated with an Internet based search engine that matches enrichment activities and resources with individual student profiles. Dr. Reis is the Co-Director of Confratute, the longest running summer institute in the development of gifts and talents. She is co-author of The Schoolwide Enrichment Model, The Secondary Triad Model, and Dilemmas in Talent Development in the Middle Years. Dr. Reis serves on several editorial boards, including the Gifted Child Quarterly, and is a past President of the National Association for Gifted Children. She recently was honored with the highest award in her field as the Distinguished Scholar of the National Association for Gifted Children and named a fellow of the American Psychological Association.

Maria Assunta Zanetti, *Ph.D.*, is Associate Professor at the University of Pavia, Department Brain and Behavioral Sciences. She is the director of Lab Talento, the Italian Laboratory of Research and Intervention for the Development of Talent, Potential, and Giftedness at the University of Pavia (www.labtalento) and she is a member of the committee of the Italian Ministry of Education for the development of gifted and talented national guidelines.

Dr. Joseph S. Renzulli is Director of UConn's National Research Center on the Gifted and Talented and Board of Trustees Distinguished Professor of Educational Psychology at the Neag School of Education. A leader and pioneer in Gifted Education, Dr. Joseph S. Renzulli was named among the 25 most influential psychologists in the world by the American Psychological Association. He received the Harold W. McGraw, Jr. Award for Innovation in Education, and was a consultant to the White House Task Force on Education of the Gifted and Talented. His work on the Enrichment Triad Model and curriculum compacting and differentiation were pioneering efforts in the 1970s, and he has contributed hundreds of books, book chapters, articles, and monographs to the professional literature. Dr. Renzulli established UConn's annual Confratute Program with fellow Educational Psychology Professor Sally Reis; the summer institute on enrichment-based differentiated teaching has served more than 25,000 teachers from around the world since 1978. He also Renzulli established UConn Mentor Connection, a summer program that enables high-potential high school students to work side by side with leading scientists, historians, and artists, and is the founder of the Joseph S. Renzulli Gifted and Talented Academy in Hartford, which has become a model for local and national urban school reform.

Address

Prof. Dr. Joseph S. Renzulli;
Director, Renzulli Center for Creativity, Gifted Education, and Talent Development;
University of Connecticut, USA.

e-Mail: joseph.renzulli@uconn.edu

Gender Differences in Teachers' Recognition of Overexcitabilities among Gifted Adolescent: An Experimental Vignette Study of Twice-Exceptionality

Malak Krayem [1]; Anies Al-Hroub [2]

[1] Lebanese Univeristy; [2] American University of Beirut (AUB), Beirut, *Lebanon*

Abstract

The study aims to examine gender differences in schoolteachers' recognitions of overexcitabilities (OEs) among gifted adolescents in Jordan. The participants included 46 (32 female, 14 male) secondary school teachers who teach grades 9 to 12 at the Jubilee School for Gifted and Talented Students in Jordan. The researchers used Experimental Vignette Methodology to explore (EVM) Jordanian teachers' recognitions, and meanings about OEs. Teachers responded to questions of five distinctive vignettes representing the five forms of OE. The study findings indicate that those female teachers were considerably more capable of identifying Emotional, Imaginational, and Sensual OEs in gifted adolescents than male teachers. However, both genders of teachers recognized Emotional OE as the most intense behavior, and Imaginational OE as the least intense behavior. The results were reported and discussed.

Keywords: Overexcitabilities; Gifted Adolescents; Twice-Exceptionality; Gender Differences; Vignettes; Psychomotor; Intellectual; Imaginational; Sensual; Emotional.

Introduction

The school's primary purpose is to provide children with the opportunity to get involved with tasks that help them learn academic, social, and communication skills. Children have a wide range of interests and needs, and every student is a unique individual. Gifted children are more vulnerable due to the asynchronous development of the condition. They have heightened intensity, and their cognitive abilities exceed the norm (El Khoury & Al-Hroub, 2018; Silverman, 1993). In the past, children with special needs were removed from the general classroom and taught in segregated settings. Today, the general education classroom includes students with different abilities and interests (Al-Hroub, 2010, 2013, 2014; Powell & Tutt, 2007). Given the present context of school systems, all teachers are expected to meet student needs, and each child should be considered a unique and whole being. Gifted students are no exception; they ought to be integrated, and their needs fulfilled. Students are labeled as gifted when they have multiple abilities to solve problems or create products that are valued within one or more cultural setting (Gardner, 2000). In addition, gifted students might display unique behavioral characteristics in classrooms. Their desire for gross motor movement, such as moving their bodies around, is an example of such traits (Rinn & Reynolds, 2012).

Dabrowski, a Polish psychiatrist, developed his view of personality development, which he referred to as the Theory of Positive Disintegration (TBD) (Bouchet & Falk, 2001; Dobrowski, 1964). The characteristics of this theory are that some symptoms of mental illness (e.g., neurosis, anxiety) along with person's deficiencies (e.g., nervousness, maladjustment) are seen as positive signs that persons are developing their personality toward their "personality ideal" (Dabrowski, 1964; Dabrowski & Piechowski, 1977). Dobrowski noted that when stimulations are altered, overreactions seem to express themselves through some dimensions. Dobrowski named these reactions overexcitabilities (OEs) with psychomotor, sensual, intellectual, imaginational, and emotional forms. These reactions might last significantly longer, occur with higher frequency, and be expressed

stronger in the gifted child than in the average child (Dabrowski, 1964; Dabrowski & Piechowski, 1977). Table 1 shows the forms and descriptions of OEs.

Table 1: Forms and expressions of overexcitabilities.

OE Form	Expression
Psychomotor	• ***Surplus of energy*** **-** Rapid speech, marked excitation, intense physical activity (e.g., fast games and sports), pressure for action, (e.g., organizing), marked competitiveness. • ***Psychomotor expression of emotional tension*** **-** Compulsive talking and chattering, impulsive actions, nervous habits (tics, nail-biting), workaholism, acting out.
Sensual	• ***Enhanced sensory and aesthetic pleasure*** **-** Seeing, smelling, tasting, touching, hearing, and sex; delight in beautiful objects, sounds of words, music, form, color, balance. • ***Sensual expression of emotional tension*** **-** Overeating, sexual overindulgence, buying sprees, wanting to be in the limelight.
Intellectual	• ***Intensified activity of the mind*** **-** Thirst for knowledge, curiosity, concentration, capacity for sustained intellectual effort, avid reading; keen observation, detailed visual recall, thorough planning. • ***A penchant for probing questions and problem solving*** **-** Search for truth and understanding; forming new concepts; tenacity in problem-solving. • ***Reflective thought*** **-** Thinking about thinking, love of theory and analysis, preoccupation with logic, moral reasoning, introspection (but without self-judgment), conceptual and intuitive integration, independence of thought (sometimes very critical).
Imaginational	• ***Free play of the imagination*** **-** Frequent use of image and metaphor, facility for invention and fantasy, facility for detailed visualization, poetic and dramatic perception, animistic and magical thinking. • ***Capacity for living in a world of fantasy*** **-** Predilection for magic and fairy tales, creation of private worlds, imaginary companions, dramatization. • ***Spontaneous imagery*** as an expression of emotional tension, animistic imagery, mixing truth and fiction, elaborate dreams, illusions**.** • ***Low tolerance of boredom***
Emotional	• ***Feelings and emotions intensified*** **-** Positive feelings, negative feelings, extremes of emotion, complex emotions and feelings, identification with others' feelings, awareness of a whole range of feelings. • ***Strong somatic*** **-** expressions Tense stomach, sinking heart, blushing, flushing, pounding heart, sweaty palms. • ***Strong affective expressions*** **-** Inhibition (timidity, shyness); enthusiasm, ecstasy, euphoria, pride; strong affective memory; shame; feelings of unreality, fears, and anxieties, feelings of guilt, concern with death, depressive and suicidal moods. • ***Capacity for strong attachments, deep relationships*** **-** Strong emotional ties and attachments to persons, living things, places; attachments to animals; difficulty adjusting to new environments; compassion, responsiveness to others, sensitivity in relationships; loneliness. • ***Well-differentiated feelings toward self-Inner dialogue and self-judgment***

Source: (Piechowski, 1999)

There are are several limitations to Dabrowski's Theory of Positive Disintegration (TPD) behind OEs. First, it has limited empirical evidence to support the theoretical framework outside the gifted education and twice-exceptional field. Second, the validity of this theory should be further applied in cross-cultural studies to ensure its universal validity. Third,

Twice-Exceptionality: The case of overexcitability in gifted learners

There is a lack of empirical research related to the prevalence of OEs among gifted learners as compared to non-gifted learners (Mendaglio & Tillier, 2006). In a study by Bouchard (2004), the findings revealed that 76% of gifted children and 42% of non-gifted children showed similar OE

profiles. Interestingly, the two groups differed significantly on Psychomotor and Intellectual OEs, with higher Intellectual OE among gifted students, and higher Psychomotor OE among the non-gifted group. The findings related to Psychomotor OE was supported by Ackerman (1997). Research also indicated that intellectually-gifted adult learners show higher Emotional, Imaginational, and Intellectual OE profiles – big three - than non-gifted adult peers (e.g., Bouchet & Falk, 2001; Miller, Silverman, & Falk, 1994). However, there is a debate on whether OE is a valid construct (Al-Hroub & Krayem, in press). Research indicated that not all gifted display high OEs, even though many gifted learners do display such high OEs (Vuyk1 et al., 2016; Winkler & Voight, 2012).

Gender difference in teachers' recognition of OEs in gifted learners

Teacher recognition is one of the most widespread methods for identifying twice-exceptional learners but is also one of the most troublesome (Al-Hroub & Whitebread, 2008). Research indicated that teachers' perceptions of children with OEs or behavioral problems might vary according to gender stereotypes (Berri & Al-Hroub, 2016c; El Khoury & Al-Hroub, 2018; Maniadaki, Sonuga-Barke, & Kakouros, 2003). A gender gap in OEs exists, and studies emphasize the role that teachers play in identifying and seeking for OEs (Al-Hroub & Krayem, 2018). Studies have found that gifted males showed stronger Psychomotor, Intellectual, and Imaginational OEs than gifted females, whereas gifted females demonstrated stronger Emotional and Sensual OEs (Bouchet & Falk, 2001; Piirto & Fraas, 2012; Siu, 2010; Tieso, 2007; Treat, 2006). Other studies (e.g., Al-Hroub & Krayem, 2018; in press) revealed a significant gender difference in the Psychomotor OE in favor of boys and significant differences in the Sensual, Imaginational, and Emotional OEs in favor of girls. In contrast, no significant gender differences were found in Intellectual OEs.

Research design

The study aimed to examine gender differences stereotypes in schoolteachers' recognitions of overexcitabilities (OEs) in gifted adolescents in Jordan. The study explored teachers' recognition to be able to identify the manifestation and intensity of OEs in five cases of gifted students by using the experimental vignette methodology (EVM). The researchers used EVM to offer an in-depth analysis of the participants' responses. EVM consists of presenting participants with carefully developed and realistic scenarios to assess their perceptions and judgments, therapy, allowing us to manipulate and control independent variables (Aguinis & Bradley, 2014). According to Barter and Renold (1999), "Vignettes may be used for three main purposes in social research: to allow actions in context to be explored; to clarify people's judgments, and to provide a less personal and therefore less threatening way of exploring sensitive topics" (p. 1).

In the current study, EVM provided a valuable technique for exploring Jordanian teachers' judgments, and meanings about OEs, especially that such issues may not be readily measurable or appropriate through other means, such as interviews or focus group discussions. We employed EVM to fulfill three primary purposes:

1. interpretation of the manifestations of OEs in gifted learners;
2. clarification of teachers' recognition of OEs; and,
3. discussion of gender differences in teachers' recognition in comparison with the 'normality' of the vignette.

Method

Participants

The study was done at the *Jubilee School for Gifted and Talented Students*, known as *the "Jubilee Institute"* in Jordan. The teaching staff of the institute consists of about 60 teachers, most of them working full time and others working part-time at the school. Of the 60 teachers at Jubilee Institute, 46 agreed to participate in the study, consisting of 32 females and 14 males who teach grades 9 to 12. The prior attribute of the sample tested revealed that only five teachers out of the 46 had attended ADHD training.

Procedures

Permission to conduct the study was obtained from the school director. Informed consent was obtained from schoolteachers. They were given a full explanation of the study, assured anonymity of their responses, and confidentiality of all data collected. Ethical approval was obtained from the institutional review board (IRB) at the American University of Beirut.

Data collection took place at the Jubilee Institute in Jordan. Teachers were asked to read five vignettes and reflect on them based on what they have studied and the experience they have had with gifted students at their school. Teachers were assured that there are no right or wrong answers when responding to vignettes. This explanation was particularly essential to examine whether their views are consistent or not with the premise presented in the vignettes. Teachers were also given a demographic questionnaire to gather information such as gender, universities attended, and years of experience. The vignettes lasted approximately 20 to 25 minutes to complete.

Vignettes. Female and male teachers' expectations concerning their OE form was assessed using the teachers' responses to questions based on five vignettes representing *twice-exceptional* adolescents. They show high abilities and different forms of OE. The vignettes described five adolescents aged 16 and 17 who showed symptoms that meet the criteria for each of the five forms of OE. Two educational psychology experts in the field of gifted education were consulted to examine content validity. These vignettes enabled us to study not only teachers' recognition of the different forms of OE but also the underlying biases that teachers may show with regards to boys or girls in a Middle Eastern context, specifically in Jordan. For this study, we adopted and modified vignettes developed by Webb in 2016 to support this study. An identical set of six questions accompanied each vignette with only names changed to match the child in the vignette. Teachers provided a rating for questions 1-5 on a Likert-type scale from 1 to 3, with 1 (not at all), 2 (moderately), and 3 (extremely). These were 'How serious was X's behavior? How much would X's behavior hinder his academic progress?' 'How much of X's behavior is common in the Jordanian culture?' 'How ready are you to face X's behavior in your classroom?' 'How stressful would it be to have X as a student?' The last question was, "Is X's case considered a case of ADHD, emotional OE, imaginational OE, psychomotor OE, sensual OE, intellectual OE, or something else?"

The first vignette (V1-Psychomotor_OE) was about a 16-year-old adolescent with Psychomotor OE, who exhibited a surplus of energy, rapid speech, intense physical activity, and interrupted the teacher frequently. The student also showed carelessness and inattention to details, characteristics typical of psychomotor OE (see Appendix 1). ***The second vignette (V2-Emotional_OE)*** was about a 16-year-old adolescent with Emotional OE, who took everything to heart, exhibited strong emotions, and could feel a mixture of different emotions all at once, characteristics typical of emotional OE. ***The third vignette (V3-Imaginational_OE)*** was about a 17-year-old adolescent, who wandered into a kind of imaginary creative world and sometimes mixed up fact and fantasy, characteristics typical of the imaginational OE type. ***The fourth vignette (V4-Intellectual_OE)*** was about a 17-year-old adolescent, who possessed an endless amount of information on specific topics and jumped on to different facts every minute, while the teacher and the rest of the class were still contemplating the very first concept, characteristics typical of intellectual OE (see Appendix 2). ***The fifth vignette (V5-Sensual_OE),*** was about a 17-year-old adolescent who was easily distracted by extraneous stimuli, and sensitive to odors. This adolescent was sensitive to tags on clothes and refused to wear the shirts unless tags are cut from the back. The sixth and last question was addressed to discover if teachers were able to identify the vignettes as cases of OEs, ADHD, or something else.

Research findings

Teachers' recognition of OEs in five vignettes

Teachers' responses to the vignettes were calculated and presented to evaluate the effect of gender stereotypes on teachers' recognition of OEs in gifted adolescents. The teachers' answers

varied to the question: "Is X's case considered a case of ADHD, emotional OE, imagination al OE, psychomotor OE, sensual OE, intellectual OE or something else?". Some answers were consistent with the themes presented in the vignettes, whereas others were different from what was anticipated.

Table 1 shows that of 46 teachers, around one-fourth (26%) stated that Vignette 1 (V1-Psychomotor_OE) has Psychomotor OE. Twenty percent (20%) (9 female teachers) assumed that the behavior was a case of ADHD, while 33% had no idea or judgment on the case. Regarding Vignette 2 (V2-Emotional_OE), 52% answered that the student had Emotional OE, 13% confused it with Sensual OE, and 28% had no idea. As for Vignette 3 (V3-Imaginational_OE), most teachers (61%) were able to identify the characteristics of Imaginational OE. As for Vignette 4 (V4-Intellectual_OE), 44% of teachers' responses were consistent with the intellectual OE presented in the case. For Vignette 5 (V5-Sensual_OE), the findings show that 41% of the teachers were not able to identify the case as someone with the characteristics of sensual OE, whereas 37% had no idea or judgment whether the five vignettes are about OEs.

Table 1: Frequencies and percentages of teacher's responses to the five vignettes.

Form of OE and Teachers Responses	V1-Psychomotor OE		V2-Emotional OE		V3-Imaginational OE		V4-Intellectual OE		V5-Sensual OE	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
ADHD	9	19.6			1	2.2				
Emotional OE	2	4.3	**24**	**52.2**	1	2.2	1	2.2	4	8.7
Imaginational OE	1	2.2			**28**	**60.9**	1	2.2	1	2.2
Sensual OE			6	13.0			1	2.2	**19**	**41.3**
Psychomotor OE	**12**	**26.1**	1	2.2	1	2.2			1	2.2
Intellectual OE	2	4.3					**20**	**43.5**		
Something else	3	6.5	2	4.3	1	2.2	5	10.9	4	8.7
No Idea	15	32.6	13	28.3	14	30.4	18	39.1	17	37.0
ADHD and Psychomotor OE	2	4.3								
Total	46	100.0	46	100.0	46	100.0	46	100.0	46	100.0

Table 2 shows a considerable gender difference in favor of female teachers in identifying Emotional, Imaginational, and Sensual OEs in gifted adolescent students. No substantial gender difference was noted regarding Psychomotor and Intellectual OEs.

Table 2: Gender differences in teachers responses to OEs five vignettes.

OE Forms and Teachers Responses	V1-Psychomotor OE		V2-Emotional OE		V3-Imaginational OE		V4-Intellectual OE		V5-Sensual OE	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Female Teachers	8	25	20	**62.5**	22	**68.8**	14	43.8	**15**	46.9
Male Teachers	4	28.6	**4**	**28.6**		**42.9**	6	42.9	**4**	28.6

Figure 1 illustrates the findings of Table 1 and Table 2. It is shown that teachers, in general, were more capable of identifying Imaginational and Emotional OEs in gifted children than other OE forms. Female teachers' judgment to recognize OEs showed this trend: (*Imaginational* >*Emotional* >

Intellectual > Sensual > Psychomotor), whereas no clear trend was demonstrated for male teachers. Interestingly, responses showed that both male and female teachers had difficulty in identifying Psychomotor OE.

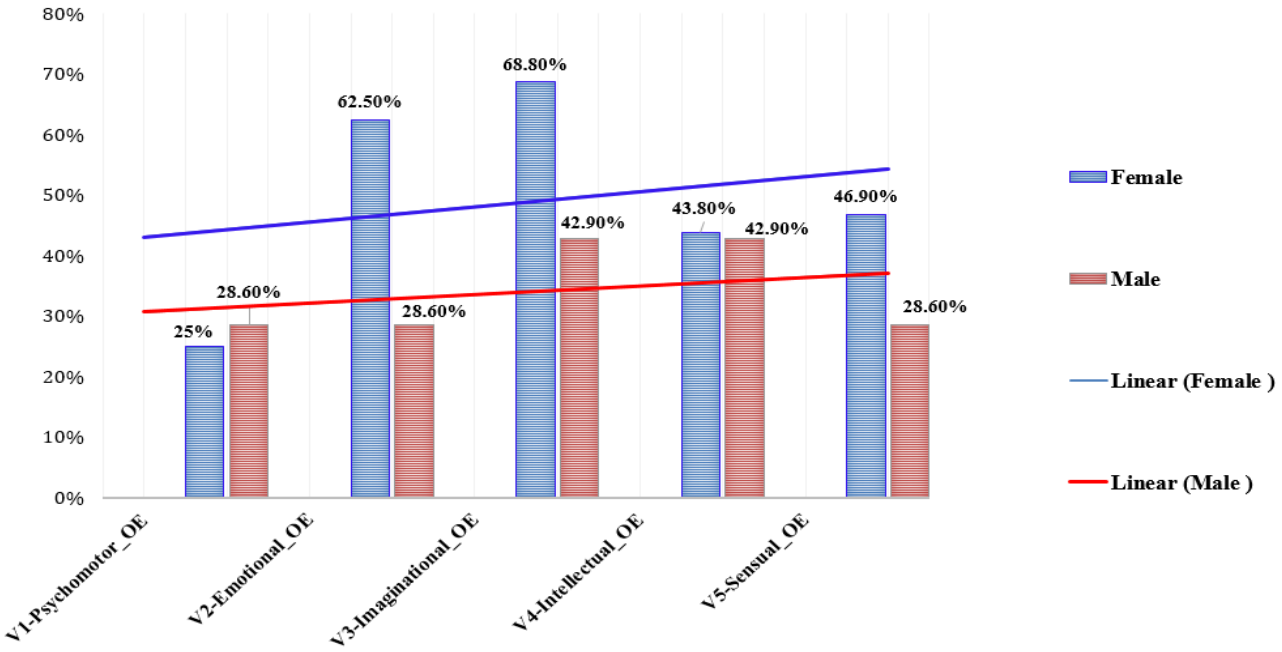

Figure 1: Teachers' recognition in identifications of OEs in five vignettes.

Intensities of OE forms in vignettes of gifted adolescents

Descriptive statistics were employed to report the teachers' mean responses to OE five vignettes (Table 3). The mean of each OE was compared, and it demonstrated that intensities are higher in Emotional OE (*M* = 2.49, *SD* = .626), Sensual (*M* = 2.29, *SD* = .695), and Psychomotor OE (*M* = 2.29, *SD* = .626), followed by Intellectual OE (*M* = 2.18, *SD* = .716), and Imaginational (*M* = 2.11, *SD* = .611) OEs. As for gender, differences were found in the OEs' rank ordering. Female teachers' recognition showed a trend of OEs (*Emotional > Psychomotor > Sensual > Intellectual = Imaginational)* that is different from male teachers' OEs trend *(Emotional > Sensual > Intellectual > Psychomotor > Imaginational)*. It is worth noting that both male and female teachers identified Emotional OE as the most serious and intense behavior. In contrast, Imaginational OE was perceived as the least intense behavior (relatively moderate).

Table 3: Teachers mean responses on 'how serious is the students' behavior?'

Five Vignettes	*N*	*Mean*	*SD*	Gender	*N*	*Mean*	*SD*
V1-Psychomotor - OE	45	2.29	.626	Female	31	2.32	.599
				Male	14	2.21	.699
V2-Emotional - OE	45	2.49	.626	Female	32	2.53	.567
				Male	13	2.38	.768
V3-Imaginational - OE	45	2.11	.611	Female	32	2.13	.609
				Male	13	2.08	.641
V4-Intellectual - OE	45	2.18	.716	Female	32	2.13	.660
				Male	13	2.31	.855
V5-Sensual - OE	45	2.29	.695	Female	32	2.22	.706
				Male	13	2.46	.660

Figure 2 illustrates the findings reported in Table 3 concerning teachers' answers on the question: "How serious is the student's behavior?"

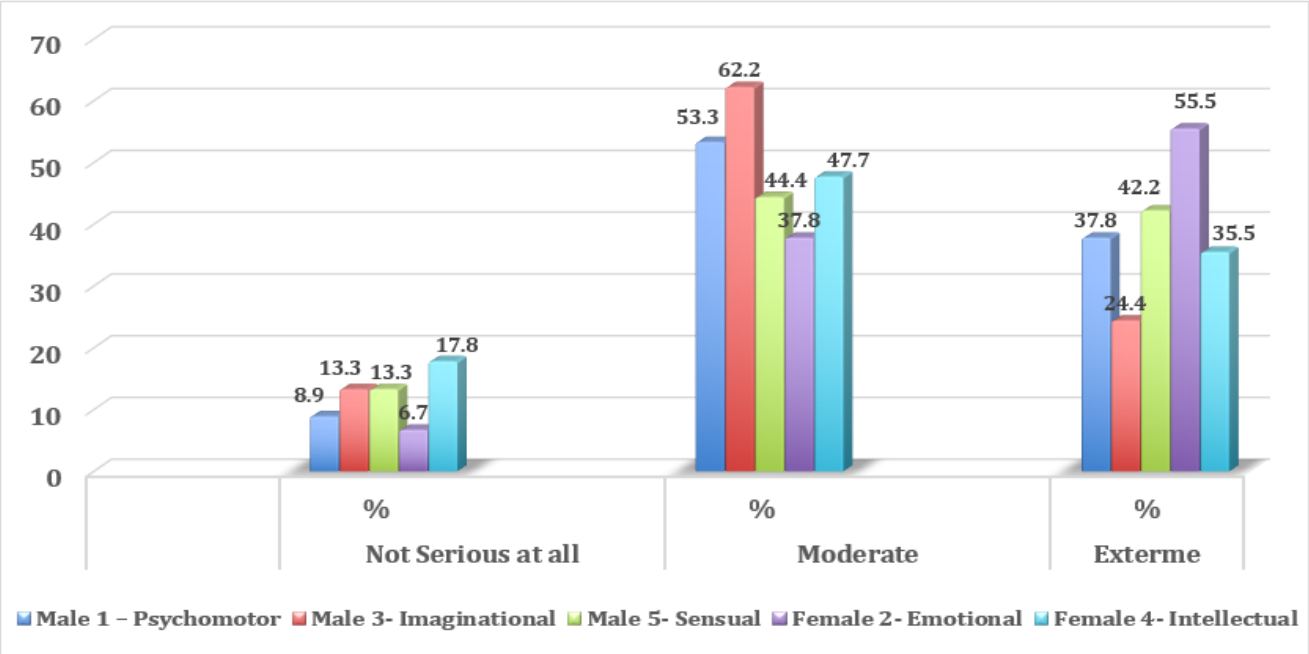

Figure 2: Percentages of teachers' responses to 'how serious is the students' behavior?'

Discussion and conclusions

From the vignettes, it was evident that Jordanian teachers lacked knowledge about OEs and the characteristics of ADHD. Most teachers were unable to identify the differences between Psychomotor OE and Hyperactivity. Also, most teachers showed poor judgment of OEs represented in the five vignettes. Therefore, the problem arises from their pre-service and in-service training, given that only five teachers out of the 46 had previously attended ADHD training, and none had received training on OE. Research (e.g., Shehab & Al-Hroub, 2019; Alias et al., 2013; Bouchard, 2004; Daniels & Piechowski, 2009) indicated that being aware and trained to deal with various forms of OE and ADHD enables teachers and parents to minimize conflict among gifted students and others.

The results of our study have both similarities and differences with previous research ***findings***. For example, the results are consistent with numerous research studies that confuse the characteristics of ADHD with those of Psychomotor OE (Al-Hroub & Krayem, 2018; in press; Rotigel, 2003). This confusion is due to the limited knowledge of OE that could lead to misdiagnosis or mislabeling (Al-Hroub & Krayem, 2018; press; Rotigel, 2003). Interestingly, only female teachers in our study showed this confusion. This confusion could be due to cultural reasons that makes females more vulnerable to social expectations.

It is worth noting that both female and male teachers ranked Emotional OE as the most severe form of OEs. It seems that emotional and behavioral problems are more of a concern to Jordanian teachers. Female teachers considered Psychomotor OE as the second most serious form, whereas male teachers were less concerned about it. Research, in the Middle East, indicated that teachers are usually more tolerant of psychomotor activity or hyperactivity in boys than in girls (Al-Hroub & Krayem; in press; Alkhateeb & Alhadidi, 2016; Berri & Al-Hroub, 2016)

However, since male teachers comprise 30% of the entire sample, this uneven distribution of males versus female teachers might have influenced the results. Interestingly, both male and female teachers' evaluative responses indicated that Imaginational OE (e.g., free play of imagination, capacity for living in a world of fantasy, and spontaneous imagery) is not a severe form rather an

essential quality in gifted children. Therefore, both genders ranked Imaginational OE a moderate intensity that does not reach a critical level to deal with.

Future research could develop assessment tools to better identify twice-exceptional students (e.g., gifted students with OEs) at Jordanian schools. Further Middle Eastern studies are needed to learn about OE from the perspectives of students, parents, and other school stakeholders (e.g., counselors and principals).

Limitations

There were some limitations to this study. First, the study sample was taken from only one Jordanian school catering to gifted adolescent students. Second, the number of female teachers was 2.3 more than that of males, which may have influenced the findings. Third, the study targetted secondary level teachers. A final limitation is related to the small sample size. However, this was beyond our control because the Jubilee Institute is the only school designated for gifted students in Jordan.

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About the Authors

Dr. Anies Al-Hroub is an Associate Professor of Education Psychology and Special Education at the American University of Beirut (AUB). Currently, he is a Visiting Scholar at Renzulli Center for Creativity, Talented Development and Gifted Education, University of Connecticut. Al-Hroub is an elected member of the executive committee for the World Council for Gifted and Talented Children (WCGTC). Al-Hroub research interests focus on giftedness, twice-exceptionality, and psychometric and dynamic assessment. His publications appeared in international gifted and special education journals. His latest book (with Mrs. El Khoury) entitled, "*Giftedness in Lebanese Schools: Integrating Theory, Research, and Practice*" (Springer, 2018).

Malak Krayem is an Educational Psychologist and a Doctoral candidate majoring in Psychology at the Lebanese University. Malak earned her M.A. in Educational Psychology – School Guidance and Counseling from the American University of Beirut (AUB). Krayem is currently working on research related to children experiencing trauma in Canada and Lebanon.

Address

Dr. Anies Al-Hroub;
American University of Beirut (AUB), Department of Education;
P.O Box 11-0236; Beirut, Lebanon.
e-Mail: aa111@aub.edu.lb

Appendix 1

Sample Vignette – Boy 1

Sami is a 16-year old gifted boy. Sami's teacher describes him as showing a surplus of energy that is often manifested in rapid speech, intense physical activity, and a need for action. Sami has difficulty restraining his desire to talk in the classroom and interrupts his teacher frequently. When doing his work, he shows usually shows carelessness and persists to be messy and inattentive to details. Sami's teachers and parents often want to tell him to sit down and be quiet.

1. How serious is Sami's Behavior?

1----------2----------3
not at all moderately extremely

2. How much would Sami's behavioral hinder his academic progress?

1----------2----------3
not at all moderately extremely

3. How much of Sami's behavior is common in the Jordanian culture?

1----------2----------3
not at all moderately extremely

4. How ready are you to face Sami's behavior in your classroom?

1----------2----------3
not at all moderately extremely

5. How stressful would it be to have Sami as a student?

1----------2----------3
not at all moderately extremely

6. Is Sami's case considered as a case of ADHD, emotional overexcitability, Imaginational overexcitability, Psychomotor overexcitability, sensual overexcitability, or Intellectual overexcitability or something else? Please elaborate.

Appendix 2

Sample Vignette – Girl 2

Samar is a 17-year old girl. Samar is a good student with an endless amount of information on specific topics. Samar was in class when the teacher listed several famous individuals on the board. The teacher asked, "Who can tell me something about any one of these people?" Samar listened as others offered simple comments and generally accurate information about the people, but then felt very excited and compelled to add some less well-known details of one artist's life. After she gave an actual but little-known fact, the teacher said that she would have to check into it, because she was not sure it was correct. Minutes later, Samar asked the teacher a question that seemed irrelevant to the topic because she has been thinking of ways it might apply to other situations.

1. How serious is Samar's Behavior?

1----------2----------3
not at all moderately extremely

2. How much would Samar's behavioral hinder her academic progress?

1----------2----------3
not at all moderately extremely

3. How much of Samar's behavior is common in the Jordanian culture?

1----------2----------3
not at all moderately extremely

4. How stressful would it be to have Samar as a student?

1----------2----------3
not at all moderately extremely

5. Do you think that you need to provide Samar with more attention than others?

1----------2----------3
not at all moderately extremely

6. Is Samar's case considered as a case of ADHD, emotional overexcitability, Imaginational overexcitability, Psychomotor overexcitability, sensual overexcitability or Intellectual overexcitability or something else? Please elaborate.

False, Limited, and Authentic Growth Mindsets in Learning: Preliminary Findings from Fourth-Grade Students in Estonia and Finland

Kati Aus
Tallinn University, Estonia,

Elina Kuusisto
Tampere University, Finland

Grete Arro
Tallinn University, Estonia

Kirsi Tirri
University of Helsinki, Finland

Abstract

This study examines whether beliefs about the malleability of intelligence manifest in growth mindset behaviour and improved math achievement among Finnish and Estonian 4th graders. The sample consists of 368 students, 184 from both countries. Results show that the two mindset-instruments being compared—one capturing the generalised implicit beliefs about the malleability of intelligence and the other, more specific mindset-related behaviours—do not assess the same latent phenomenon. In both countries, the general idea of malleability of intelligence seems to have spread among the students. However, mindset profiles show that most students in both countries demonstrate a *mixed mindset* in their behavioural preferences, indicating that widespread notions about the malleability of intelligence do not necessarily manifest in growth mindset behaviour, therefore limiting realisation of students' true potential. In line with theory, students reporting an *authentic growth mindset*, manifesting both in their words as well as behavioural preferences, demonstrated better academic achievement in math. The differences are discussed in the context of growth mindset pedagogy.

Keywords: Implicit beliefs; assessing mindsets; false growth mindset; authentic growth mindset; Finland; Estonia.

Mindsets refer to implicit beliefs that one holds about basic human qualities, such as intelligence. Dweck and Leggett (1988) have identified two meaning-making systems (or *mindsets*) that influence learning processes and motivation. *Fixed mindset* (or an entity view of intelligence) refers to implicit beliefs where intelligence is seen as stable and *growth mindset* (or an incremental view of intelligence) refers to beliefs where intelligence is regarded as malleable and changeable (Dweck, 2000). Studies show that the former leads to avoiding challenging learning opportunities, whereas the latter motivates students to enjoy difficult tasks and rebound from mistakes, helping students realise their full potential and build talent.

The present study was conducted in Finland and Estonia, two countries that demonstrate high academic achievement in the Programme for International Student Assessment (PISA) tests (Gurria, 2016; Schleicher, 2019). The aim was to examine the phenomenon of mindsets about intelligence among Finnish and Estonian 4th graders as this is the age that has been argued to witness an important shift in how internally consistent and reasonably related to other achievement-related cognitions and behaviours students' beliefs have become (Kinlaw & Kurtz-Costes, 2007).

There is a body of evidence showing that mindsets have a role to play in students' academic achievement, math achievement included (Blackwell, et al., 2007; Burnette, et al., 2013; Good, et al., 2003; Paunesku, et al., 2015). Yet, as is evident from studies with parents and teachers (Moorman & Pomerantz, 2010; Park, et al., 2016), mindsets do not always translate into achievement results directly, but rather via mediating factors such as students' academic self-efficacy, achievement goals, effort beliefs, resilience, and reactions to setbacks (e.g., Blackwell et al., 2007; Zeng, et al., 2016). Successful mindset interventions (Aronson, et al., 2002; Blackwell et al., 2007; Good, et al., 2003; Paunesku et al., 2015; Yeager, et al., 2016) as compared to those not so successful (Burnette, et al., 2018) have hence been sure to back growth mindset messages with practical knowledge about how to stretch one's abilities via effort and effective learning strategies and about putting mindset messages into practice in everyday schoolwork (Sun, 2015; 2018).

Mindset researchers have most often addressed and surveyed students at times of difficult academic transitions in middle school (Blackwell et al., 2007; Good et al., 2003), high school (Yeager, et al., 2016) or college (Aronson et al., 2002), as these transitions are universally characterised by significant drops in student motivation and subsequently also retention. Yet, mindset-milestones affecting students' learning are already evident in lower grades (Zeng, et al., 2016). Math programs are known to become increasingly abstract and therefore cognitively more demanding already during the 4th grade (Tsang, et al., 2015). As children's thinking at that age has been argued to go through an important shift in gaining consistency in achievement-related cognitions and behaviours (Kinlaw & Kurtz-Costes, 2007), associations formed at that time could leave children vulnerable to fixed mindset messages during difficult transitions in the higher grades. This might be especially true in math, the subject area claimed to communicate the strongest fixed ability messages and thinking (Boaler, 2010; Jonsson, et al., 2012). With that in mind the current study focuses on 4th grade students' mindsets, mindset-related behavioural task preferences and math performance.

Assessing the mindsetThis study sheds light on the assessment of the mindset phenomenon among young students. Several instruments have been developed to assess mindsets but the task has been challenging as mindsets represent implicit and dynamic meaning making systems. Although people tend to have a dominant mindset, studies have found domain-specificity (Kuusisto, et al., 2017b) and situational variation in the actualization of the mindsets (Rissanen, et al., 2018).

Assessing mindsets with the traditional instrument by Dweck (2000) has been shown to be relevant for predicting academic performance (Blackwell, et al., 2007; Claro, et al., 2016; see also Zhang, et al., 2017c). Still, more nuanced instruments have been found useful to estimate the associations between mindset and actual behaviour (Aus, et al., 2017a; Haimovitz & Dweck, 2016). Aus, et al. (2017a) showed that better discriminant and predictive power was achieved when teachers were asked not only about their beliefs about the malleability of intelligence but also their views on whether students need to be academically gifted and possess an inborn set of characteristics to be successful in school (Leroy, et al., 2007). Also, Haimovitz and Dweck (2016) conclude that whereas adults' self-reported mindsets are linked to their parenting or teaching practices, the mindsets of parents and educators measured with Dweck's instruments *per se* do not predict the mindsets of their children or students (e.g., Good & Dweck, 2012; Haimovitz & Dweck, 2016; Moorman & Pomerantz, 2010; Park, et al., 2016; Rattan, et al., 2012). Instead, it has become evident that mindsets reported as such may not be activated in day-to-day situations, where perhaps more automatic behavioural reactions become dominant. For example, one might know and believe that intelligence is malleable but in challenging situations fixed mindset behaviour might take over (Haimovitz & Dweck, 2016; 2017). It may be especially true for individuals holding a mixed mindset, characterised by uncertainty and endorsing neither fixed nor growth mindset statements to their fullest (Claro, et al., 2016; DeLuca, et al., 2019). It is also possible that for children and students their vague ideas about the malleability of intelligence might not necessarily manifest in growth mindset choices in their everyday study behaviour.

Previous intervention studies have shown that when children's mindsets are primed

it affects their behavioural preferences, e.g., process feedback has resulted in children choosing difficult tasks over easier ones and person feedback has been shown to lead to opposite behaviour (Mueller & Dweck, 1998). However, it should be noted that these studies have utilized task-specific priming of the mindsets in artificial contexts, regardless of the dominant mindset of the students.

Items of the Dweck's (2000) original instrument were designed to study mindsets of ten-year-olds and older. However, since mindsets develop in early childhood, Gunderson et al. (2013) created a scale that small children of seven and eight years can answer. It was aimed to measure beliefs about the stability of intelligence, academic abilities, and preference for difficult and easy tasks. Park et al. (2016) refined the instrument further and utilized a six-item version of it. These studies indicate that Gunderson et al.'s (2013) scale is a valid tool to measure mindsets. Still, it seems that there is a need to develop the instrument further to improve reliability of the scale. In previous studies Dweck's (2000) and Gunderson et al.'s (2013) instruments have not been paralleled and it has not been investigated whether they truly assess the same phenomenon with the first being more abstract and the latter more behaviourally specific in nature. Therefore, combining the two measures would provide useful for tackling the more abstract as well as the concrete and behaviourally specific attributes of mindsets in students.

Finnish and Estonian educational systems as the context of the study

The present study was conducted in two countries, Finland and Estonia. Whereas Finland has enjoyed a long history of being regarded as one of the top-performing countries in education, Estonia has begun showing comparable results in the recent decade. According to the most recent PISA results in reading, mathematics and science both Finland and Estonia are considered to be leading countries in education (Gurria, 2016; Schleicher, 2019). The educational system in the two countries is quite similar; compulsory formal education consists of nine years of comprehensive school and children start school from the age of seven. In both countries primary education begins with a class-teacher system, which means that children most often study the main subjects with the same teacher during the first three to four school years. Master-level education is expected of teachers in both countries; studies in educational science cover about half of the whole teacher training study program—demonstrating more consistent structure in Finnish than in Estonian programs though—and the concept of research-based pedagogical thinking is a priority in both countries (Jakku-Sihvonen, et al., 2012). It is relevant to note that the consistency and sustainability of the quality of teacher education programs in Estonia has gone through some noteworthy interruptions due to changes in the political arena and a recognizable number of teachers in Estonia have received their education under the Soviet regime (Jakku-Sihvonen et al., 2012; Ruus & Timoštšuk, 2014). However, current teacher training curricula in Finland and in Estonia emphasize constructivist learning theories, child-centred teaching methods and individualisation of instruction.

The national basic school core curricula are also rather similar in the two countries, both in academic demands as well as in stating the importance of supporting general or transversal competencies of students (Estonian Government, 2011/2014; Finnish National Agency for Education, 2014). Both Estonian and Finnish educational policies similarly emphasize the importance of school curriculum development, which means that although both countries have specified their national core curricula, the schools are expected to adapt the curricula to the needs and possibilities of specific school contexts and to draft more individualized curricula in the framework of the national core curriculum.

Curricula in Finland and Estonia do not mention Dweck's growth mindset theory *per se* but nevertheless, both highlight a process-focused approach to learning. Recent PISA results reveal that Estonia has the highest percentage of students who reportedly believe that intelligence is malleable (Schleicher, 2019). At the same time, it seems that the Finnish *National Core Curriculum for Basic Education* is built more explicitly on the core elements of the growth mindset pedagogy than the Estonian *National Curriculum for Basic Schools* (Rissanen, et al., 2019; Estonian Government, 2011/2014; Finnish National Agency for Education, 2014). For example, teachers are expected to

give process-focused feedback, to emphasize the positive role of mistakes in learning, to foster mastery orientation by comparing students' achievement with their own previous achievements not with other students' success, and to consider students' individual development (Finnish National Agency for Education 2014, pp. 47–48). At the same time, Dweck (2015, 2016) in her public statements has cautioned against a *false growth mindset* that refers to oversimplified interpretation and application of the growth mindset theory in schools indicating that both teachers and students should not only use growth mindset rhetoric but also recognise the behaviours and strategies that truly support growth and development.

In this study we investigate the mindsets and math achievement of students from Finland and Estonia – two similar, yet different countries. The present study focuses on examining 4th grade students' mindsets about intelligence with Dweck's (2000) and Gunderson et al.'s (2013) scales by answering the following research questions:

1. To what extent do the two different mindset-instruments measure the same phenomenon?
2. How do Finnish and Estonian students' mindsets and behavioural preferences related to difficult and easy tasks differ?
3. How do different mindset profiles manifest in math achievement?

Data and methods

Participants

The sample consisted of 368 fourth grade students; 184 from Finland (n_{girls}= 87) and 184 from Estonia (n_{girls}= 97). Both sets of data were collected as part of other ongoing studies. School leaders and individual class-teachers in both countries were asked beforehand for their consent to participate. Also, parents of the students were asked for their written consent and the children were informed that their participation was voluntary. In both countries the students filled out electronic questionnaires during their regular school-hours. The testing was supervised by the class teachers in Finland and by researchers in Estonia.

The sample in Finland was gathered from two schools, one located in a medium socioeconomic status area and one in a low one in Helsinki (Vilkama, et al., 2014), the capital of Finland. In the seven parallel classes the average class size was 20 (min. 17, max 22). The sample in Estonia was gathered form three schools. Two of the schools were located in Tallinn, the capital city, and the third school in the outskirts of Tallinn. One of these Estonian schools has classes for which students apply and the most talented are chosen. In all eight parallel classes, the average class size was 23 (min 18, max 28).

Measures

The measures for students' mindsets and mindset-related learning behaviours were based on two instruments; Dweck's (2000) traditional 4-item measure of the fixed view of intelligence (e.g. Zhang, et al., 2017c; 4 items, $\alpha = .80$) and the mindset instrument used by Gunderson et al. (2013; 18 items, $\alpha = .61$) as well as Park et al. (2016; 6 items, Omega = .70).

Mindset about Intelligence

Mindset about intelligence was assessed using the traditional instrument by Dweck (2000). As data were collected as part of other ongoing studies, Dweck's items in Finland were evaluated on a scale from 1 to 6 (1= totally agree, 6= totally disagree) and in Estonia from 1 to 5 (1= totally agree, 5= totally disagree). Examples of Dweck's items: "You have a certain amount of intelligence, and you really cannot do much to change it" and "You can learn new things, but you cannot really change your basic intelligence". The higher the score, the more the student endorsed the idea of intelligence being malleable.

Disliking Easy Tasks

Disliking easy tasks was evaluated with a single item "How much would you like to solve tasks that are very easy so you can get a lot right?" from Gunderson et al.'s (2013; Park et al., 2016)

instrument on a scale from 1 to 5 (1 = totally disagree, 5 = totally agree). The answers were reverse-coded so that a higher score reflected preferences theoretically linked to a growth mindset.

Liking Difficult Tasks

Liking difficult tasks was evaluated with a single item "How much would you like to solve tasks that are very hard so you can learn more?" from Gunderson et al.'s (2013; Park et al., 2016) instrument on a scale from 1 to 5 (1 = totally disagree, 5 = totally agree).

In translations, both into Finnish and Estonian, the Gunderson et al.'s word "maze" was replaced with "task" to better fit the everyday school context. Higher scores reflected preferences theoretically linked to a growth mindset.

Students' Math Achievement

Students' math achievement was examined with marks of mathematics that were obtained from students' report cards in Spring preceding the data collection in Autumn. The marks were based on teachers' evaluations of examinations and classroom activities. In Finland, fourth graders were assessed in the first school using a scale from 4 to 10 (4 fail, 5 lowest passing mark, 10 highest mark) and in the second school a 5-level scale was utilized (lowest evaluation "You have not achieved your goals yet"; highest evaluation "You have achieved your goals excellently"). The evaluation covered three different areas of mathematical skills, thus, the marks in the second school were based on the mean scores of the three verbal evaluations. In Estonia, the grading system scaled from 2 (*weak*) to 5 (*excellent*).

Analysis strategy

Statistical packages IBM SPSS Statistics 24 and Mplus version 7 were utilized.

Confirmatory factor analysis for determining the factor structure of the mindset items was conducted with Mplus 7.0 (Muthén & Muthén, 1998–2015) using a full information maximum likelihood (FIML) method as there were a small number of missing values on some of the item-level variables. The unstandardized loading for the first indicator on each factor was set to 1.0 to establish the metric of the latent variable. Based on the recommendations from Brown (2006, pp. 103–149), the factor models were checked for model fit indices as well as the interpretability, size, and statistical significance of different parameter estimates (factor loadings and factor variance estimates).

The model fit was evaluated using the χ^2 test statistic, root mean square error of approximation (RMSEA), and comparative fit index (CFI). Models are generally deemed acceptable when the χ^2 value is non-significant ($p > .05$), RMSEA has a value of .05 or less (Browne & Cudeck 1993, pp. 136–162) and CFI is .95 or above (Hu & Bentler 1999).

Latent profiles analyses (LPA) was also conducted with MPlus 7.0. Profiles were based on students' reported mindsets and their preferences for easy or difficult tasks. LPA results were evaluated by fit indicators and theoretical background. Minimum values of Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (aBIC) were considered, along with entropy and Vuong-Lo-Mendell-Rubin Likelihood Ratio test (VLMR) values (Dziak, et al., 2019). When comparing pairs of models, a model with a smaller value of AIC, BIC and aBIC is considered better (Dziak, et al., 2019) and entropy with values approaching 1 indicate clear delineation of classes (Celeux & Soromenho 1996).

The analyses were carried out separately for the Finnish and Estonian samples as the response scale for Dweck's items differed in the two countries and the grading systems do not allow for combining the data. Scores standardized on the country level were used in all analyses.

Results

Confirmatory Factor Analysis on Dweck's and Gunderson et al.'s Mindset Instruments

We first tested whether the two mindset instruments can be regarded as measures of the same general phenomenon of implicit beliefs about intelligence. We used the four fixed mindset items traditionally used from Dweck's instrument. For the scale from Gunderson et al., researchers have previously found that the instrument shows better internal consistency when shortened to a 6-item format that covers two aspects: preference for easy/difficult tasks in mazes, math problems, and spelling as well as fixed ability beliefs (Park et al. 2016). We transformed the responses on each item into a standardized z-score (M = 0, SD = 1) separately for two samples and used the standardized scores to evaluate the structure of the two mind-set instruments via confirmatory factor analysis.

While testing the possible fit of a model with all 10 items (4 Dweck items and 6 Gunderson et al. items) belonging to the same latent factor, we found that the overall model fit for a 1-factor solution for the Finnish sample was poor ($\chi^2(35) = 61.44$, $p = 0.004$, RMSEA = 0.06, CFI = 0.866). All the items belonging to the Dweck scale showed standardized factor loadings that were statistically significant and higher than the suggested limit of .30 (ranging from .62 to .79), but factor loadings for the items from the Gunderson et al. scale fell under the acceptable limit of .30 (Brown, 2006) and also failed to reach statistical significance for half of the items. Model fit for a 1-factor solution for the Estonian sample was poor to acceptable ($\chi^2(35) = 48.52$, *ns*, RMSEA = 0.05, CFI = 0.927). Again, all the standardized factor loadings were statistically significant and ranging from .50 to .94 for the Dweck items but fell under the acceptable limit of .30 for all the Gunderson et al. scale items and none of the factor loadings in Gunderson et al. scale reached statistical significance.

As evident from previous analysis, the two scales could not be regarded as measuring the same latent phenomenon. Hence, we tested the possible factor structure with the two original scales forming two separate latent factors. The overall model fit for a 2-factor solution for the Finnish sample was again poor ($\chi^2(34) = 62.85$, $p = 0.002$, RMSEA = 0.07, CFI = 0.854). The latent factor comprising four items of the Dweck scale showed statistically significant variance and the standardized factor loadings of the items were statistically significant and ranged from .62 to .79. For the Gunderson et al. scale, only two factor loadings were higher than .30 (.40 and .63), but neither reached statistical significance. Model fit for a 2-factor solution for the Estonian sample was overall acceptable ($\chi^2(34) = 41.849$, *ns*, RMSEA = 0.04, CFI = 0.958). As was the case in the Finnish sample, all the standardized factor loadings for the Dweck items were statistically significant and ranged from .49 to .85. The variance of the latent factor was also statistically significant. For the Gunderson et al. scale, only two of the six factor loadings reached statistical significance and were higher than .30 (.38 and .56 for items tapping disliking easy tasks and liking difficult tasks, respectively).

As such the final model tested for both samples included 4 Dweck and 2 Gunderson et al. items forming two separate latent factors. The overall model fit for the 2-factor solution for the Finnish sample was acceptable ($\chi^2(8) = 13.95$, *ns*, RMSEA = 0.06, CFI = 0.963). The latent factor comprising four items of the Dweck scale showed statistically significant variance and the standardized factor loadings ranging from .63 to .79 were statistically significant. For the Gunderson et al. items, both factor loadings reached statistical significance at .31 and .64. Model fit for a 2-factor solution for the Estonian sample was good ($\chi^2(8) = 3.391$, *ns*, RMSEA = 0.00, CFI = 1.000). All the standardized factor loadings for the Dweck items were statistically significant and ranged from .43 to .85. The variance of the latent factor was also statistically significant. For the Gunderson et al. items, both the factor loadings reached statistical significance ($p < .05$) and were higher than .30 (.36 and .64 for disliking easy tasks and liking difficult tasks, respectively). The variance of the latent factor was not statistically significant though ($p = .32$).

All in all, confirmatory factor analysis showed that Dweck's and Gunderson et al.'s instruments do not measure the same phenomenon and Gunderson et al.'s items show strong multidimensionality. Based on preliminary results we averaged the standardized scores of the four items from the Dweck scale (2000) to form a composite measure of a growth mindset for the Finnish (M = 0.0, SD = 0.78,

range = −1.83 to 1.44; Cronbach α = .78) as well as the Estonian sample (M = 0.0, SD = 0.78, range = −2.77 to 1.52; Cronbach α = .77). Gunderson et al. scale items' statistical estimates were not acceptable though and could not be regarded as a single coherent phenomenon. The two items concerning disliking easy and liking difficult tasks showed acceptable factor loadings, but the internal reliability of the scale was too weak (Cronbach α = .33 for the Finnish and α = .39 for the Estonian sample).

As it has been argued that for some concrete constructs that are very narrowly (e.g., behaviourally) defined, single-item measures show predictive validity comparable to that of multiple-item measures (Bergkvist, 2015; Loo, 2002), we decided to use preference for easy or difficult items from the Gunderson et al.'s scale as two separate items in further analyses. The decision is theoretically backed by Mueller and Dweck's (1998) seminal findings indicating that mindsets manifest in behavioural preferences for either avoiding or approaching challenges. Finnish students reported higher levels of disliking easy tasks than Estonian students, $t(346) = 7.75$, $p < .001$, $d = 0.83$ and also liking difficult tasks, $t(345) = 3.12$, $p < .01$, $d = 0.34$.

Hence, in further analyses we will concentrate on three indices of the mindset phenomenon: mindset about intelligence (a sum score of the four items from Dweck (2000)), student's preference for easy tasks (a single item from Gunderson et al., 2013, hereafter *disliking easy tasks* since the scale was reversed for interpretational purposes), and student's preference for difficult tasks (a single item from Gunderson et al. (2013), hereafter *liking difficult tasks*).

Table 1: Descriptive statistics and bivariate correlations.

	Finnish sample ***M (SD)*** **n = 184**	**Estonian sample** ***M (SD)*** **n = 184**	1.	2.	3.	4.
1. Mindset about intelligence Dweck (2000)	3.25 (.96) (scale 1 – 6) α = .78	3.59 (.73) (scale 1 – 5) α = .77	–	.09	.13	.21**
2. Disliking easy tasks Gunderson (2013)	3.10 (1.16) [a] (scale 1 – 5)	2.19 (1.05) [a] (scale 1 – 5)	.22***	–	.24**	.17*
3. Liking difficult tasks Gunderson (2013)	3.50 (1.04) [b] (scale 1 – 5)	3.14 (1.14) [b] (scale 1 – 5)	.09	.19**	–	.25**
4. Math achievement	8.41 (1.25) (scale 5 – 10)	4.22 (.69) (scale 2 – 5)	.23***	.12	.24***	–

Notes: p* < .05, p** < .01, p*** = .001, two-tailed; correlation coefficients for the Finnish sample below the diagonaal; means that share superscripts [a] differ at $p < .001$ and superscripts [b] at $p < .01$.

Associations of Finnish and Estonian students' mindsets and task preferences with math achievement

Math achievement showed statistically significant correlations with reported mindset and liking difficult tasks for both Finnish and Estonian students, and marginally significant associations with disliking easy tasks only for the Estonian students (see Table 1). Mindset and liking difficult tasks remained significant predictors of math achievement also in multivariate regression models for both samples. The three predictors together explained ten percent of variance in math achievement in both countries (see Table 2), meaning that the same proportion of differences in math achievement in both countries can be attributed to mindset and mindset-related behaviours.

Table 2: Predictors of math achievement – multiple regression results.

	B	***SE B***	**β**	***t***	***p***	**VIF**
Finnish sample						
Mindset about intelligence	.25	.10	.20	2.53	.01	1.07
Disliking easy tasks	.02	.08	.02	.31	.76	1.09
Liking difficult tasks	.21	.08	.21	2.78	.01	1.05
Estonian sample						
Mindset about intelligence	.22	.09	.17	2.34	.02	1.02
Disliking easy tasks	.11	.08	.11	1.40	.17	1.07
Liking difficult tasks	.20	.08	.20	2.62	.01	1.08

Notes: $R^2 = 0.10$, $F(3, 166) = 5.33$, $p = .001$ (Finland); $R^2 = 0.10$, $F(3, 172) = 6.41$, $p < .001$ (Estonia)

Profiles based on students' reported mindsets and disliking easy or liking difficult tasks

In order to tap deeper into the mindset-related phenomena of individual children, a person-centred approach in the form of latent profile analysis (LPA) was utilised. Mindset profiles were created using standardised scores of the three mindset variables (see Table 1). Children with missing data on one or more variables were deleted, leaving the sample with 172 Finnish and 176 Estonian students. As children were nested within classes, LPA analyses were performed as mixture missing complex models where cluster was the students' class ID.

A latent profile model with four profiles for both samples was deemed best relying upon different statistical indicators (see Table 3). For the Finnish sample, the minimum BIC value supported the model with four profiles. However, the AIC and aBIC values did not stop decreasing. For deciding upon the best fitting model, other indices of classification quality were also inspected. Average latent class probabilities and classification probabilities for most likely latent class membership as well as entropy values supported the model with four profiles. For the Estonian sample, all indicators supported the best fit to data for the four-profile model (see Table 3).

Table 3: Fit Indicators of Latent Profile Models.

Country	**No of profiles**	**AIC**	**BIC**	**aBIC**	**Entropy**
Finland (*n* = 172)	2 (80,92)	1364.235	1395.710	1364.045	.652
	3 (47,89,36)	1359.435	1403.500	1359.169	.774
	4 (50,23,66,33)	**1219.958**	**1276.613**	**1219.616**	**.995**
	5 (23,50,66,16,17)	**1216.556**	**1285.801**	**1216.139**	**.962**
	6 (37,23,50,17,29,16)	1218.815	1300.650	1218.321	.875
Estonia (*n* = 176)	2 (110,66)	1392.427	1424.132	1392.464	.805
	3 (51,110,15)	1389.199	1433.586	1389.251	.812
	4 (45,53,57,21)	**1076.816**	**1133.885**	**1076.883**	**1.000**
	5 (53,55,45,2,21)	1077.378	1147.129	1077.460	.986

Notes: The numbers in brackets represent the number of individuals in each profile. AIC = Akaike information criterion; BIC = Bayesian information criterion; aBIC = sample-size-adjusted BIC.

Based on the means of the three variables and previous research on mixed mindsets (Claro, et al., 2016; DeLuca, et al., 2019; Dweck, 2015) the four profiles were named as: *false growth mindset, limited growth mindset 1*, *limited growth mindset 2*, and *authentic growth mindset*. Figures 1 and 2 illustrate the similarities and differences of the standardised means of the latent profiles for the Finnish and the Estonian students respectively. To examine how latent profiles in different countries differed in children's general mindset about intelligence, disliking easy tasks, and liking difficult tasks, we conducted separate one-way analysis of variance (ANOVAs).

In the Finnish sample the profiles did not differ in children's mindset about intelligence $F(3, 168) = 0.97$, *ns*, but the results indicated significant differences for disliking easy tasks, $F(3, 168) = 2.77$, $p < .05$, $\eta_p^2 = 0.05$, and liking difficult tasks, $F(3, 167) = 2033.43$, $p < .001$, $\eta_p^2 = 0.97$. Liking difficult tasks compared to liking easy tasks showed considerably stronger discriminating power between profiles in Finnish students. In the Estonian sample the profiles did not differ in children's mindset about intelligence $F(3, 172) = 0.42$, *ns*, but the results indicated significant differences for disliking easy tasks, $F(3, 172) = 5968.43$, $p < .001$, $\eta_p^2 = 0.99$ and liking difficult tasks, $F(3, 172) = 3.82$, $p < .05$, $\eta_p^2 = 0.06$. In the Estonian sample disliking easy tasks discriminated best between profiles. Results from post hoc analyses are specified in Table 4.

Table 4: Descriptive statistics of the four mindset profiles in Finnish students (z-scores).

	False growth mindset ***M(SD)***	**Limited growth mindset 1** ***M(SD)***	**Limited growth mindset 2** ***M(SD)***	**Authentic growth mindset** ***M(SD)***	***F* value**
Finland					
Number of students	23 (13.5%)	66 (38.1%)	50 (29.2%)	33 (19.3%)	
Mindset about intelligence	.02(.69)	.00(.75)	–.01(.81)	.25(.79)	*ns*
Disliking easy tasks	–.31(1.04)	–.16(.99)^{c}	.26(.80)^{c}	.15(1.18)	2.77*
Liking difficult tasks	–1.74(.45)^{a}	–.49(.00)^{a}	.48(.00)^{a}	1.44(.00)^{a}	2033.43**
Math achievement	–.42(.99)^{b}	–.19(.94)^{c}	.13(.92)	.35(1.08)^{bc}	3.811*
Estonia					
Number of students	57 (32.4%)	53 (30.1%)	45 (25.6%)	21 (11.9%)	
Mindset about intelligence	–.07(.87)	.01(.67)	.06(.83)	.12(.65)	*ns*
Disliking easy tasks	–1.13(0)^{a}	–.17(.00)^{a}	.78(.00)^{a}	1.84(.29)^{a}	5968.43**
Liking difficult tasks	–.17(1.06)^{d}	–.14(.85)^{b}	.12(.94)	.60(1.08)^{bd}	3,821*
Math achievement	–.21(.95)	.13(.99)	.11(.98)	.33(.96)	*ns*

Notes: * $p < .05$ ** $p < .001$. Means in the same row that share superscripts ^{a} differ at $p < .001$, superscripts ^{bd} at $p < .05$, and superscripts ^{c} at $p < .06$ in post hoc comparisons. Games-Howell was used when variances were not equal; in other cases, Tukey's method was used.

Profiles indicate that students generally reported having a growth mindset, i.e., believing that intelligence is malleable. However, only 19.3% of Finnish and 11.9% of Estonian students demonstrated the so-called *authentic growth mindset*, reporting behavioural preferences most in line with Dweck's theory. Students in the group that was named the *false growth mindset* (13.5% of Finnish and 32.4% of Estonian students) reported average levels of general malleability beliefs, yet this belief was not apparent in their behavioural preferences. The two profiles between the opposite ones showed average levels of aspects representing both the fixed and growth mindsets.

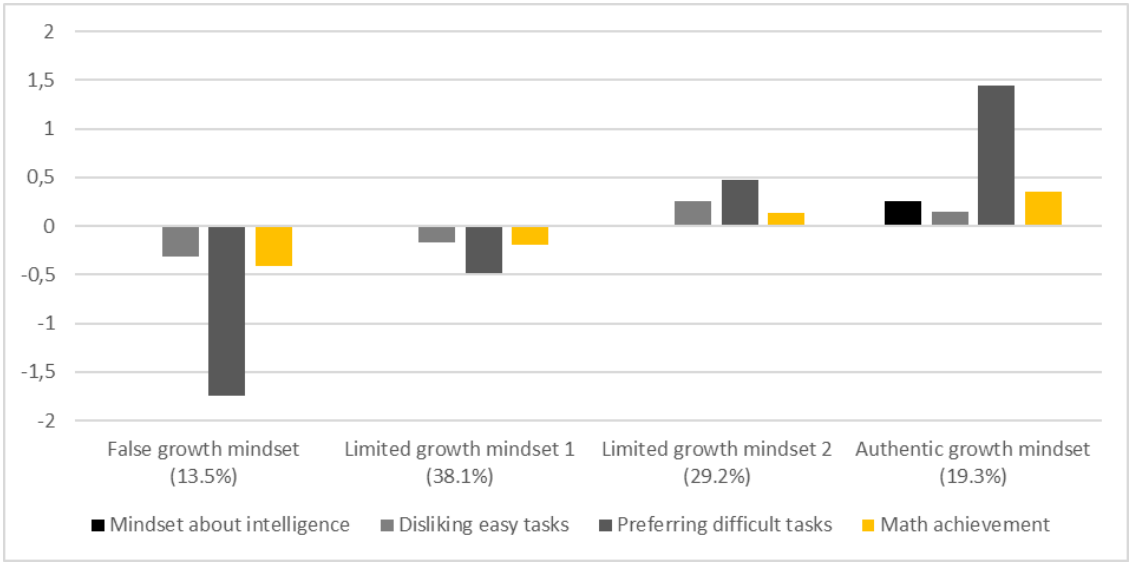

Figure 1: Finnish students' latent profiles with standardized means.

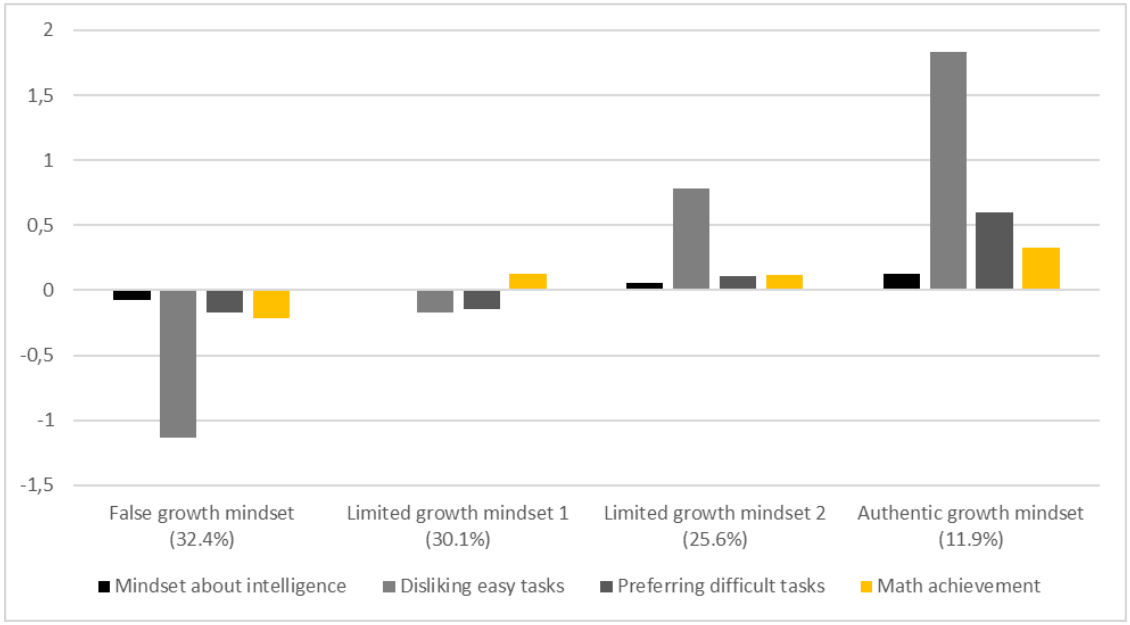

Figure 2: Estonian students' latent profiles with standardized means.

Profile differences in math achievement

In order to understand, whether and how the growth mindset profiles were related to math achievement, an analysis of variance (ANOVA) was conducted. Comparisons of the profiles revealed significant differences in math performance for the Finnish sample, $F(3, 164) = 3.81$, $p < .05$, $\eta_p^2 = 0.07$. Students with an *authentic growth mindset* had significantly higher math achievement than students who belonged to the *false growth mindset* and the *limited growth mindset 1* profiles (see Table 4). In the Estonian sample, differences in math performance for the different profiles followed the same trend as for the Finnish sample (see Figures 1 and 2), but the differences did not reach statistical significance, $F(3, 169) = 2.08$, *ns*.

Discussion

The current study examined Finnish and Estonian 4th grade students' ability beliefs or mindsets with two widely used mindset-instruments: Dweck's (2000) and Gunderson et al.'s (2013) scales. Finnish and Estonian students' mindsets and behavioural preferences as well as associations with math achievement were investigated. The sample consisted of ten-year-old students (N = 368), who were old enough to answer to Dweck's mindset instrument and young enough to be the intended target group for the Gunderson et al.'s scale.

Assessing mindsets

Results indicate that Dweck's and Gunderson et al.'s instruments do not measure the same latent phenomenon; or they at least address it from a different perspective or abstraction level. Namely, whereas Dweck's items seem to capture the generalised implicit beliefs, the Gunderson et al.'s questions about liking difficult or easy tasks target more concrete mindset-related behaviours. Those two aspects might not necessarily align with each other. Haimovitz and Dweck's (2016) findings have indicated that parents' self-reported implicit beliefs do not predict their children's mindsets, but parents' beliefs about failure that are more visible to children, have a more prominent role in shaping children's beliefs. In other words, parents' specific mindset related *behaviours* (e.g., "protecting" children from challenges) that do not always align with their self-reported mindsets seem to have a tangible impact on children in actual real-life settings and achievement situations. Similar patterns have been reported in teaching practices in school contexts (Park, et al., 2016; Rattan et al., 2012; Rissanen, et el., 2018). Results on children from the present study align with these findings—self-reported mindsets and mindset-related learning behaviours or behavioural preferences do not always align and mindset-related behaviours, not only reported mindsets need to be considered when explaining learning success.

Associations with math achievement

More specifically, based on Dweck's and Gunderson et al.'s instruments, variable-oriented regression analysis showed that math grades among both Finnish and Estonian students were significantly related to students' self-reported mindset as well as the mindset-related behavioural preference for solving difficult tasks that aid learning. Whether a student liked or disliked easy tasks, where it would be possible to get a lot of right answers was not associated with math achievement in either country. These results show that already in the 4th grade mindsets and mindset-related behavioural preferences have a role to play in students' math achievement as has been shown before, both directly and indirectly via mediating factors like self-efficacy and effort beliefs and resilience (e.g., Blackwell et al., 2007; Zeng, et al., 2016).

Mindset profiles

In order to make more specific inferences about individual patterns of mindsets and mindset-related behavioural preferences, individual-level latent profile analyses were carried out. As predicted, self-reported mindsets and mindset-related preferences about tasks offering different levels of learning potential, did not align for each individual student. Rather, four types of mindset profiles were defined showing that whereas both Finnish and Estonian 4th graders generally agree with the idea that intelligence can be developed, not all children have associated the concept of malleability of intelligence with learning behaviours that enable change on the neurobiological level. Only students with an *authentic growth mindset* seemed to be enjoying challenges and not be disheartened by task difficulty, whereas students with a *false growth mindset*, while sharing the idea of intelligence being malleable, did not report actual behaviours indicative of a growth mindset toward learning tasks. It can be speculated that although these students have a general idea of intelligence being changeable, they might not know how to actualize their growth mindset in actual learning strategies. The results illustrate discrepancies between implicit beliefs and concrete behaviour among the students. This indicates that there is a need for even more conscious efforts from teachers and parents to realise growth mindset pedagogy (Rissanen, et al., 2019) and make children explicitly aware of the learning behaviours and strategies that put growth mindset into action (Sun, 2015; 2018). Growth mindset rhetoric alone (Dweck, 2015; 2016), e.g., emphasising the malleability of intelligence and even the

importance of effort might not be sufficient in bringing about true change in students' learning preferences and behaviour; skills and knowledge do not increase when learners, perhaps unknowingly, shy away from difficult tasks and instead invest valuable learning time in tasks that have already been mastered (Sun, 2015; 2018).

Mindset profiles and country-level differences

Although students from both countries appeared to fall into more or less similar profiles of *authentic*, *limited* and *false growth mindsets*, there did emerge some country-level differences. Recent PISA results tell us that when assessing student mindset with a single item "*Your intelligence is something about you that you can't change very much*", Estonia has the highest percentage of students who reportedly believe that intelligence is malleable (Schleicher, 2019); however, in our study, Finnish students reported higher levels of growth-mindset behavioural preferences. They reported more readiness for tackling difficult tasks that offer opportunities to learn and also showed less liking for solving tasks that are safe and easy. In Finland the best discriminating variable among mindset-profiles was students' preference of difficult tasks that offer most learning opportunities, whereas in Estonia, students fell into different profiles mostly based on their liking or disliking of safe and easy tasks. It is interesting to note that the Finnish national curriculum is more explicitly in line with growth mindset pedagogy than the Estonian curriculum (see Estonian Government, 2011/2014; Finnish National Agency for Education 2014; Rissanen, et al., 2019). As teacher training programmes are aligned with respective national curricula, it can be suspected that explicit growth-mindset messages in the Finnish national curriculum, such as the importance of process-focused feedback, the positive role of mistakes in learning, and fostering mastery orientation in students has had an influence on teachers' classroom practices and therefore also students' reported mindset-related behavioural preferences (e.g., Park et al., 2016).

When it comes to associations with academic achievement, the person-oriented analyses somewhat paralleled the results of the variable-oriented regression analysis. In both countries the growth mindset profiles manifested in differences in academic achievement in mathematics; *authentic growth mindset* being associated with the highest marks and false growth mindset with the lowest. Yet, differences in achievement were statistically significant only for the Finnish sample, perhaps because liking difficult tasks—which was on a variable level a better predictor of learning and achievement than disliking easy tasks—showed better discriminative power between profiles for the Finnish students. All in all, in line with theory, students with an *authentic growth mindset* prefer difficult tasks that seem to result in better learning and achievement (Dweck, 2000). Students in our sample, who exhibited a *false growth mindset* seemed to avoid challenges and also demonstrated poorer achievement. It should be noted though that the cross-sectional nature of the current study does not allow making conclusions about causality. Longitudinal research is needed to illuminate the effects of theoretically valid authentic and false growth mindsets on academic achievement and to understand whether and how the profiles might change over time. Also, the relevance of authentic and false growth mindsets could be further researched in different cultural settings and even domains characterized by different meaning systems, such as sports, the performing arts, etc..

Practical conclusions

In line with warnings from Dweck and her colleagues (Dweck, 2015; 2016; Yeager, et al., 2016) our study cautions against the oversimplified misinterpretations of the growth mindset theory that might result in the spread of detrimental growth mindset rhetoric in the schools. Educators as well as researchers should not make decisions about students' mindsets only based on students' statements about knowing and believing that intelligence is malleable. Rather, this impression should be validated with observing or inquiring about student's actual behaviours and reactions in learning situations (Yeager, et al., 2016), for example, how the child reacts to failure, chooses challenges, and interprets mistakes. Effectively promoting a growth mindset can be counterintuitive and without proper theoretical and pedagogical understanding, misapplication of research is likely to occur, as has been witnessed with the self-esteem movement's detrimental effects (Yeager, et al., 2013; Yeager & Walton, 2011). Thus, our study results signal the need for more concrete and explicit understanding of

the mindset theory and pedagogy among educators, and in teacher education programs (Rissanen, et al., 2018; 2019).

Limitations and future directions

The current study also had a few limitations. The moderate sample size and cross-sectional design of the study limit the generalizability and robustness of the conclusions as well as set apparent limits to the implications that can be drawn. The results need to be replicated with larger sample sizes and longitudinal or intervention studies to analyse the causal and temporal dynamics of the belief profiles. Although the items for behavioural preferences were situationally specific and worded behaviourally rather than as general abstractions, they were still self-report measures and the actual behaviour of children was not assessed. This should be kept in mind when interpreting the results. Also, even though single items have been shown to be adequate measures of one-dimensional and concrete constructs (see Bergkvist, 2015; Loo, 2002), more trustworthy measures for assessing mindset-related behavioural preferences are needed for future studies. It is evident from our results that assessing mindset effects in learning benefits from supplementing self-reported mindset information with data about mindset-related learning behaviours. Our results call for future comparative studies to better clarify the possible differences in students' mindsets and mindset-related learning behaviours as even seemingly similar educational systems may exhibit subtle differences in learning cultures that only become evident through in-depth analysis.

All in all, our study indicates that the authentic and false growth mindsets as phenomena deserve more attention both in research as well as educational practices.

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About the Authors

Kati Aus works as a lecturer of educational psychology and a researcher in teacher education in Tallinn University. Her work there is mainly focused on educational psychology in teacher education. She also works in Tallinn University of Technology as a consultant of university didactics. Her research interests cover topics of the psychology of learning, including study motivation, social-emotional aspects of learning and conceptual change processes.

Dr. Elina Kuusisto works as a University Lecturer in the domain of diversity and inclusive education at the Tampere University. She also holds a Title of Docent at the University of Helsinki. Her research interests include teacher ethics and school pedagogy. More particularly, through her studies she aims to enhance 1) ethical sensitivity and moral education in schools; 2) civic purpose and purposeful teaching among students and teachers; and 3) talent development and growth mindset pedagogy to increase meaningful learning experiences of every student.

Dr. Grete Arro works as an educational psychology researcher and lecturer in the School of Educational Sciences in Tallinn University. She has working experience since 2006 from various longitudinal educational research projects. She also works in Tallinn University of Technology as a consultant of university didactics. Her research interests are related to various domains of self-regulated learning and to conceptual change, especially related to the field of conservation psychology and sustainability issues.

Dr. Kirsi Tirri is a full Professor of Education at the Faculty of Educational Sciences at the University of Helsinki and a visiting Professor at St. John's University, New York, USA. Professor Tirri has been the President of ECHA (European Council for High Ability) for the years 2008-2012. She served as a President of the Finnish Academy of Science and Letters for the years 2016-2017. Her research interests include school pedagogy, moral and religious education, gifted education, teacher education and cross-cultural studies. She has published 13 monographs and numerous journal articles related to these fields.

Address

Kati Aus;
School of Educational Sciences;
Tallinn University, Narva mnt. 25, 10120 Tallinn, Estonia

e-Mail: katiaus@tlu.ee.

Exploring Mindfulness to Create Conditions to Help Gifted Students Bloom and Flourish

Dorothy A. Sisk
Lamar University, Beaumont, TX, USA

Michele Kane
Northeastern University. Chicago, IL, USA

Be the change you wish to see in the world.
Gandhi

Abstract

This article explores the art and science of Mindfulness from the perspective of a Buddhist Monk, Thich Nhat Hanh, author of five books in the Mindfulness Essentials series, and an American medical doctor, Jon Kabat Zinn founder of the Mindfulness-Based Stress Reduction clinic (MBSR) at the University of Massachusetts. In addition, we will explore mindfulness and its connection to compassion; the importance of being, belonging and becoming focusing on the present moment; exploring self-affirmations and sense of identity; helping students find purpose, make connections and model caring; self- regulation; developing caring school cultures; strategies for implementing mindfulness in the classroom; peace building and peace education. Mindfulness practices have the capacity for transformation in students, their teachers, and parents.

Keywords: Mindfulness; meditation; stress reduction; well-being; transformation.

Introduction

Gandhi's words remind educators working with children and youth, that we are agents of change. Mindfulness provides insight to help educators create a vision of education to meet the needs of the growing diversity of students with unique educational and behavioral needs, many of whom are unidentified high potential and gifted students. Change is particularly needed for gifted students who are often disengaged with wandering attention, and performance well below their potential. Yet, mindfulness is not a new idea, since William James (1950) in *Principles of Psychology* said, "The faculty of voluntarily bringing back a wandering attention, over and over again, is the very root of judgment, character and will." (James, 1950: 424). According to the *Mindful Research Guide* (2013) the number of scientific literature articles published on mindfulness per year grew significantly in a 30 year period moving from one study in 1982 to 477 studies in 2012, and the American Mindfulness Research Association (AMRA) reports that 203 articles were published in 2019.

Mindfulness is the art of living in the moment, with very ancient roots; yet, incredible modern applications have been made in medicine, business and education. Rechtschaffen (2014) championed these great strides, particularly those made in understanding the effect that mindfulness practices have on the mind, heart, and body.

This article examines leaders in mindfulness including two very different individuals who made phenomenal contributions in building an understanding of mindfulness, as they worked with mindfulness practices and meditation over the last 40 years. One is a Vietnamese Buddhist monk, Thich Nhat Hanh, and the second is an American medical doctor Jon Kabat-Zinn from the University of Massachusetts Medical Center (UMASS).

Thich Nhat Hanh

Thich Nhat Hanh wrote five books in the Mindfulness Essential Series including *How to Sit* with meaningful inspiration and clear and simple directions for anyone wanting to explore mindfulness meditation. In the second book *How to Relax*, he talks about the daily stress that we experience, making us less productive and less happy. In this book Thich Nhat Hanh shares techniques for bringing life back into balance. The third book *How to Walk* emphasizes touching the Earth with awareness and how to arrive fully in the present moment. The fourth book *How to Love* brings clarity, compassion and humor to the question of how to love. The fifth book *How to Eat* tells how the process of eating can be a joyful and sustainable activity in all aspects of eating, including preparing the food, and even cleaning up after the meal. Thich Nhat Hanh shares how as a young novice, he and one other novice washed the dishes for over 100 monks without running water or soap; and yet, they were able to make it an enjoyable activity.

Thich Nhat Hanh calls mindfulness an art form that can be cultivated in every area of life, such as waking up in the morning and greeting the day with gratitude. In *How to Eat* he suggested you bless the food and nourishment that is essential to your body, and when you are finished with your meal say the following *gatha:*

In this food
I see clearly
the presence of the entire universe
supporting my existence. (Hanh, 2014: 110)

Thich Nhat Hanh said mindfully look at a grain of rice and recognize that the grain of rice contains the whole world. "When you put that grain of rice in your mouth, you are putting the whole universe in your mouth." (Hanh, 2014: 30). In *How to Walk (2015)* Thich Nhat Hanh stressed love of the Earth, and expressing love of the Earth with each step saying:

With each step
I come home to the Earth
With each step
I return to my source
With each step
I take refuge in Mother Earth.
Or as you walk, you can say:
I love the Earth.
I am in love with the Earth. (Hanh, 2015: 114-115).

Focus on your breath and as your feet touch the Earth, be aware of the sky and the wonder of your environment. With each step, there is the possibility of mindfulness, concentration and insight. Walk slowly and mindfully at your own pace, and focus on your breathing as you walk, you are unifying your mind and body. Walking can help you be calm, and with focused attention on your breath, you stop your thinking, blaming, and judging that take you away from the present moment.

Maslow (1968) championed a similar way of perceiving, behaving and focusing which he called the *here-now*. This concept of Maslow is echoed when Thich Nhat Hanh stresses that life is only available in the present moment. In walking, you can become free of your past, your future, and your worries and fears. When you walk, you don't think, and you don't talk, even if you are walking with another person. (Hanh, 2015: 35)

Thich Nhat Hanh in *How to Relax (2015)* said in many Zen monasteries there is a sign over the door that says *Do Not Squander Your Life*. (Hanh, 2015: 54). He added if you are rested and relaxed, everyone will profit from your relaxation and energy, and that you should smile. A smile relaxes your nervous system and he suggested the use of the following *gatha:*

Breathing in, I calm my body,
Breathing out, I smile,
Dwelling in the present moment,
I know this is a wonderful moment. (Hanh, 2015: 67).

Thich Nhat Hanh said, "The only moment to be alive is the present moment and mindful breathing helps you go back to that precious island within, the *island of ourselves*, so that you can experience the foundation of your being" (Hanh, 2015: 69).

Much of Thich Nhat Hanh's work and teaching are found in the theory of spiritual intelligence proposed by Sisk and Torrance (2001) in *Spiritual Intelligence: Developing Higher Consciousness*, especially the reverence for Mother Earth, and the core values of connectedness, unity of all, compassion, a sense of balance, responsibility, and service, as well as the key virtues of truth, justice, compassion, and caring.

From an examination of Psychology, Science, Ancient Wisdom and traditions of Eastern Mysticism, the wisdom of Native American and indigenous people, Sisk and Torrance defined spiritual intelligence as the "capacity to use a multi-sensory approach including intuition, meditation, and visualization to tap inner knowledge to solve problems of a global nature." (Sisk and Torrance, 2001: 153).

Mindfulness can help you to attend to the *wars* you may have going on within you or with others. Mindful walking and mindful breathing help you to face your pain and sorrow (Hahn,2015:73). The mind is often described as a monkey swinging from branch to branch, and the challenge is to identify what is happening and clearly recognize your mental state and consciously make it calm. This *gatha* can be helpful:

> In, Out,
> Deep, Slow,
> Calm, Ease,
> Smile, Release,
> Present Moment, Wonderful Moment. (Hanh, 2015: 105)

Thich Nhat Hanh used a flower as a metaphor for a child and said every child is born into the garden of humanity as a flower, and as grownups, we need to tell them they are already beautiful and they don't have to be someone else. (Hanh, 2015: 25) For gifted children with their perfectionism and critical self-judgment, this affirmation is essential. There are many powerful messages for parents, care givers and teachers of the gifted in the words of Thich Nhat Hanh. The second individual to be discussed as a contributor to the understanding of mindfulness is Jon Kabat-Zinn.

Jon Kabat-Zinn

Jon Kabat-Zinn established the Mindfulness-Based Stress Reduction (MBSR) clinic at the Massachusetts Medical Center in l979. At that time, the word *mindfulness* was nowhere in the medical lexicon. Today, there are nearly 50,000 certified MBSR instructors teaching mindfulness techniques, including meditation, and the clinics are in nearly every state in the United States and in more than 30 countries.

Early on Kabat-Zinn worked with treatment resistant patients of other doctors, and after 8 weeks of mindfulness training, the treatment resistant patients showed remarkable transformation. The MBSR patients had symptom reduction in blood pressure, psoriasis, and fibromyalgia, and patients with chronic pain disorder reported a greater sense of well-being (Kabat-Zinn, 1982, 1998). As a result, considerable interest was sparked in the clinical use of mindfulness, and MBSR is used widely to reduce psychological morbidity associated with chronic illnesses and to treat emotional and behavioral disorders (Kabat-Zinn, l998).

Randomized controlled trials and studies show impressive reductions in psychological morbidity, as well as the reduction of stress and enhanced emotional well-being in non-clinical samples (Williams, Kolar, Roger & Pearson, 2010).

Mindfulness training for stress reduction

Over the years, numerous health professionals have taught mindfulness-based stress reduction and developed well-established clinical and research programs. Jon Kabat-Zinn (2003) in discussing the effectiveness of Mindfulness-Based Stress Reduction (MBSR) made the following comments:

> The feedback coming from people attending mindfulness programs when we have occasion to meet them, tends to be highly positive. They tend to speak of the experience as transformative. There is a sense among those of us teaching mindfulness that we continue to be nurtured personally and professionally by the work itself and by the practice. This, and a sense of connectedness with local and global communities of colleagues who do this work are constant reminders of the importance of staying true to the spirit of mindfulness practice.
>
> (Kabat-Zinn, 2003: 151)

In a study conducted by Davidson et al (2003) 41 employees of a biotechnology company were randomly assigned to either an MBSR condition (N=25) or to a wait-list condition (N=6). The MBSR subjects participated in an 8-week program during their working hours. All subjects received extensive laboratory testing on three occasions, receiving pre- and post-tests during the 8-week intervention period, and during a 4-month follow-up including EEGs to measure brain electrical activity in response to a variety of emotional challenges. All subjects were also vaccinated with influenza vaccine at the end of the 8-week intervention period and then subsequently studied for antibody titers. As originally hypothesized, the researchers found significant increases in left-sided activation in the anterior cortical area of the brain of the subjects who had the MBSR training as compared to the wait-list controls. Left-sided activation in several anterior regions of the brain has been observed during certain forms of positive emotional expression and in subjects with more dispositional positive affect. Right-sided activation is usually associated with negative emotional expressions such as anger, anxiety and depression. The researchers found that the meditators displayed a significantly larger rise in antibody titers, whereas there was no significant relationship for control subjects. This study suggested that MBSR training can lead to brain changes consistent with more effective responses to negative emotion under stress. The changes that were noted during the study endured for at least 4 months after the intervention.

Kabat-Zinn (2003) said such studies suggest the need for further research that might illuminate critical issues in mind/body medicine and psychological approaches to patient care and treatment, particularly with mindfulness-based approaches. In addition, there is a need to apply mindfulness practices to education, particularly with teachers who are stressed with the over-emphasis on standardized testing and prescribed curriculum which thwart their efforts to differentiate the curriculum and meet the needs of individual children, particularly their advanced and gifted students.

Mindfulness and its connection to compassion

Compassion is defined quite literally as suffering with others. However, compassion includes an element of action which is missing from empathy and sympathy that primarily focus on feeling. A classic research study focusing on compassion was conducted at Princeton University in the 1970's by John Darley and Daniel Batson. They examined the reaction of seminary students in which one group was told they were to deliver a talk on the Good Samaritan, and that they were already late for the talk. An actor was placed in the hall, visibly and audibly suffering; 10% of the students who thought they were late stopped to help. Yet, more than six times that number helped in the group who were not told they were late, and they were not in a hurry. The researchers concluded that the seminary students were not inherently morally insensitive, but when stressed by a sense of having to hurry, they lost touch with their deeper values of compassion.

Jim Doty, a neurosurgeon and clinical professor of neurosurgery at Stanford University said mindfulness and compassion must go hand in hand, and mindfulness without compassion is problematic. Doty gave an example of Type A- driven individuals who practice mindfulness to become more attentive and more focused; without compassion these individuals can be extremely competitive and ruthless. He said the practice of mindfulness cultivates compassion by helping us see our interconnectedness, and this "clear seeing" leads to greater compassion (Doty, 2016).

Compassionate instinct

According to Emma Seppala (2013) there is a growing body of evidence that suggests that at our core, both animals and human beings have a compassionate instinct. Yet, even though compassion appears to be a naturally evolving instinct, mindfulness training can strengthen compassion. Shapiro (2006) suggests self-talk and saying to yourself "I care about you," "tell me about your experience" instead of judging your experiences, you can take an interest in them. Gifted students often are hard on themselves and their perfectionistic nature makes it difficult for them to reflect on their experiences with an openness and compassion for themselves. Self-talk stresses reflecting on an open approach to our experiences and gifted students enjoy the "fun" nature of self-talk.

Self-compassion

Fred Bryant from Loyola University in Chicago suggests ten ways to be more mindfully engaged to build self-compassion. Bryant pointed out that as we become more self-compassionate and more compassionate toward others, we become mindfully engaged which he described as "savoring." (Bryant & Veroff, 2006). Figure 1 depicts Bryan's suggestions to develop savoring:

1. Share your good feelings with others.
2. Take a mental photograph.
3. Congratulate yourself.
4. Sharpen your sensory perception.
5. Shout it from the rooftops.
6. Compare the outcome to something worse.
7. Get absorbed in the moment.
8. Count your blessings and give thanks.
9. Avoid killjoy thinking.
10. Remind yourself of how fast time flies

Figure 1: Bryant's Ten Ways to Develop Savoring

Tara Brach (2019) in *Radical Compassion* talks about the transformative power of self-compassion. She said we need to awaken self-compassion and love ourselves into healing. And we need to attune to others with an active caring, and include all beings in our heart (p.40), She uses a meditation called **RAIN** to use self-compassion in addressing issues in situations that she adapted from Michele McDonald that has 4 steps: **R** for Recognize what is happening; **A** Allow life to be; **I** Investigate with a gentle, curious attention; **N** Nurture with living presence.

Science and practice of gratitude

The John Templeton Foundation in collaboration with the University of California at Davis and the Greater Good Science Center came together to support the science and practice of gratitude in an initiative (2012-2015) that included a research grant competition, a series of articles on gratitude, and a large public event. They received 300 applications and selected 14 as awardees with topics such as: how the practice of gratitude might prevent bullying, the neuroscience of gratitude, and the role of gratitude in romantic relationships. A retreat was held to provide a venue for the programs discussed. In addition, they provided 15 individual doctoral grants of $10,000 to support research on gratitude. The last event was a public meeting of 600 people participating in a day of science, stories, resources and inspiration.

A resource for practicing everyday gratitude is *Everyday Gratitude* (2018) edited by Saoirse McClory, Kristi Nelson and Margaret Wakeley. It is a collection of inspirational quotes and accompanying questions to help slow you down, look anew at each moment, recognize its gifts, whether large or small, welcome or non-welcome, hidden or obvious. For example, one from Kabir: *Wherever you are is the entry point* and the accompanying question: *What can I do right now, big or small, to make a change that I long for?*

Cultivating Global Compassion

Paul Ekman (2014) in his book *Moving toward Global Compassion* calls for researchers and us to develop more compassion for people who are away from us socially and geographically. He suggests that there are two kinds of compassion, proximal and distal. Proximal is where we see someone in need and help them. Distal requires social forecasting and the ability to anticipate harm before it happens. Gifted students with their keen sense of wanting to make a difference and problem solving are fascinated in engaging in social forecasting and viewing how materialism and self-centeredness get in the way of distal compassion. Ekman said our goal is developing *stranger* compassion.

Being, belonging, and becoming

Carl Rogers, the psychologist, emphasized the importance of being, belonging, and becoming. He said one of the most important conditions in supporting the growth of an individual is empathic understanding, the ability to understand another's experiences, emotions and thoughts from his or her perspective. This process is currently being emphasized in education as the Theory of Mind, which is the same process as the mindfulness practice of deep listening described by Thich Nhat Hanh (2015). In *A Way of Being* Rogers (1980) described the good life as an increasing tendency to live fully in each moment. Again, Thich Nhat Hanh's focusing on the present moment, the here and now, resonates with Rogers' concept of becoming.

When you have a sense of being, you have a strong sense of identity and the capacity to maintain relationships with others. To fully develop a sense of being it is important to explore, build on. and extend your interests and to recognize your own individual values and skills that define you as a unique individual. Belonging is a dynamic sense of being connected, being a part of a group, a family or a community, and feeling comfortable in these different groups. When you have a sense of belonging, you are more confident, secure and creative.

To increase a sense of belonging engage and interact with others, accept their diversity and see/value their sense of being individuals in the groups. Becoming includes a sense of change through different experiences, events and circumstances. You are in the process of becoming when you continue to grow, learn and develop. George Land (1973) in his book *Grow or Die* said that over time we gain knowledge, extend our understandings, create relationship and develop social and emotional skills, and he said indeed we must grow or die. Mindfulness practices that enhance becoming include meditation with an emphasis on compassion. Land said through meditation you can have experiences of greater meaning, feelings of connectedness and a sense of happiness.

There is growing awareness in education of the importance of social and emotional skills in determining how well-equipped children and adults are to meet the demands of a swiftly changing society and environment with a positive sense of identity. One major way to help students, particularly gifted students work toward a positive sense of identity is to introduce the idea that competence or ability is changeable and controllable as an aspect of self- development. This idea has been facilitated with the work of Carol Dweck (2006) who described two mindsets in her research, a fixed mindset and a growth mindset. With the growth mindset you can learn and grow with limitless potential with practice, perseverance and effort.

Exploring self-affirmations and sense of identiy

Consciousness of self is not just a cognitive process. As psychologist Rollo May(1953) said:

> We experience our self as a thinking-intuiting-feeling and acting unit. The self is then not merely the sum of the various roles one plays—it is the capacity by which one knows one plays these roles. It is the center from which one sees and is aware of different "sides of self" (May, 1953).

A sense of self evolves from our accumulated experiences and the messages we receive from others. Rollo May's concept of the individual is expressed in the Awareness of Self Model (Sisk, 2009) and depicted in Figure 2.

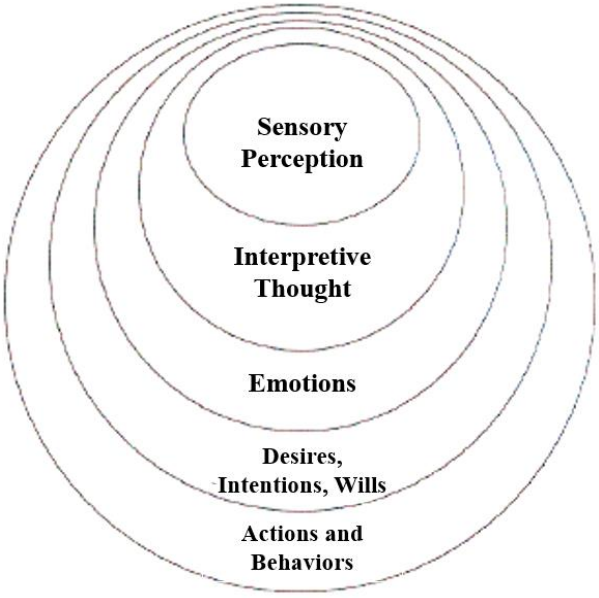

Figure 2: Awareness of Self-Model.

This self-awareness model was developed by Sisk (2009) to help gifted students become more aware of themselves as they examine the different parts of self in the model: sensing, interpreting, emoting, desiring, intending, willing and behaving. The first component of the Self-Awareness model is sensory perception and a nature walk provided for a group of 5th grade students is one example of a sensory perception activity. The students explored their playground, noted squirrels scampering up the trees, bees buzzing around the flowers, and birds tending their nests in one of the trees. After the walk, the teacher gave the students a frame with sentence starters of I see, I hear, I touch, I feel, I taste and I experience to write a collaborative class poem. Their class poem is below:

I see squirrels scampering up the bark of the trees;
I hear the busy buzzing bees as they fly around the flowers;
I touch the smooth green moss on the trees;
I feel a quiet feeling in our playground;
I taste the sweat on my lip as my tongue waggles back and forth; and,
I experience being a part of nature. (Sisk & Kane, 2018:105)

Rollo May (1953) said our senses provide us raw data, as noted in the nature walk of the students, but what we do with that data is the interpretive component of awareness.

Interpretive thought

After the walk and writing their class poem the students talked about how different the playground was with no one having recess or physical education, and that the playground was busy with the squirrels, birds and insects. One student said, "I saw so much beauty there that I had never

noticed before," and she continued, " I guess we need to be quiet and really look or we will miss a lot." Another student said, "Our playground could be more beautiful if it had flowers. Can we make a garden?"

Emotions

The teacher was amazed at the wide arrange of emotions the students expressed after the walk, and with their excitement and enthusiasm on starting a garden. One student was so elated about the garden at the dinner table at home,that his parent agreed to donate the flowers.

Desires, intentions and wills

Desires represent the things we want to accomplish, to do or to have, and intentions can be both desires or wills, and they can be short or long term. Desires and intentions can also be thought of as objectives, things you want to accomplish.

Actions and behaviors

The last component of the Self-Awareness model is action and behavior. Our actions tell others how much we care about an issue, such as stepping forward to make a garden for the school playground. The Self-Awareness Model based on Rollo May's theory can be used with gifted students to help them become more aware of themselves as they consciously examine and work with the component parts of self: Sensing, interpreting, emoting, desiring, intending, willing, and behaving. Consciousness of self-identity is not an end point, but a journey (May, 1953).

Taking time to become conscious of self

Many people including gifted students are over -scheduled and need time to relax and enjoy silence, such as the walk of the fifth-grade students in their playground. It is important that gifted students learn to step away from daily routines and reflect on the bigger questions such as : How would I describe myself? Why am I here? What should I do next? And Who am I? These are the questions that many gifted students are reflecting on in their own quiet moments.

Reflection

One way of describing reflection is "studying yourself." You can reflect by writing in a journal, talking with a friend or simply sitting quietly and thinking. Gifted students learn about themselves in many different ways and reflecting can have the following five positive outcomes:

1. Become aware of how they act or behave with their family, friends and classmates.
2. Look at a given situation from another's perspective.
2. Identify how their personality, family and skills influence what they notice or how they
3. interpret a situation and choose to act.
4. Think about how to approach a situation differently in the future, and
5. Identify new skills to try to learn or improve.

Helping students find their purpose: make connections and model caring

In the past, people who pondered the big ideas and mysteries of life were the mystics and philosophers. Today, contemporary educators and psychologists are tackling these questions of meaning and purpose with implications for caring adults in guiding gifted students who are searching for answers.

Dr. Martin Seligman, a psychologist, past president of the American Psychological Association, and founding member of the Positive Psychology Movement and his colleagues at the University of Pennsylvania reframed the study of psychology from identifying personal deficits and remediating to focusing on strengths and virtues that allow people to thrive. They scientifically examined the psychological traits that cut across cultural and ethnic boundaries which lead to goodness and flourishing. They generated a categorical system that was presented in the book, The Classification of Strengths and Virtues (Seligman, Ernst, Gillham, Reivicha, Linkins (2009).

Signature strengths

According to positive psychologists, creating meaning comes from recognizing and identifying the strongest individual signature strengths, and then using these strengths to serve something beyond the self. Adults who interact with gifted students can help them identify these strengths with the use of an assessment or by reflection and contemplation to foster awareness of and developing their personal assets.

The power of awe

At the Center for Greater Good in Berkeley, researchers working with psychologist Dacher Keltner, are studying the concept of awe, being overwhelmed by something vast or with a strong aesthetic. Visiting the Grand Canyon, staring at the Milky Way or being intrigued by the beauty of a Georgia O'Keeffe painting are pathways to awe. Creating such opportunities can enhance well-being, develop mindfulness, and foster creativity and connectedness. Classroom activities such as taking time to enjoy world class music or enjoying the work of renowned artists are entry points for being immersed in awe-inspiring experiences (Keltner, 2015).

Embracing errors through mindfulness

Ellen Langer (2000), called the "mother of mindfulness" has been researching mindfulness for decades. Her focus is on the nimble thinking that comes by noticing things in the present. This allows for a flexibility of thought that is accepting of mistakes and failures, especially when they lead to more intense observation. Actively noticing generates an overall sense of enhanced personal health, according to Langer. For gifted students who are perfectionists this approach makes room for errors, so they can be celebrated. Clarity of purpose becomes more apparent as the individual embraces the whole self.

Individual Action = Back to Basics

The power of individual action is the core of the work of Tal Ben-Shahar (2015). His six basic steps toward creating more happiness in life include simplifying daily living, expressing gratitude and remembering the mind/body connection of healthy nutrition, sound sleep and exercise. His suggestions serve as reminders of our intentions such as wearing a bracelet with key words or keeping inspirational aphorisms close to our workspace. Ben-Shahar's suggestions offer encouragement and support for staying in the present moment with enhanced awareness.

Mindfulness and Self-Regulation

Self-regulation enables us to change our behavior in order to pay attention and conform to rules, plans, promises, ideals, and other standards. Vohs & Baumeister (2004) said self-regulation is the key to success in human life. They stressed that most of the social and personal problems that afflict people in modern Western society involve some element of self-regulation failure at their root (p.2). Gifted students are often classified as underachievers and the figures vary from 20% to 70% (Clark, 2013); underachievement has a dimension of poor self-control or procrastination, and both can be a cause of poor performance in school, and a reflection of poor self-regulation (Diamond & Lee, 2011). Poor self- regulation also contributes to gifted students being unwilling to persist in the face of failure, being less able to choose effective performance settings, less able to set and each goals, and less able to sustain effort over a period of time unless it is a topic in which they have a high interest (Sisk & Kane, 2018). Self-regulation is one of the major executive functions of the self and the other major executive function of the self is "choice" (Baumeister, Schmeichel and Vohs, 2004) Mindfulness increases awareness of present moment experiences and promotes mindful exploration of inner mental states.

Mindfulness intervention aids executive function

Diamond & Lee (2011) conducted a meta-analysis of successful programs that used mindfulness, yoga, aerobic activities, martial arts, games, and computerized training to improve the executive function of students. They found successful programs provided repeated practice and

progressively increased the challenge to executive functions. Students with the worse executive functions benefitted the most from the activities. In a later study, Diamond & Lee reported that early executive functioning training may avert widening achievement gaps later on. Intervention outcomes included the ability to mentally play with ideas, make considered rather than impulsive responses, staying focused, self-control, and discipline. Diamond and Lee (2012) suggested that focusing narrowly on cognitive self-regulation may not be as effective with students as addressing both emotional, social and physical development, since positive effects were noted from the use of aerobic exercises, martial arts, and yoga.

Students who struggle to wait their turn, to calm themselves down, or to follow rules are not necessarily destined for a life of difficulty; instead research indicates that mindfulness tools can build self-regulating behaviors and emotional control that will set them on a better life trajectory (Sisk & Kane, 2018). Self-regulation enables us to hold back our first impulse and be more mindful with more complex and flexible ways of deciding and being. Self-regulation is essential for individuals, but particularly for gifted students to work toward success in their personal and academic lives**.**

Paths to develop a caring school culture

As stress and anxiety mount globally due to the challenges of climate change, illness/disease, poverty, violence, and social injustice it is no surprise that a nurturing school culture can serve as an important anchor for students living with daily uncertainty. School climate, the vibe of the school, is continuously changing and varies with activities and educational programs similar to individual changes in mood. School culture, on the other hand, is similar to the personality of the school; it is comprised of core beliefs and attitudes that change little over time (Greunert, 2008). Fostering a positive school culture is essential in maintaining and regulating the physical and mental health of all who interact within an educational environment.

Mindful teaching and teaching mindfulness

Teachers can be effective in creating a classroom climate of care by engaging in thoughtful practices that enhance caring actions and feelings. These efforts in promoting such actions have a cumulative effect in contributing to the positivity of the overall school climate. Schoerberlin (2009) distinguishes between mindful teaching and teaching mindfulness. Educators who bring self-awareness, non-judgmental observation, and stay in the present are apt to generate a sense of calm and peace within the classroom setting. As teachers model mindful teaching students can observe these practices in action. It is easier to understand practices such as walking with focused attention or taking several deep breaths to center and be calm, when they are informally demonstrated.

Intentionality

Teaching mindfulness allows both students and teachers to join in mindfulness practices as teachers present practices for the group to experience. However, even small children are able to lead a group in mindful walking, deep breathing, or similar practices designed to focus attention on the present moment. Intentionality is an important element of designing lessons that emphasize or practice mindfulness. The teacher needs to have a clear vision of how a lesson will serve the students. Encouraging respect of the self, of others, and the place are classroom expectations that generate a sense of trust and safety. Creating a “chill zone” or “peace corner” respects the need for the individual student to be able to calm down and reset emotionally. Morning meetings or Council meetings are also ways that students can share opinions and concerns while others listen attentively. Collectively, such practices contribute to the overall sense of a positive classroom climate and a caring school culture.

Strategies for implementing mindfulness in the classroom

Daniel Rechtshaffen (2016) said mindfulness or showing up fully for each moment and paying attention with an open heart is different from mindful practices. His approach to creating mindful practices for the classroom uses a framework with five realms of mindful literacy. Each of

the practices begins with the teacher/facilitator understanding and modeling mindfulness, and then guiding students through the various practices.

Realms of Mindful Literacy

Physical literacy

This realm focuses on body awareness and creating a sense of peace and calm. Activities include noticing the parts of the body and bodily sensations through a body scan, physical movement such as walking a labyrinth or becoming centered and moving while listening and responding to a guided meditation.

Mental literacy

A core of mindfulness is focusing attention on the breath and noting the in and out process of breathing. In this realm, you focus awareness on the physical sensations of breathing. This practice requires both relaxation and concentration to be attuned to the workings of your mind. When your mind wanders, bring your awareness back to the breathing and build the muscles of awareness.

Emotional literacy

Loving-kindness meditations center on sending love, strength or any positive feeling to the self and then to others. For example, the students might repeat this affirmation after the teacher: "May I be well, may my school community be well, may my country be well, may the world be well." Research shows that sending caring sentiments via gratitude is a practice that enhances well-being, and gratitude journals or bulletin boards can be integrated into classroom practices.

Social literacy

A sense of community can be strengthened by practices such as morning meeting or close of day check-ins. Starters like "I am noticing" or "I am feeling" help students in the group to develop a feeling vocabulary and to build trust with others.

Global literacy

The natural world and our relationship to it comprise the essence of global literacy, and how our choices affect our planet can be developed through global literacy practices. Time in nature observing, experiencing, and contemplating aspects of the natural world like trees, clouds, or stones can broaden connections. Noticing the similarities and differences can develop perspective-taking and a deeper awareness of our connection to the natural world.

The willard model of teaching and learning mindfulness

The Willard model has five domains arranged in a triangle including: mindful self, mindful system, mindful awareness, mindful instruction, informal mindful integration, and mindful living. This process-oriented approach begins with the self and then moves to more broad systems such as the classroom, the school and then beyond those walls. Willard suggests starting small to integrate mindfulness beyond the classroom with activities such as watching ripples on the water, trying to balance pennies on your shoes, walking intentionally or eating breakfast slowly to savor the moment. Once there is a sense of confidence and ease then one can move to more involved tasks of paying attention in the present (Willard, 2016).

Educators and parents can find the practices that they enjoy such as walking in a forest or listening to guided imagery and then sharing their excitement and joy with their students and sons and daughters. Adult enthusiasm can be contagious.

Peace building and peace education for inner peace and tranquility

Peace building is one of the greatest challenges we have today in the global world. It seems no region of the world is immune from conflict and violence with immense damage, untold grief, and the impoverishment of millions of people (Sisk & Kane, 2018).

Need for inner peace and tranquility

Inner peace can be developed and nurtured using mindfulness practices. Gifted students with their sensitivity to global issues and their intensity are deeply troubled by global issues and problems.

Remez Sasson (2017) the founder of Success Consciousness, described inner peace as a state of being emotionally and mentally at peace and in control of one's mind, moods and reactions. Sasson suggested using meditation and yoga to strengthen and develop inner peace. In his book *Peace of Mind in Daily Life*, Sasson said inner peace can increase tranquility, inner strength, and power which enables one not to be swayed by events, hardships, difficulties. He said that with inner peace one can maintain inner poise, clear judgment and common sense.

Peace heroes

The Peace Museum of Vienna (PMV) mission is to introduce historic as well as contemporary individuals who dedicated their lives to promoting peace. The Peace Museum has a research team which nominates peace hero candidates. The goal of PMV is to provide a global stage with a network of at least 5,000 peace heroes by 2020.

Selected notable peace heroes include:

Linus Pauling, an American chemist the only person to be awarded two unshared Nobel prizes, one for Chemistry and the other for Peace.

Mahatma Gandhi a primary leader of the independence movement of India and advocate of nonviolence who influenced the world to consider a peaceful form of civil disobedience.

Wangari Maathai, a Kenyan environmentalist and political activist who initiated the Green Belt Movement, planting thousands of trees with the help of women who were unemployed.

Nelson Mandela, a South African activist who was jailed for twenty-seven years for opposing racial segregation in South Africa. On his release he practiced forgiveness and compassion and became the first black president of South Africa.

Martin Luther King, Jr., an American minister and leader of the Civil rights Movement in the United States. He said as long as the mind is enslaved, the body can never be free

These Peace Heroes made significant contributions toward national and international peace and manifested an inner sense of peace and tranquility in their lives.

Education programs working with students

The City Montessori School in India

The City Montessori School (CMS) is in Lucknow, India. CMS's major objective is to provide students with spiritual, moral and material knowledge. The school serves Pre K-12 grades with 29,000 students. The mission of the school is to promote world unity and peace by shaping future generations as world citizens (Sisk & Kane).

The Peace Boat

The Peace Boat student program was founded in 1983 to educate students for peace and sustainability through educational voyages. Students attend lectures and workshops onboard the ship and in ports of call. They approach peace and sustainability related studies using conflict resolution. Students come from Palestine, Israel, Serbia, Croatia, Cyprus, India, Pakistan, Colombia, the United States, Korea, China and Taiwan. Peace Boat helps student learn about peaceful conflict negotiation so that when they return to their homes they can work for peace (Sisk & Kane,2018).

Zone of Peace

Jack Kornfield (2015) a Buddhist teacher suggests that you make a zone of peace for yourself, by turning off the news, meditating, listening to Mozart, and walking through the park. In his book *Bringing Home the Dharma: Awakening right where you are*, Kornfield said we can stop and begin to heal our own suffering and fear with meditation and inner transformation. Following his advice, we can learn to make our own hearts a place of peace and tranquility.

Conclusion

Through the eyes of Thich Nhat Hanh and Jon Kabat-Zinn, two very different individuals, the Art and Science of mindfulness was explored. Both individuals demonstrated that you can step off the treadmill of daily stress and change and enter into the present moment. With its emphasis on being fully present in the moment and not judging or criticizing, mindfulness is able to help us begin a path of compassion and most important self-compassion. Mindfulness is the current topic of numerous documentaries, magazine articles and scientific papers, and mindfulness training is widely practiced in hospitals and in the corporate world. In addition, schools are offering mindfulness training for students and teachers and teachers who teach mindfulness are reporting that students show increased attention to learning and kindness toward each other. Finally, the work of affective neuroscience (Davidson, 2011) shows convincing data that people who practice mindfulness meditation have positive changes in the brain, and this opens new paths for studies on mindfulness and brain research (Sisk, 2017).

The transformative nature of mindfulness for gifted students and their teachers, as well as for parents and their children holds high expectations and hope for greater development of individual potential. As more schools integrate mindfulness into their programs, the results will be amazing. Being able to generate positive emotional states, knowing how to use mindful action are skills gifted students will need to not only transform themselves, but to reach out and transform others by addressing real problems in their schools, communities, and as adults in society. The question that so many gifted students ask is "How can I help?" Mindfulness practices provide the essential skills they need to make a difference and to help (Sisk & Kane, 2018).

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About the Authors

Dorothy A Sisk, Ph.D., is the Conn Professor of Education at Lamar University. She was the Director of the U.S. Office of Gifted and Talented; a teacher of the gifted; a district supervisor of gifted education; and coordinator of gifted education at the University of South Florida. Dr. Sisk is a founding member of the World Council for Gifted and Talented Children (WCGTC) and served as president and executive administrator. Her major interests are leadership and talent development, and effective education intervention for high potential and diverse gifted students.

Michele Kane, Ed.D., is Professor Emerita in Special Education from Northeastern Illinois University, where she coordinated the Master of Arts in Gifted Education program. She has been a frequent presenter at state, national, and international conferences. Her leadership positions include being President of the Illinois Association for Gifted Children, Chair of Global Awareness Network of NAGC, and currently Chair of the Parent and Community Network of NAGC.

Address

Prof. Dr. Dorothy A. Sisk
The Gifted Child Center; Lamar University, Beaumont, Texas, U.S.A.
e-Mail: dorothy.sisk@lamar.edu

A Conversation with Bruce Uhrmacher: Aesthetics, Beauty, Talent and the Arts

Jayson Evaniuck; Michael F. Shaughnessy
Eastern New Mexico University, USA

Dr. Bruce Uhrmacher is Professor of Education and the Director of Curriculum and Instruction at the Morgridge College of Education of The University of Denver. He is the faculty advisor for the Aesthetic Education Institute for the University of Colorado. His research interests are in arts-based education, qualitative research, alternative school settings, Waldorf education, and curriculum theory and practice. This interview took place January 7, 2019 .

JE & MS: ***First of all, how did you first get started in working in the arts and aesthetics education?***

I have always had an interest in the arts. When I was growing up I wanted to be a cartoonist, but I learned early on that I didn't have the talent. I found myself advocating for the inclusion of the arts early within my career. I was teaching at a public alternative high school in Ogden, Utah (c. 1980) as one of three teachers. All three of us were responsible for teaching the entire curriculum to the school's thirty students. I was the one who made sure that we included the arts. Often, I'd arrange a guest speaker from Weber State to teach the students something related to the arts. One time, students learned how to make paper. Another time they learned about fiber arts.

While I was reasonably good at black and white photography, I never saw myself as an artist or an art educator. In fact, I was certified in social studies and I set out to be a social studies teacher.

When I chose to study at Stanford with Elliot Eisner, my interest was in exploring exciting ideas about curriculum and qualitative research. I was very drawn to educational criticism and connoisseurship. I didn't plan on utilizing his art education ideas, though I did sit in on one of his art education classes. Given that Eisner was one of the foremost educators in the arts, I thought I may as well take advantage of that.

Fast forward to my first years as an assistant professor at the University of Denver (DU), my dean asked if I would attend a meeting for all those interested in the arts in the Denver community. This was about 1992. It was an extraordinary meeting in that it was perhaps the first and last time that everyone in the cultural arts community—The Denver Art Museum, The Children's Museum, etc.—met in one room. At the end of the meeting, I was

approached by several individuals from the organization Young Audiences. They organized an Aesthetic Education Institute of Colorado (AEIC), held each summer for K-12 teachers.

While the Institute was being directed out of the University of Colorado/Denver at the time, they were hoping to make a switch to DU. I was at the right place at the right time for this kind of opportunity. And, of course, having studied with Elliot Eisner was a strong advantage for me. Interestingly, however, my work with AEIC was about integrating the arts, and as many readers of this interview know, Elliot was all about discipline-based art education.

JE: ***Can you briefly discuss your work with the Aesthetic Education Institute of Colorado and the importance of this institute?***

Sure, but first, a few clarifications in terms of names and time periods. The Aesthetic Education Institute of Colorado (AEIC) began in the late 1980s and was initially hosted by the University of Colorado/Denver and Young Audiences. AEIC was loosely based on the ideas of the Lincoln Center of New York, but the Coloradoans who conceptualized and organized the Institute quickly made it their own. For example, AEIC has always utilized local artists in various art disciplines rather than focusing on one artist, as I believe the Lincoln Center used to do. In any case, the local chapter of Young Audiences eventually changed its name to Think360Arts. Also, AEIC would later become the Creativity Institute for Teachers. So, today, just to be clear, the Creativity Institute for Teachers is organized by Think360Arts and the Morgridge College of Education at the University of Denver.

Years ago, we held a two-week summer institute. We hired five local artists, generally one from dance, theatre, music, creative writing, and visual art. Our goal was to "awaken the artist within," and to get participants in touch with the creative process. It was not about producing artists. No way we could do that in such a short time, but we could help participants use their imagination, and become actively engaged in the arts. Besides the behind the scenes organizing, my role at the Institute itself was to deliver the lectures on aesthetics. I inherited this task from a wonderful University of Colorado of Denver professor Georg Gadow, who had a brilliant understanding of aesthetics from a European point of view. I had sat in his lectures and I found them inspiring. But I knew early on that his abilities were not mine; I could not deliver such lectures. So, I built on what I knew, which were mostly focused on the ideas of John Dewey and Elliot Eisner.

Although my lectures were very rough those early years, I did have the angle of tying aesthetics to education in practical ways, so my audiences were patient with me. In time, I had my own ideas about ways to include the arts in schools, and thus, I was able to provide some originality to my lectures. As one quick example, I had this notion of how to utilize what the participants were learning at the Institute in schools through stages. My 2007 essay with Christy McConnell Moroye, entitled "Instituting the Arts," covers some of these elements.

My ideas were really pushed along after Eisner visited Denver in 2006. *Think360Arts* held a meeting in which Elliot learned about what we were doing and asked pointed questions about our aims and goals. The Institute then attracted educators from all over: K-12, all subject areas and it included, rural and urban settings I did not want to create a "model" of arts education. Models seem to come and go; they also seem to fit some contexts and not others. I was trying to appeal to a variety of participants and I thought the creation of a new model was not the best approach. But Elliot really pushed us to create a vision unique to our purpose. I took Elliot's recommendation to heart and during my sabbatical, with two key student assistants, Kristen Bunn and Christy McConnell Moroye, and a few others as well, came up with this idea of CRISPA. One might note, however, that the acronym came later and in my first paper on what would be called CRISPA (see "Toward a Theory of Aesthetic Learning Experiences, 2009) I did not have that acronym. I used the term 'perceptual teaching" and I still use that term as a synonym for CRISPA.

In short, I reflected on what I had learned by watching artists work with teachers and then I cross-checked those ideas with Dewey's. For example, I noted that all the artists employ risk-taking. They ask participants to take risks in big and small ways. For some participants, just showing up at the dance workshop is a risk. For others it may be trying another art form. Thus, risk-taking was a theme. I then cross-checked this theme with John Dewey's ideas as found in *Art as Experience*. You will see that each of our themes is mentioned in Dewey's book. I mentioned that at one time the Institute lasted two weeks. Today we do the Institute in about five days. But it still encompasses the major organizational style. We have artists do a focus piece to demonstrate their artworks. The artists all conduct workshops to help participants engage in their arts and in the creative process. The Institute also has what we call bridgebuilders, who assist the participants in making connections between what they are learning in the artists' workshops and their own teaching. The lectures I provide today are discussions of CRISPA, expanded below.

JE & MS: ***Your Aesthetic Themes of Education (sensory experience, imagination, perceptivity, active engagement, risk-taking and connections), which you explore in an article of the same title, are insightful. Can you discuss one or several of the themes, which you view as distinctive themes within the realm of previous Aesthetics Education (Greene, Smith, Eisner, Huebner, etc.) work****?*

As I mentioned, these themes were drawn from empirical investigation as checked by philosophical analysis. I watched artists work with educators and from those interactions derived key ideas about artistic educational practices. I then examined John Dewey's *Art as Experience* to see if those ideas were discussed. Now, having read Dewey before, I had a good idea that the ideas of CRISPA would prevail, but I was surprised that each term was stated specifically. Not in the order, or in the organization of my ideas, but they were there. I don't think Greene, Smith, Eisner or Huebner would argue with my themes, per se. They have each covered similar concepts. I suppose one that stands out might be risk-taking. Again, each of the other authors would likely agree with risk-taking, and in their own ways, they have discussed it, but none, in my estimation, hit the theme head-on. In my 2011 essay "Risk-Taking and the Dance of the Blessed Spirits," for instance, in that essay, I define aesthetic risk-taking as: "the willingness to participate in actions that deepen the learning experience by acting outside one's comfort zone, and, therefore, opening oneself up to new and novel ideas, emotions, and ways of being."

I believe this is an important aspect to the educational process. I worked with a theatre artist, Birgitta DePree who emphasized that schools should be places where students take risks and accept that they don't have to be perfect to be learning.

JE & MS: ***You have edited a book on Elliot Eisner and had the privilege of studying with him at Stanford University. What are some of the ways in which Eisner's work has left a mark on your approach to Aesthetics Education?***

There were so many ways. To begin, he introduced me to major writers on aesthetics including but not limited to John Dewey, Leo Tolstoy, Susanne Langer, Harry Broudy, and Maxine Greene. At the time I was studying with him, he was engaged in exploring Nelson Goodman's ideas. Eisner taught a class called Aesthetic Foundations of Education, and I appropriated that title, with some of the ideas he taught me, in a class I teach at the University of Denver. Now my class is very different in some striking ways (e.g., I focus on the implementation of aesthetic ideas which he did not), but the inspiration was from Elliot. In addition, as I indicated above, Elliot pushed me to think through what we were trying to accomplish with our workshops at our Aesthetic Education Institute of Colorado. CRISPA came out of my deep dive into ideas and Elliot was the one who pushed me along that trajectory. Later, he also looked over my initial paper on CRISPA and gave me a nod of approval. (Nel Noddings, by the way, a Deweyan scholar whom many of your readers would know, also gave me the thumbs-up on the CRISPA paper.) Another major idea I learned from Elliot was to

be pragmatic about aesthetic theory. Elliot did not have a need to hold onto one theory of aesthetics. He was comfortable utilizing several different theories depending on his interests and purposes at the time. This was and continues to be a powerful idea. Joseph Schwab noted that every theory is partial and incomplete, and so it is wise to be eclectic in utilizing theory. While I don't know this as a fact, I suspect that Elliot took this advice from Schwab to heart. And I do as well.

JE & MS: ***Since this is an Aesthetics Education focused interview, I would be remiss if I did not give you a chance to openly reflect on the Aesthetic Realm. That said, Harry Broudy (1972) in his Enlightened Cherishing remarked that 'The quality of life is measured by the repertory of feeling which pervades it. Life is rich if the repertory of feelings is large and the discrimination among them fine. Life is coarse, brutish, and violent when the repertory is meager and undifferentiated. Aesthetic education's role in enlightened cherishing is to enlarge and refine the repertory of feeling.' What are your thoughts on this statement?***

I love it. At the end of each of our Institutes, I provide a concluding narrative. I'm going to provide a rough sketch of it below and you will see that it reflects and expands on Broudy's remark:

This has been a terrific Institute. If you were like me, you've worked hard all day yet had fun at the same time. AEIC is both demanding and invigorating simultaneously. It is however, hard to explain this Institute to friends or even your loved ones. Perhaps you came home, tired, and talked about how hard you worked, how little time you had to relax, and just how rigorous the Institute was. But what did your friends or spouses see you come home with? Not stacks of books from the library. And you weren't laboring over writing some kind of major thesis in the evening.

No, you would come home with home-made journals. Maybe your loved ones noticed you making odd bodily gestures from the refrigerator to the stove--3 or 4 times and then you announced, 'let's take it outside.' Or maybe you tried to get your family to play a call and response with kitchen pots and pans in rhythmic beats.

The activities we engaged in were fun, but the implications are serious. We are talking about creating classrooms where imagination can be fostered and where creativity is treasured. Without imagination and creativity, democracy would wither, industry would come to a halt, and life would become bland. When we talk about the importance of art we are talking about the quality of present experience. And when we talk about the quality of present experience we are talking about nothing less than the saving of some children's lives. We are truly talking about art for life's sake. Our methods are fun, but our work is serious indeed.

Educator and philosopher, Maxine Greene once said, 'It may be the recovery of imagination that lessens the social paralysis we see around us and restores the sense that something can be done in the name of what is decent and humane' (1995). If so, then I believe it will be the arts that move us to recover our imagination and to become more human.

While it may seem daunting to most of us to even try and rework the gargantuan institution of schooling, what I learn from this Institute over and over again is what it is that schooling and life is all about. In short, to quote Csikszentmihalyi and Robinson (1990):

> Aesthetic experiences are evanescent whose value is discounted when we think about issues such as power and wealth. But another way to look at value involves recognizing that the essential point of existence is not how much people own or how much power they have but the quality of their experiences. The value of a person's life--whether it was filled with interesting and meaningful events or whether it was a sequence of featureless and pointless ones--is determined more by the sum of experiences over time than by the sum of objective possessions or achievements.

JE & MS: ***What have we neglected to ask you****?*

If it is appropriate, I'd like to end with a few recommendations that may interest your readers. First, our Creativity Institute for Teachers is open for anyone anywhere. One can find more information about it at: https://think360arts.org/

The Institute is generally held in mid-June.

Second, we have a website with information about CRISPA. You can check it out at: http://www.crispateaching.org/

Third, there are a number of excellent blogs regarding progressive orientations to education that one could follow.

I'd like to recommend two. My colleague at the University of Denver, Paul Michalec has one that can be found here: https://morgridge.du.edu/blog/blog-dr-paul-michalec/

And one of my former students and now a colleague, Bradley Conrad has one entitled Tales from the Classroom: https://www.talesfromtheclassroom.com/Finally, I'd like to say that I very much appreciate this opportunity to be interviewed and to provide some remarks about my life and ideas about aesthetic education. I am thrilled to have been a recipient of the 2018 Upton Sinclair award. For those who wish to follow my upcoming work, be on the lookout for my tying together the arts, aesthetics, and environmental concerns, under the heading of aesthetic eco-mindedness (see McConnell Moroye & Uhrmacher (2018) for one exploration) and eco-educational criticism and connoisseurship**.**

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About the Authors

Jayson Evaniuck is currently an Assistant Professor of Educational Foundations at Eastern New Mexico University in Portales, NM. He received his doctorate at the University of Memphis. Prior to his current position, he spent 16 years teaching high school history and geography. His current research interests are the work and thought of Harry S. Broudy, Curriculum History, and the intersections of New Mexico history and education.

Michael F. Shaughnessy is currently Professor of Education at Eastern New Mexico University in the Department of Educational Studies in Portales, New Mexico. He received his doctorate from the University of Nebraska, Lincoln, and has done post-doctoral work at George Washington University in Washington, D.C. and at Texas Tech, in Lubbock, Texas and has authored, co-authored, edited or co-edited more than 50 books. He currently serves on the Editorial Boards of several national and international journals.

Address

Prof. Dr. Michael F. Shaughnessy;

Eastern New Mexico University; Portales, New Mexico 88130, USA

e-Mail: Michael.Shaughnessy@enmu.edu

Creative Pathways:

Catalysts in Gifted Education, Talent Development and Creativity: An Interview with Dr. Dorothy A. Sisk, Lamar, Texas

Taisir Subhi Yamin
ICIE, Ulm - Germany

Fred A. Bonner II; Stella L. Smith
MACH-III, Prairie View A&M University, Prairie View - Texas, USA

Taisir Subhi Yamin (TSY), Fred A. Bonner II (FB) and Stella L. Smith (SS) interviewed internationally renowned theorist Dorothy A. Sisk (DS). The interview took place at the ICIE 2019 conference held at Prairie View A&M University in Houston, Texas.

TSY: Thank you so much. Dorothy, can you explain what motivated you to enter this field of knowledge?

DS: I happened to be at the right place at the right time! When I first started teaching in Garden Grove, California, the state of California was beginning to move forward to serve gifted and talented students. And in my graduate work, my classroom professors were Ruth Martinson, the editor of the Marland Report and Juliana Gensley an original Terman student. They were very close with Jeanne Delp who was our district gifted supervisor. I would be teaching and look up and there would be Ruth and Juliana observing my gifted students working on their projects. The affirmation and motivation I received from these three women propelled me toward seeking a Master's degree and culminating with a doctorate in gifted education.

TSY: ***When did you start working in this field? 10 years ago?***

DS: Now I know why you called me a legend! I started teaching in 1958, and there are probably people in the audience thinking, 'I wasn't even born yet' and I earned a MA in l960 and my doctorate in 1966. I have been working in this field over 60 years!

FB: That is wonderful. So, what kind of major challenges have you faced in the field?

DS: I think the major challenge that the field faces and that I faced is the achievement gap between low income and minority students and other students. Many schools still use achievement tests as part of the identification process, and these students are behind before they enter school. In addition, we have an attitudinal problem in that teachers don't see that highly active male, an African American student who asks a lot of questions and gets up and moves around, as gifted. They tend to see that student as having ADHD or another type of learning disability.

When I taught at the University of South Florida, as an assistant professor, I worked closely with the learning disability supervisor in Tampa. She called me and said, "Can you come down to my office, I have something I need to show you." She had a stack of Weschler Intelligence Scale tests and she said, "All of these students were nominated for the learning disability program, and when they were evaluated, they are testing gifted." We have a major problem with teachers' perception of gifted students. Changing that perception is a major challenge. Another challenge is helping teachers realize that if children are in your classroom, you don't require them to do everything that everybody else does and then additional work. Teachers need to differentiate the curriculum for gifted students so that they will be engaged in work matching their interests and abilities. We have a big challenge with this.

FB: ***How did you become involved internationally?***

DS: Internationally? It began with a wonderful invitation from Joe Renzulli. He called and said, "I have been invited to Henry Collis' international conference in London and I can't go. As a delegate, would you like to go?" and I said, 'Sure.' I attended the conference and while we were there, Harold Lyon (then the director of the U.S. Office of Gifted and Talented), said: "why don't we start an international conference." He grabbed a small plastic globe and started walking around asking people to place money in the globe. They became instant members of an organization that was going to be founded. When I returned to the United States, I was asked to take over the position directing the U. S. Office of Gifted and Talented. Seven individuals (Dan Bitan from Israel, Levcho Zdravchev from Bulgaria, Bob Sawyer from California, Elizabeth Neuman from Columbia University, Alex Dupont De Bie from Delaware, Henry Collis from the U.K. and me) met in San Francisco, sat down and crafted a constitution, and secured 501 C designation. We were off and running.

SS: ***Can you describe your most significant accomplishments and contributions?***

DS: I think my most significant contributions were made when I was directing the Office of Gifted and Talented. I had a small budget of 2.5 million, which really, at that point with the estimate of 2.5 million gifted students in the United States, I had a dollar per student. I didn't do things like most directors; for example, if I had a report to deliver to Congress, I didn't ask an aide take it over. I would walk over and introduce myself to the legislative assistant, who usually was the individual who made sure whatever you brought over got a "hearing." They would take the time to talk to me about the issue or the report, then they could share that with their legislator.

Also, at that time, we were very fortunate to have an advocate in George Bush who was vice president during my stint in D.C., and he suggested having a cookout at his home, and he said. "I will invite every senator and every member of the House of Representatives, and we will have a cookout about the gifted'. I replied, 'Wonderful, and I will go to Philadelphia and locate one gifted child to interact with each of the senators and house members. The Supervisor of the Gifted in Philadelphia brought 90 of her gifted students in grades 2-8 to D.C. our cookout. I told the students, 'When you get to the Vice President's house go over and introduce yourself to one of the legislators and tell them about your program.' One 2nd grade girl walked over very quickly to one of the legislators (Rep. Shirley Chisholm) who placed her on her lap and started talking to her. It was a phenomenal experience as the gifted students eagerly interacted with the legislators. Vice President George Bush jumped up on a picnic table and started talking about the need for gifted education. Of course, I am listening very carefully to see, if his facts are accurate and they

were! This was an amazing advocacy event, and when the legislators went back to their offices, they helped us get the funding for gifted education.

Interestingly, later on when the son George W. Bush became the Texas Governor, I had a project with his wife, Laura called *One Hundred Mothers Read*. I gave one hundred mothers little tape recorders, and they were to read to their child each night. I taught them a thinking model that involved asking five questions to their child (after reading a story). The questions were based on Calvin Taylor's model. Laura invited us once a month to the Governor's home to have lunch and talk about our projects. I remember telling the Governor how his father jumped up on the picnic table and started talking about gifted education, and how he was factual and enthusiastic! Governor Bush said, "My father is a quick study." So, I guess when you asked, "What did you accomplish?" I think making sure that we had funding to provide projects for local schools and states was an important accomplishment I like the notion of changing one person and the domino effect, as they in turn change others. Over the years, I had many teachers in my classes who became "student talent scouts". Those teachers are my finest accomplishment.

TSY: ***Can you tell us more about your involvement at the international level because you have been in several countries and you were doing a lot of capacity building, inspiring teachers in different cultures and different countries?***

With the First Lady Laura Bush

DS: When we first started the World Council, we had a vision of four divisions in the different parts of the world (North America, South America, Europe and Asia). The only one that really evolved was the Asia Federation. That group has provided conferences and substantial training in gifted education for over 40 years. The one that was supposed to be in Canada and the United States never was developed, nor was the one in South America. However the World Council of Gifted and Talented Children (WCGTC) has remained strong and every two years, there is an international conference. These are well attended because many countries need training for teachers and the information provided by WCGT is greatly appreciated. The 2020 conference is in the United States in Tennessee.

Becoming involved with the International Centre for Innovation in Education (ICIE) also has made a phenomenal difference in my scholarly work. Traveling to several international conferences as a speaker and submitting articles to the ICIE journal helped ensure that I kept abreast of gifted education in other countries. I served as executive administrator of WCGTC for 10 years and edited their journal. At one interesting point, the journal was published by Bulgaria ---at no cost to WCGTC! We were very fortunate to have people like Levcho Zdravchev who was one of the seven founders of WCGTC; he attended every WCGTC conference. The first president of the World Council was Iraj Bromand from Iran. The seven executive member met at his home in Teheran and discussed activities that we could sponsor. We decided to start a school for gifted students in Teheran. When the Shah was displaced in the revolution, Iraj was very fortunate to be able to leave Iran; he is now is living in California now. Much of what we

were able to accomplish In Iran included breaking down some of the barriers that existed between teachers and students, and introducing Art and Music to the curriculum. Education in Iran was quite formal and the idea of working in small groups was brand new to them. They were used to lecturing and direct instruction, so we had some challenging and exciting times introducing problem based collaboration learning and differentiated instruction.

SS: ***So, what do you wish that the researchers in this field would know? What knowledge would you wish for them to have?***

DC: I would like for researchers in the field to engage in more action research, such as the use of opportunity classes to help identify potential gifted students. In Puerto Rico, working with the Department of Defense, a Supervisor of Gifted said to me, "I would like you to go in each one of our classrooms and do a demonstration, so the teachers can see how these strategies can be applied in Kindergarten through 12." I'm thinking, 'you are lucky you're talking to me because I can do that', but nobody else that I know could or would do try that. I began with the kindergarten and gave them a little lesson with a lot of critical thinking in Reading as I posed questions. You could see the gifted ones raising their hands, leaning forward, and suggesting creative endings to the story. They asked me to do a parent presentation that evening. As I was talking to the parents, one mother walked up to me and said, "My daughter told me I had to come tonight, and she said you were so kind to the students." She shared that she was the Lieutenant Colonel's wife and said, " I will do everything I can to provide gifted education for our children."

As I was walking out, that precious little 2nd grade student, said "thank you for being kind to us." I wondered what she perceived as being kind! Talking with them? Giving them praise for their responses? That experience taught me a great deal about what can be done in terms of finding that little spark of giftedness by asking the right questions and providing open ended activities. When you do that, giftedness just pops right out and those children can then be provided more activities to demonstrate their giftedness. Eventually, they can be identified with formal testing procedures. I would like to see researchers do action research to find high potential students and work with them and watch them demonstrate their talents and abilities.

TSY: ***Thank you so much. Can you please expand on the opportunities and specific strategies.. How can teachers stimulate the development of excellence in their schools?***

DS: I have two online classes that I am teaching with eighty eight teachers in each class. And you might think that in an online class you wouldn't have much interaction. I find I have more interaction online than I do in face-to-face classes! The teachers are not only telling me what they're doing in their classes,(An Exceptional Child Class), but they're telling me what they're learning about themselves. They describe what they are learning about their children. They highlight their commitment to stimulate excellence in their schools. These teachers have become advocates, sharing articles they have to read with their principals and other teachers. They have asked for public relations people to work with the parents to let them know what the law says about exceptional children, and that they have a right to see what is happening with their child in their individual educational plan.

Teachers are on the front lines and they can be role models of excellence. As teachers stand in front of their class, greet the students as they come into the room, and provide mindfulness activities to help them settled down and be calm, other teachers will be watching and saying 'wow she's at her door every morning' and her students are calm and ready to work, We had a program in Pensacola, Florida where the teachers actually went outside and waved to the students each day as they left on the bus. Brown Barge School had a warm atmosphere full of caring and compassion, and their students achieved! These are things we do not talk enough about a lot in education. The essential link between caring, empathy, compassion and excellence is amazing. As students feel they belong, their achievement escalates The belonging is essential.

TSY: ***Yes, when children feel like they belong in a particular space, learning can be activated.***

DS: Exactly and when the children are not doing well in school, they sometimes say that they feel that they do not belong.

In Thailand

TSY: ***Can you please explain some of the strengths and limits of "Gifted Education?"***

DS: I think one of the strengths of gifted education is we have educators who are on the firing lines working 150%. These individuals are putting themselves on the line to ensure that we are following the rules and the regulations. This is also a weakness because if we follow every rule and regulation, we are going to miss a lot of opportunities. One thing that I would like to see more of is teachers with "grit."

When I was a teacher in Inglewood, California the Superintendent's office was right at the top of the stairs, so he could see who was coming and who was going. If you walked by, he would put his head down, if he didn't want to talk with you. But, if he wanted to talk with you, he would gesture for you to come in. As a classroom teacher. I was taking a reading course. I asked the Superintendent if I could take the students out of their routine reading and encourage choice and free reading I shared how I went to the library and they provided us a box of books for the students to read. He ooked at me remembering I was a first year teacher, and said, "Yes, you can do that and I look forward to the results." The assignment I had for my Reading Research class with Dr. Opstad, and I am amazed I still remember his name from 1960 at California State in Long Beach. I listed all the books our students had read and I submitted a formal paper.

On the day that I reported, I brought three of my students with me and they talked about their free reading. Afterwards Dr. Opstad said to me: '"You showed grit. What made you think you could bring those kids to class?" I said: 'I didn't ask, I just brought them'. So, I think part of my behavior was grit and then part of it was courage and risk taking. The program made a big difference in the achievement of the students. They were in the 3rd grade and their Reading on the California Achievement Test ranged from grade 4-8.

TSY: ***Do you think still we are suffering from some weaknesses in gifted education?***

DS: The biggest weakness we have is our identification procedures. We still rely on a cut-off score on an IQ test and we miss many underachieving gifted students, particularly our minority and diverse students. Some students never even get to be nominated, because the teacher thinks that a gifted child is the one who gets all the high grades, who does assignments, who is quiet, and behaves. In reality, we have gifted kids who don't do everything; they're bored and they have learned to slow down. Teachers do not nominate those students as possible gifted students. Our identification procedures need to be changed. I would like to see opportunity classes in every school, and then employ the RTI that is used in Special Education in which a group of teachers get together and say: "Have you seen Sammy recently?" The teachers share his strengths and weaknesses. The teachers can then tailor activities and strategies to focus on his strengths. Eventually, this student could be nominated for the gifted program.

TSY: ***But are you in favor of special schools for the gifted? You remember you've been in one of them, as I told you in Jordan.***

DS: I am in favor of special schools for the gifted, I am in favor of special classes for the gifted, and I am in favor of cluster groups for the gifted. Also, I'm in favor of parents teaching their gifted children at home. There are many fine multiple ways of providing education for gifted students. For example, when a student who is profoundly gifted as Stephanie Tolan calls them, they aren't going to fit into a regular school. They may need to go to college early or go to a special school. There is a fantastic special school for gifted in California: the Mirman School. They have gifted students who are 4 and 5 years above grade level in achievement, and they differentiate the curriculum for the students.

FB: ***What advice do you have to the conference attendees?***

DS: When I was attending a conference recently, one of my colleagues asked me "why do you go to these conferences, and go to all these sessions?" I responded because I still have something to learn, in fact a lot to learn. One suggestion I would make to conference attendees is to fold a sheet of paper in three parts, and on one side, jot down the points that you want to remember, and on the second folded side, the things you just plain don't understand and add little question marks to remind you that you need to research those points. On the 3rd fold, list ways you can apply this new information.

After a session, you will have a list of information of what you have learned, things that you didn't understand, and some information or strategies that you can apply. I use this strategy with my graduate students when I attend conferences with them. I seldom read that I don't write all over the book. I am reading a text that someone sends me ,and if there's a word that I don't understand, I underline it and look it up afterwards. As Carl Rogers said, we are all in the process of becoming, and I'd like the conference people to remember that statement, they are in the process of becoming!

SS: ***Excellent. What are your plans for this next year?***

DS: This next year I have promised Tom Kemnitz our editor from Royal Fireworks that I would write another book on mindfulness. The one I wrote with Michelle Kane *Planting Seeds of Mindfulness* was a good beginning, but I would like to write another one on mindfulness for teachers, parents, and business people. Maybe it could be called *Planting Seeds of Mindfulness for Everyone.* Belle Wallace, John Senior and I just finished editing a phenomenal handbook on gifted education published by SAGE. The Sage *Handbook of Gifted and Talented* has 41 chapters of international authors, and the response to this book has motivated me to start writing!.

TSY: ***Can you shed some light on these two books that you already have in front of you?***

DS: I've traveled all over the world talking about the book *Spiritual Intelligence: Developing Higher Consciousness*. I wrote this with E. Paul Torrance.

TSY: ***And last year you have been in Jordan.***

DS: Jordan, yes, and that was a wonderful opportunity to share the concept of higher consciousness and the theory of spiritual intelligence with your educators in your school for the gifted. The teachers asked many deep questions as they tried to see how spiritual intelligence could be integrated in their curriculum. I also presented at ECHA in Dublin, Ireland on spiritual intelligence, and mindfulness. There is considerable interest in spiritual intelligence, but there is an ever growing interest in mindfulness which is an essential part of spiritual intelligence. Before Paul Torrance and I wrote *Spiritual Intelligence: Developing Higher Consciousness* in 2001, we discussed how gifted students struggle with the deep questions of *Why are we here*?

What is my purpose? These questions are essential in spiritual intelligence. When Paul and I talked with different people about writing a book about spiritual intelligence, we received many different controversial reactions. Many people also reminded us that Howard Gardner didn't include spiritual intelligence in his multiple intelligences, So, Paul and I decided to ignore Howard Gardner's decision to not bother with spiritual intelligence because as he said, there are no universal values. Paul and I vigorously disagreed with that statement; indeed, I believe that there are universal values.

Paul and I used the same format that Gardner used to formulate his multiple intelligences. We examined the field of psychology, Science, and ancient wisdom to form a foundation for the concept of spiritual intelligence. Much of Physics was so relevant, with the different theories of multiple universes, and in researching ancient wisdom, we studied the wisdom of the Essenes. The Essenes were people who lived during the time that Jesus lived, and there is speculation that Jesus studied with the Essenes. The Essenes said while we are here, we are supposed to develop our talents and strengths and then give these back. I remember thinking, 'Holly smoke, that is gifted education'. Our Spiritual Intelligence book was a book of love. I wrote a chapter for James Ogunleye who compiled chapters lauding the work of Paul Torrance.

Writing this book was truly a journey of intellectual discovery and love reflected in our warm and deep companionship. The book has a chapter listing the traits of spiritual intelligence, and strategies that teachers can use to further develop the spiritual intelligence of gifted students. In Texas, there's a big emphasis on reflective thinking, and reflective thinking is very much a useful skill in developing one's spiritual intelligence. The book *Planting Seeds of Mindfulness* with Michele Kane as co-author came out in 2018 and it examines the art and science of mindfulness, It explores mindfulness as a tool to develop spiritual intelligence.

TSY: ***Do you think there is room for spiritual intelligence when we were talking about for example STEM and the STEAM and all these new trends which used to be interdisciplinary? Is there room for spiritual intelligence?***

DS: One of the characteristics of spiritual intelligence is seeing the connectedness between not only people, but to our environment, to the animals, and to the universe. Once you start talking about connectedness to the universe, then you begin to ponder where the universe began. When you ponder these deep questions and thoughts, you get involved in something that is so much bigger than the individual. I think a lot of gifted students (particularly the adolescents), desperately need to see STEM identifying and solving problems of awe. Stephen Hawking's famous comment of "when I find out the answer to the origin of the universe, I will be looking at the face of God," is important to note. He was very definitely one of our greatest scientists. So, yes, I think spiritual intelligence can be vital part of STEM.

TSY: ***That means that it is more associated also with potential creativity.***

DS: Definitely, the creative part of you calls for you to give back your talent, as the ancient Essenes believed. If I'm connected to people, then I want to make a difference. Sometimes when I'm asked to do a presentation, I will share examples of gifted children that have, for whatever reason, been so touched by what is going on in their life that they had to give back. One young girl listened to her brother, who was on a Mormon mission in Jordan talking about children being cold during winter and not having blankets. So, she bought a blanket kit and started making blankets. She encouraged her friends to make blankets They sent over hundreds of blankets. This girl used her creativity and desire to make a difference and she did!

TSY: ***Dorothy, you were involved in making the World Council and many other organizations. As you know,*** **Prof. Dr. Fred A. Bonner II** ***and his team including*** **Dr. Stella L. Smith** ***and other people have created what we call MACH III. So now we have MACH III, we have ICIE, we have other institutions around the world. How might these organizations, collectively, impact the field of creativity, giftedness, and talent development?***

DS: Institutions could cohost conferences and provide a project competition for teachers and students to identify problems and design a solution. The winners would have a scholarship for registration and travel to attend the conference and present their results. Each teacher has the potential of being an investigator and the students can be investigators as well. We have documentation of wonderful examples of teachers using problem-based learning and performing quite well on the state tests instead of worksheets. Indeed, teachers do develop challenging units addressing significant problems, but these need to be disseminated more widely. The organizations could make these materials available perhaps online. This would definitely influence the expansion of problem based learning and hands -on activities.

TSY: ***And also, you were talking about the connection. We are collaborating because we would like to cross the borders, we would like to have more international collaboration and we would like to make it more global. Because we rely more on education to strengthen connections between different cultures and different populations.***

DS: Collaboration can come through the network systems and we need to identify ones that are interested in global collaboration and gifted education. I wrote an article discussing mindfulness and its effect on leadership. I submitted it to an international journal and they received so many hits on it that they sent if off to medical journals. There was considerable interest in examining the effects of mindfulness on anxiousness in kids. So, I think we have people in other disciplines that we can collaborate with, we just need to identify them.

TSY: ***Yes, from different disciplines.***

DS: Yes, exactly.

FB: ***You mentioned that the identification process is one of the critical issues in gifted education, but are there other critical issues in gifted education that you believe need to be addressed?***

DS: One critical issue is that educators are afraid of acceleration. They think if they accelerate a gifted child, the youngster will not have friends. And, the sad part is that he/she may not have any friends anyway! If you are a gifted kid, two years ahead of the rest of your class, and you are in the 5th Grade, you are not the most favorite person. Yet, that youngster could study with 7th Graders and do fine. At the University of South Florida, I tested a little girl whose mother was one of my students in the Master's program. The child was seven, and had a high score of 150 on the Stanford Binet test. So, I said to the mother, 'I think we need to accelerate her from 2nd

Grade.' She said: "You mean place her in 3rd Grade"?: and I said 'No, 4th'. We put her in 4th Grade, and you would never think that she wasn't a 4th grade student since she was a tall girl, and very self-confident. Therefore, when you plan to accelerate, you need to look at the size of the youngster and their social and emotional development. We just don't use acceleration as a program adaptation. The negative research on acceleration is just not there. You have to look at the context and the whole picture of the student.

SS: ***But there is much positive research. You remember the report that was done by Nicholas Colangelo and other people. So, there is a lot of research saying that acceleration is a must and it is needed for many gifted students.***

DS: But educators don't apply this information to gifted students' education. The major reason they don't implement acceleration is their attitude and fear of it.

TSY: ***Maybe is it a political issue?***

DS: I don't think it is a political issue. I think it is an issue related to the myths about acceleration and a lock step mindset of grade level and chronological age.

TSY: ***And they are not in favor of this. Because if we think about cost effectiveness and to meet the needs of the gifted, he or she should be accelerated.***

DS: Acceleration doesn't have to be grade skipping. For instance, if I am a 2nd Grader and doing 4th Grade Math, maybe I could go to the 4th Grade class, take Math with them, and then come back to my class. The first year I taught 3rd grade in Garden, Grove California my national reading test results indicated I had a student, Barbara Blaha, at the 8th Grade level of reading achievement. Barbara did free reading of books of her choice, and then decided how she would like to share what she learned from her reading with the class. She came to visit me last year in Texas. She called and said: "Do you remember me? I am Barbara Blaha." I told her that of course I remembered her. Barbara invited me to lunch with her two sons, and we talked about our 3rd grade class and the things she remembered. At that time, we had a paper caterpillar with segments, and every time a student read a book we added a segment. We had that caterpillar running wild all around the classroom. The principal would not consider acceleration, but Barbara was able to enter college early and now, she is an executive in Disneyland..

TSY: ***But do you think that the alternative will be introducing integrative programs, for teaching thinking skills for example? As an alternative?***

DS: It would definitely be a meaningful activity for gifted students to introduce thinking skills such as Belle Wallace's TASC program.

TSY: ***A number of activities in different frameworks. Teaching for creative thinking, critical thinking, creative problem solving, future problem solving, communication, and collaboration.***

DS: Teaching creative and critical thinking does meet the gifted students' needs and it works quite well in advanced curriculum, with activities differentiated in terms of input, the content, and strategies and the output or product. This would incorporate the Universal Design for Learning, which would be great way to integrate different frameworks.

FB: ***Of course. You were also talking about emotional differentiation. I think you were the first to introduce this type of differentiation. Can you tell us more?***

DS: I felt like a lonely voice talking about the emotional needs of gifted for years with most of the emphasis placed on their intellectual needs. One problem with gifted students is that they can

hide their gift to get along with others. Gifted girls often say: 'I don't say a lot in class because boys don't like smart girls, and they hide their gift'. Gifted boys hide their gift because they don't want to be thought of as the teacher's pet. In some cultures it is not cool to be smart. Another emotional problem for gifted students is the perfectionism that many of the demonstrate. When I was teaching middle school Language Arts and my gifted students would be writing an essay, I would hear "scrunch, scrunch" and a paper would land on the floor. Oftentimes, as I would pick it up, read it and say to the student: 'You know what, let's call this a first draft.' To introduce the idea of a first draft, I asked a friend who was an author to share how sometimes she writes one page ten times! They were shocked, but I had less papers being thrown away. Anxiety is another emotional issue with many gifted students who are perfectionists and have parents who have really high expectations of the them. One of my online teachers said a boy cried because he got an B+ and she said she didn't understand that. I sent an email back to her and said that B+ to him is like an F to you because he wants to be perfect. If I were that teacher, I would let him redo the paper, and I would not deduct the points. Yet many teachers will say 'If you let him do it again, you should deduct the points', or if it is a late assignment you should deduct points. I think we need to be more flexible with sensitive gifted students. We need to be aware that we are dealing with students' psyche as well as their intellectual ability.

SS: ***So, what are the most significant contributions made by the first generation of gifted scholars, that first wave of gifted scholars. What are their most significant contributions?***

DS: Of the scholars of the students that I had or the people who are in gifted education?

SS: ***Your colleagues in gifted education.***

DS: I think probably one of the most significant contributions that has been made by my colleagues is in curriculum development. Notably the work of Joyce Van Tassel-Baska at William and Mary University, through the Javits Grants. Also the contribution of Joe Renzulli with the University of Connecticut Research Institute for over 30 years should be noted. That institute publishes research reports on a regular basis to keep the field up to date. Joe has had a profound effect on the understanding of the nature of gifted and potentially gifted students with his definition of above average intelligence, creativity and task commitment.

Sandra Kaplan, Irving Sato and James Curry contributed through the Leadership Training Institute (LTI) bringing the latest curriculum development and innovative strategies to their participants. In fact, many of the strategies and curriculum our colleagues have developed in gifted education are now being implemented in regular education. Several of my gifted colleagues have said we need to develop some new activities and curriculum. Maybe that could be accomplished with mindfulness to meet the social and emotional needs of gifted students.

TSY: ***I have another question relating to what my friends' question. We saw that in gifted education we have more female scholars than male. And this is different from other disciplines. Especially when we talk about Physics, for example, or Chemistry or other natural sciences. In gifted education we have more female scholars. Why?***

DS: I don't know that I have an answer for that. Indeed we do have many female scholars in gifted education including: Joyce Van Tassel-Baska, Sandra Kaplan, Alexenia Baldwin, Sally Reis, Carolyn Callahan, Barbara Clark, Stephanie Tolan, Nancy Robinson, Belle Wallace, June Maker, Julia Roberts, Maria Helena Novaes de Mira, Zenita Guenther, Erica Landau, Joan Freeman and Dorothy Sisk. Many of these female scholars were gifted themselves or had children who were gifted, so they had a keen understanding of the need for gifted education. We are trying to close that gender gap in the natural sciences by introducing young girls to Physics,

and Biochemistry early in same sex summer institutes. One of my colleagues Otilia Urbina has held highly successful motivating camps in coding with 6th, 7th and 8th grade girls.

FB: ***But still, there is a limited number.***

DS: Females don't go into Physics sometimes because they are fearful of mathematics and when you start talking about Physics, they step aside. Teaching science in a hands-on format and getting undergraduate students in research early has been very successful in increasing the number of girls in science classes and seeking science as a major. We are doing some exciting work in stimulating undergraduate research and holding conference where the students can present their studies here at Lamar University.

TSY: ***Do you think women sacrifice more? You were talking about contribution; there might be a reason behind that. They are raising a family and they may be doing other things.***

DS: Yes, I am keenly aware of that sacrifice with women who are in my online class. They are teaching during the day, they go home, and they are a parent, and a wife. Then they are working on my online class for five weeks. That can be a real problem for females who need to learn self -regulation skills and time management. One technique that I share is to collaborate whenever possible and ask for help. It is also important to delegate tasks in order to maximize whatever you do with good planning.

TSY: ***Another question. You have been working with a number of scholars. Can you tell us some memories about this people? You have mentioned James Gallagher, you have mentioned Paul Torrance and other people. What memories stand out? We would like to hear more from you.***

DS: James Gallagher is probably one of the key people in gifted education, because he had one foot in Special Education and the other in Gifted Education. He was very concerned about twice exceptional children. He was Assistant Secretary of Education when I was in Washington D.C. directing the Office of Gifted and Talented and I saw his ability to work with Congress. He had the reputation of being honest and straight forward in his talking and thinking. I saw him at that level, and then he became President of the National Association for Gifted Children. In fact, the way he became President of the National Association of Gifted Children (NAGC) is interesting. Julian Stanley was supposed to be the next president but he had too many competing demands at the time. I suggested calling Jim Gallagher. While other board members were skeptical of Jim's willingness to take on the leadership role, Jim agreed to be president for the National Association of Gifted Children. Jim was the kind of person who when he saw a need, he would step up to fill that need. He was truly a servant leader. One story about Julian is that he loved to have his colleagues come to his house and his wife would bake cookies for all of us. She was just the most wonderful, and supportive person that Julian needed. When she died, that was really a difficult time for him. He married a second time to an educator who was an administrator at Johns Hopkins University, and they had a strong intellectual bond. At her death, Julian moved into a residential retirement facility and he surprised me with a telephone call telling me he had found a girlfriend and her name was Dorothy.

TSY: ***When he was around 80?***

DS: Yes, he was well into his 80's. They ended up getting married and when I asked him about it, he said that when he asked her why she had never married. She told him "I was waiting for you." I thought that was a splendid answer. Their marriage in late life represented a perfect example of how Julian explored life to its fulfillment.

TSY: ***What about Paul Torrance?***

DS: Torrance was an absolutely wonderful person. In his later years, he suffered from diabetes, and its resulting complications. One fear that Paul had was that people would forget him and he repeated that over and over to me towards the end of his life, saying, "They are going to forget 'what I have done and what I have contributed." I said: 'No, everyone is going to remember what you are doing and have done.' When he passed, it was right after our Spiritual Intelligence book was published, and one of his family members came up and said: "We always knew, that even though he talked about creativity, what he was really talking about was the spiritual nature of a person who is creative."' Paul had a beautiful white cat named Princess; towards the end of his life, his graduate student (who lived in the basement of Paul's home) took Princess into the hospital under his jacket. Princess immediately jumped on Paul's chest and stayed there with him until a nurse noticed her. When Paul died, he left his house to his graduate student with the understanding that he would take care of Princess.

I also have fond memories of Pansy who was one of Paul's students at the University of Minnesota. Pansy loved to tell us how she was sitting in class and thinking 'I want to marry him.' So, she made little spaghetti dinners and invited him over for dinner. I guess, he must have been…in his late 60-ies when they married. Pansy traveled all over with Paul to his conferences. One of my favorite memories is watching Paul and Pansy in Key West at a Whole Brain Conference with Ned Herman. They were walking on the beach holding hands and in deep conversation. Great people!

FB: ***What roles should higher education play in gifted education?***

DS: You mean like graduate classes?

FB: ***Maybe graduate programs.***

DS: Sometimes Higher Education is not our best friend. One of the problems that we sometimes have, particularly here in Texas is if you have a graduate class in Gifted and you don't have 15 students in the class, they don't want to offer the class. If you are not teaching several classes, you may not have a job. I've watched really outstanding professors lose their position in different universities.I am an endowed chair and I am teaching online classes in the Special Education Program. I have provided a Texas Governor's Program each year at since 1990. There is one at North Texas, and the University of Texas in Austin has been providing one as well. These programs provide higher education visibility People in gifted education have to produce. For example, Vanderbilt professors provide programs for younger students on Saturdays and they have summer programs for gifted students. We have to sort of "bootleg" our existence, and we shouldn't have to do that.

Also, if your state doesn't have certification for the gifted, then teachers can teach gifted students without classes in gifted or a degree in gifted educaion. At the University of South Florida where I was for 20 years, the state of Florida had certification requirements for teaching gifted. If you wanted to teach gifted students, you had to have 12 hours in gifted education, and if you enrolled in 12 hours, we could motivate you into getting a Masters degree in gifted education. So most of our teachers were enrolled in the MA program and many of them went on to get Doctorates. Several of them are university professors

FB, SS, TSY: ***So, we would like to conclude this interview and I would like to give you the opportunity to say few words to the audience and to the people who will watch this interview, or read it later on in our journal.***

DS: First of all forgive me for talking more openly about my colleagues than I should have, but I tried to do it with compassion and love. Everyone has strenghts and weaknesses, and I would urge you to look at yourself and reflect on who you are, and who you want to be. Your potential is

phenomental. I love the idea of saying 'not yet.' If you have not developed a certain skill, think that you haven't developed it yet. All of us are always in the process, as Carl Rogers said, of "becoming." Explore! Explore ideas that perhaps threathen you. When you are searching for something to read, reach out to a topic that is new to you. Look at other disciplines! Try to stay in a receptive mode; for example, when people are talking to you, use your "deep listening "and think how you could apply what they are sharing. You will have many opportunites at the conference to learn from others. And then think about the next conference where you can present your work. Hopefully this conference will enrich your content knowledge, skills and introduce new directions for you.

Profiles of Creativity:

An Intellectual Journey: Hisham Ghassib

Renowned theoretical physicist, Prof. Dr. Hisham Ghassib, reflects upon the events and experiences that shaped his world views.

I can safely say that two cultural shocks have shaped the entire course of my intellectual life. The first was the 1967 defeat whereby Israel defeated three Arab armies simultaneously, including the Jordanian army.That devastating defeat was totally unexpected, and, therefore, shook my societal convictions to the core. I was born in Jordan's capital, Amman, in 1950. Prior to the 1970's, Amman was a semi-rural, almost pre-capitalist, country. What shaped my consciousness at the time was, on the one hand, religion, and on the other hand Nasserian pan-Arabism. This naïve nationalist-cum-religious consciousness was shaken to the core by the 1967 defeat.

The second cultural shock was even more devastating. Following the 1967 defeat, I moved to Britain to complete my university education. This sudden mobility from a semi-rural, pre-capitalist, society to a highly industrialized capitalist society not only shook my traditional consciousness, but actually broke it into bits and pieces. I felt my very consciousness torn asunder by shocking events. My naïve religious and nationalist convictions could not withstand the onslaught of the prevailing secular empiricist critical cultural atmosphere in Britain. The ensuing intellectual and emotional vacuum in my mind was truly unbearable. I had to fill it up with a solid alternative. World literature, particularly Tolstoy and Dostoyevsky, was a help. Classical music, particularly Beethoven, Schubert and Brahms, was also a great help. However, they were not sufficient. I turned to Eastern religion, particularly Buddhism. However, I soon realized it was of no help. The state of utter nihilism persisted. I felt the reality of both the external and inner worlds crumbling like a pack of cards. I felt myself questioning the very reality and existence of things and of the self, of the I. Only sense impressions remained almost intact. In a sense, I was experiencing the philosophy of David Hume before reading him. In another sense, I was also experiencing Kierkegaard, Nietzsche, Heidegger and Sartre before reading them. In short, I was beginning to have philosophical experiences.

These experiences prompted me to enter the realm of Western philosophy. This realm managed to replace religion completely, but did not replace my need for music and literature. The latter continued to influence me deeply, side by side with philosophy. Also, at that time, I was beginning to be fascinated by physics. In particular, I was fascinated by the ability of physics to perform precise experiments that accorded precisely with theory without fiddling. That prompted me to choose physics to study at university. Thus, I started studying physics at the University of Leeds. However, it was a painful experience in that trying to grasp physical concepts raised a number of deep and painful philosophical questions. My insistence on logical clarity and coherence drove me to spend much precious time on trying to derive every notion and justify it philosophically. Meanwhile, my existential philosophical experiences intensified, particularly my experience of the strangeness of Sartre's being and nothingness.

I sought deliverance in philosophy. To start with, I found in philosophy a potent expression of my nihilism and pessimism. Schopenhauer and Nietzsche resonated with my state of mind. In particular, I fell under the spell of Nietzsche's fiery rhetoric. Meanwhile, I was beginning to delve deeply into physics, and I was tormented by the question of the meaning of physical concepts. I delved so deeply into this problem that I necessarily delved into philosophy and philosophical questions. I felt the need for philosophical grounding, interpretation and substantiation of these concepts. Kant offered me a partial outlet. However, the main source of my philosophical interpretation was analytical philosophy, positivism, empiricism and, ultimately, linguistic philosophy, including Russell, Wittgenstein, Gilbert Ryle and Ayer. The effect of these analytical methods helped to denude my world and soul of reality and substantiality, and to reinforce my nihilism and emptiness. The world they revealed was indeed a very impoverished world devoid of value. All these orthodox currents, including Schopenhauer, Nietzsche and even Sartre, led me to a spiritual and intellectual cul-de-sac. I soon felt their inadequacy to life and to a proper understanding of physical concepts. Could the world and science be so senseless and inane?

At that time, I started writing feverishly in English as a reaction to the nihilism and senselessness I felt. In particular, I started writing philosophical notes, recording my philosophical experiences and ideas. I also embarked on writing dramas, expressing the emotional side of these experiences and ideas and exploring the practical consequences of these states of mind. Meanwhile, in physics, I found myself wrestling with the Schrodinger equation. I could not accept it as it was presented to me. I spent hours on end trying to derive it logically from more secure foundations. I was also fascinated by its solutions, particularly its almost magical ability to derive the spectra of atoms. It became the model to be emulated elsewhere as well. In particular, I began envisaging the possibility of finding a Schrodinger-like equation that would logically produce the spectrum of the known fundamental particles *á la* the spectra of atoms with regard to the Schrodinger equation. I entertained this false hope, but failed to achieve anything in this regard.

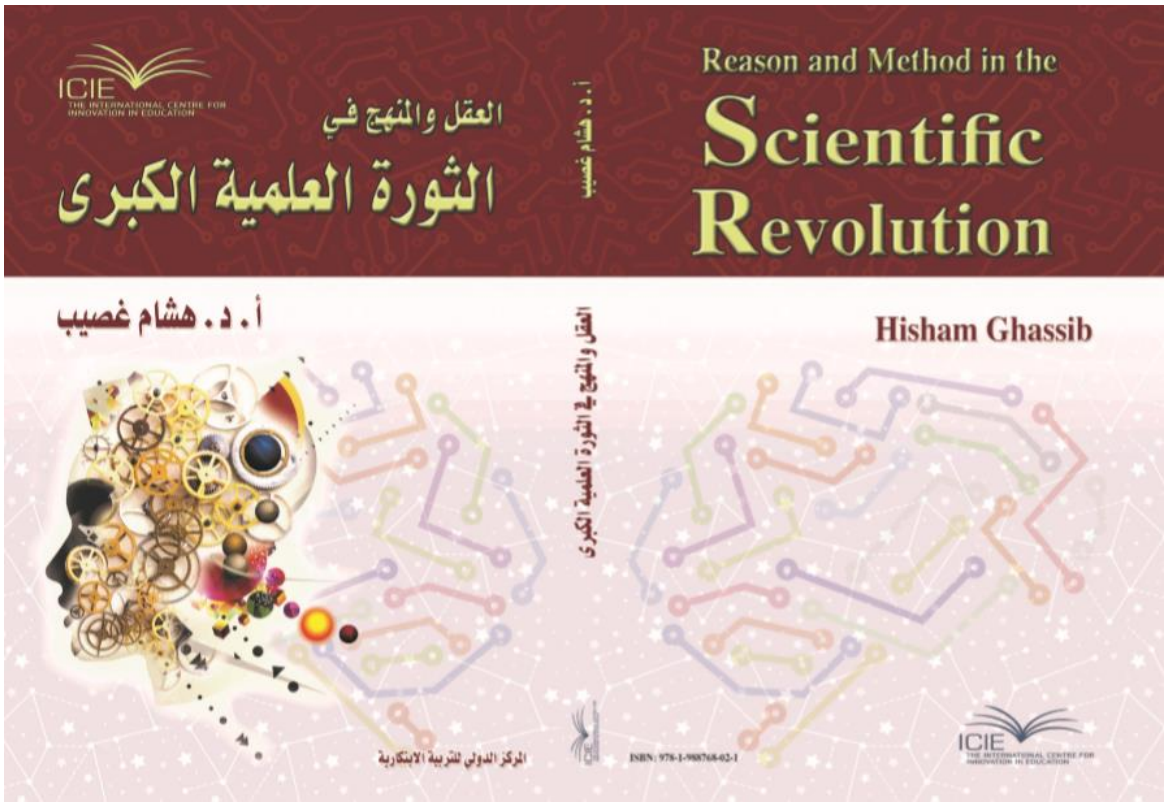
However, this led me to realize that at the bottom of this laborious attempt was the naïve belief that physical theory was basically an axiomatic structure just like geometry—that is, that physical theory could be reduced to a limited set of self-evident axioms. I soon realized that was an illusion, but it drew me towards a deeper study of physical theories, their logic, ground, interconnections, principles of development and contradictions. This has proved to be a lasting research concern. Meanwhile I continued to work on my Ph.D. thesis, which was titled "Wigner's Formulation of Quantum Mechanics and Local Transport

Theory". In this work, I encountered the essential non-local character of quantum mechanics, which was baffling and remained to be baffling.

In that period of my life, a number of self-discoveries occurred which put me on the road to recovery from my spiritual malaise. The first self-discovery was the discovery of the I as a complex structured entity. Prior to this self-discovery, my ontological picture of the world was basically a pure empty impersonal consciousness, almost a Sartrean *en soi*, confronting a chaotic pile of sense impressions and passions. However, I soon realized that, contrary to empiricism, structures and processes are at least as real and immediate as sense impressions, if not more. This led me to the realization that consciousness is a structured entity that constitutes itself as an I, confronting a world of structured things and processes.

My second self-discovery was discovering what it means to be a human being. Prior to this self-discovery, I was victim of a Messianic view of human beings, whereby a human being was a pure tortured soul seeking divine salvation. Even after transcending and renouncing religion, this Messianic view continued to inform my subconscious mind. This manifested itself in belittling needs and their satisfaction. Needs were considered a hurdle to be overcome and suppressed. They were viewed as a problem to be overcome via spiritual practices. My second self-discovery concerned needs in particular. It asserted the body and its needs and helped me to realize that the essence of living was needs and the practices associated with satisfying them. The development of human potentialities emanates from these practices. These potentialities unfold via needs and the practices that aim at satisfying them. Humans acquire their creative and productive powers via this system of needs and practices. Thus, that self-discovery affirmed concrete life, activity, needs and the human body as a specific biological system. It was no longer a pure tortured soul awaiting supernatural salvation. This new conception was mainly Marxian, but partly Nietzschean.

My third self-discovery was the discovery of the truth of historical materialism as



opposed to so-called bourgeois philosophy. At that time, I was feeling very acutely the inanity of British analytical philosophy in all its forms, including empiricism and linguistic philosophy. I was also feeling disgusted with Schopenhauer's pessimism and Nietzsche's euphoric, but basically nihilistic, affirmation of what he called life. I felt that conventional bourgeois philosophy had reached a cul-de-sac. It had failed to offer an alternative to religion and the Messianic discourse. Intellectually speaking, it had landed me into a suicidal state of mind. At that time, I started reading Husserl's "Ideas". However, what attracted my attention in Husserl's book was not its main text, which I found rather conventional, but a Hegelian quotation with which he commenced his work. This glimpse into the Hegelian tradition was a veritable transforming revelation. It brought me face to face with a new and different spirituality, free from the sticky morbidity of conventional philosophy. In particular, it brought me face to face with social revolution as a redeeming social act. I immediately realized that it constituted the alternative I was looking for. It reinstated a new meaning in the fabric of my life. It offered me a potent reason for living a meaningful life. I felt my intellect liberated from the burden of angst and morbid skepticism. This self-discovery opened a window onto the whole Hegelian landscape.

Following this new intellectual experience, I started reading a book titled "Marxism and Christianity" by Alasdair MacIntyre. Each of its chapters was headed with a quotation by Marx or Engels. I was truly overwhelmed by the new spirituality I encountered in their thought. The revolutionary spirit I had found in Hegel was magnified tenfold in Marx and Engels. This intense feeling was consolidated and affirmed by reading Georg Lukacs' book, "History and Class Consciousness", which was throbbing with revolutionary rhythm, and Marx's early work, "On the Jewish Question", which related this new experience to the main tradition of Western philosophy, and which liberated my mind from the stereotypical false bourgeois image of Marx. The road was now wide open to delve into the heart of the Marxist tradition. I was beginning to find in this self-discovery the key to unlocking the real concrete meaning of life and society. At that time, I wrote a paper in English which purported to find Marx latent in Husserl, and to try to prove that the contradictions of Husserlian phenomenology would necessarily lead to Marx. In a sense, I was trying to prove that the truth of phenomenology, in the Hegelian sense, was Marxism.

However, by the end of this intellectual journey, I felt utterly exhausted—culturally and spiritually exhausted. Also, even though my intellect was Marxist and ready to delve into class and ideological struggle, my soul was still utterly nihilistic and, in a sense, existentialist. A Marxist intellect coupled to an existentialist soul! That was indeed a volcanic explosive combination. I realized that I was incapable of reformulating my life in conformity with my self-discoveries. So, I set myself the lesser goal of proclaiming to the world and proving that historical materialism was the truth of the whole of the philosophical endeavor, particularly, of classical German philosophy and of Husserlian phenomenology. I decided to dedicate my entire life to implementing this

project both theoretically and practically. I was even hoping to find a marginal research institute, whereby I would spend my entire life studying Husserl for the purpose of proving that Marx was the dialectical truth of Husserl. However, that was not to be. So, I decided to come back to Jordan, even though I was offered a post- doctoral post in theoretical physics in Zurich. I went back to Jordan with a heavy heart, culturally and spiritually exhausted.

My fourth self-discovery was discovering what it means to be a non-European in a European environment. When I came to Britain, I was impregnated with Nasserian pan-Arabism and a romantic abstract notion of my identity as an Arab. However, my angst and nihilism soon destroyed this notion, and led me eventually to a concrete socio-historical realization of what it meant to be an Arab in the modern age and in a Western context. I realized that what constituted my national identity was not my imagined picture of past national glories, but my nation's position in the contemporary international arena and in the international division of labour. I recognized the notions of imperialism and structural dependency. I soon related my philosophical experiences, my angst and my nihilism to the fact that I belonged to a fragmented, underdeveloped and dependent nation under the tutelage of the world market. That deepened and concretized my Marxism and motivated me to read dependency theory proponents, such as Samir Amin and Andre Gunder Franck. It was to prepare me for active political engagement.

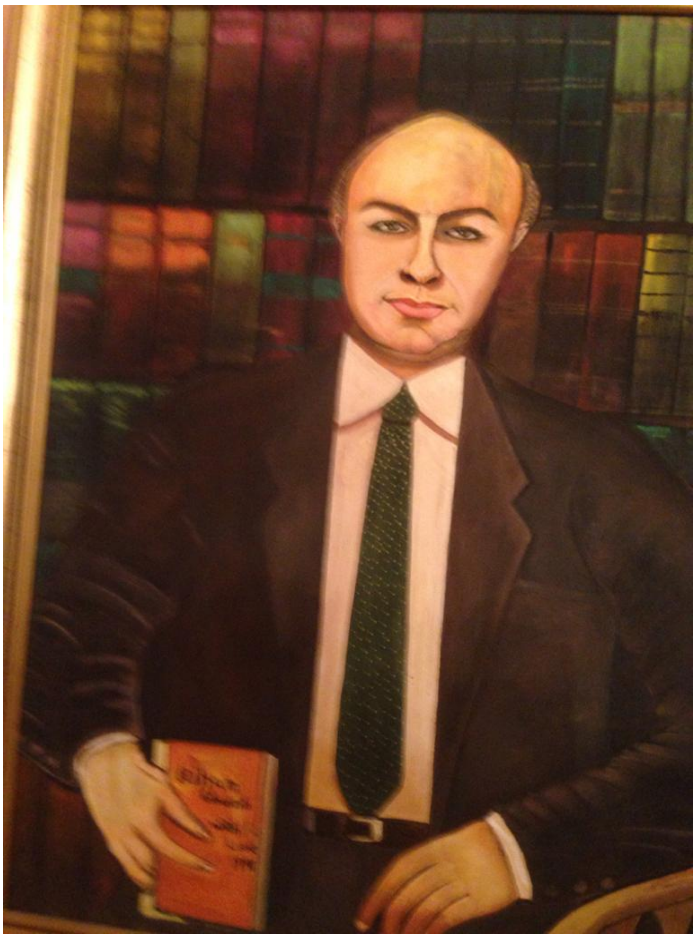
The fifth self-discovery was the discovery of social relations and the fact that an individual is socially constituted. In this, I was guided by Marx's remarkable work, "Theses on Feuerbach", where Marx defines man as the totality of his social relations.

I decided to go back to Jordan. I felt at that time that it was too late for personal happiness, despite my self-discoveries. I renounced the quest for personal happiness and replaced it with the quest for truth. That determined the goal I set out to fulfill. Hitherto, my goal has become to prove philosophically the truth of Marxism, to perfect its employment as a tool of understanding, to solve its philosophical problems and to raise Arab consciousness to the level of revolutionary scientific rationality.

Having obtained my Ph.D. in theoretical physics, I returned to Jordan, my birthplace. Right from the start, I could feel the intellectually and politically suffocating atmosphere in Jordan, epitomized by the imposition of martial law and emergency laws. Besides, I found before me a nakedly commercialized society, which robbed society of its tribal innocence. What exacerbated the situation was my pervasive feeling of spiritual fatigue and contradiction between a Marxist intellect and an existentialist heart. The challenges I was faced with at that time were multifaceted. First, I wanted to find employment in a place where I would have the freedom to come to terms with my dilemma and settle accounts with my self. The place, which I found congenial to my state of mind, was the Royal Scientific Society, which was the only applied research institute in Jordan. This place gave me the freedom to choose my own projects and to practice writing, which has proven to be a necessary form of therapy throughout my life. Writing became a form of cathartic practice designed to purify my heart from the spiritual fatigue and angst that afflicted it. At that time, I tried to understand my own dilemma, as well as the cultural dilemma of modern Europe, in terms of the character of Faust, and I traced the development of this character from its medieval origins to Christopher Marlow to Goethe to Gustav Mahler to Thomas Mann, and I convinced myself that Faust was the spiritual image, using Husserl's term, of modern Europe. I also started viewing myself as a Faustian being struggling fiercely with his internal contradictions. This was reflected in a drama I wrote at that time in Arabic, which bore the

title “Gotterdammerung”, or “The Twilight of the Gods”. In a previous drama, which I had written in England in English, I had started to view myself as a battleground between Faust and a character struggling to transcend Faust, whom I had called Metafaustus.

Right from the start, I established at the Royal Scientific Society a new department concerned with science popularization and scientific culture. I was convinced that what was missing in the contemporary Arab world was scientific thought and rationality. Thus, the aim of the new department was to develop new modes of linguistic expression in Arabic capable of accommodating scientific thought and rationality. Our aim was to reveal the grandeur of science, its principal ideas in a precise form, and the rationality and logic of scientific enquiry, and to combat pre-scientific irrationality in modern Arab societies. We wanted to contribute towards a cultural revolution that would modernize Arab culture and consciousness. We implemented a program of publishing scientific texts in Arabic at all levels, starting with children and ending with researchers. I learnt how to edit these texts and refine their modes of expression, and I also wrote a number of physics books in Arabic focusing on the foundations of physical theories, their structures, grounds and scientific contents. This science popularization project soon went beyond the Royal Scientific Society, and initiated a whole cultural movement in Jordan, in which a number of intellectuals distinguished themselves, one of whom was my friend, Professor Taisir Subhi Yamin, who made seminal contributions in this field.



In parallel with this activity, I set myself the goal of deepening my understanding of the nature of science, and scientific revolutions. This led me to delve deeper into the history and philosophy of science. In particular, I wanted to deepen my understanding of physical theories, their interconnections with each other, their scientificity, their ontological connections with material reality, the logic of their development, and their philosophical grounds. This has proven to be a lasting research project of mine.

Concurrently with all that, I set myself the goal of deepening my Marxism, first by delving deeply into the philosophical grounds of Marxism. That drove me towards reading Marxist philosophers like Lukacs, Korsch, Adorno, Marcuse, Gramsci, Althusser, Galvano Della Volpe, Lucio Colletti, Sebastiano Timpanaro, Roy Bhaskar and the English analytical Marxists and dialectical realists. Secondly, I wanted to deepen my understanding of Marxism by analyzing Jordanian and Arab reality in Marxian terms. Above all, I wanted to understand superstructural and cultural levels and phenomena in Marxian

terms. I wanted to construct theories of science, philosophy, literature and other cultural realities within the Marxian perspective.

In parallel with all that, I set myself the ambitious goal of critiquing both Western philosophy and modern Arab thought, and, in fact, I wrote a whole book critiquing the Moroccan philosopher, Muhammad Abed Al-Jabiri. However, starting with 1985, four significant events occurred—namely, Gorbachov's ascension to power in the Soviet Union in 1985, his, and the Communist Movement's, turn towards liberal ideology starting with 1987, the April Insurrection in Jordan in 1989 and the collapse of the Soviet Union in 1991. Those events left a deep impact on my mind and swerved my intellectual project in new directions to deal with the problems created by that turn of events. Those events prompted me : first, to develop new arguments in support of classical Marxism, particularly its humanistic and scientific core. I sought to understand what constituted the essence of being scientific and what distinguished science from non-science, and, hence, to prove that Marxism was a science. I also wanted to show the revolutionary specificity of Marxian science as opposed to natural science. Second, I mounted a critical campaign against liberalized communism, which I called the communism of post-collapse. I tried to show that it was a mere expression of ideological fatigue and defeat, and that it was devoid of any epistemological and philosophical value, compared to classical Marxism. Third, I felt the need to delve deeper into the meaning of the concept of democracy, particularly in view of the democratic changes that occurred as a consequence of the April Insurrection in Jordan in 1989. Fourth, I embarked on developing new theories on scientific revolutions, the social production of knowledge, the meaning of ideology, the relationship between ideology and science and the socio-cultural bases of scientific production. Fifth, I embarked on studying the development of secular philosophy and modern rationalism in Europe, culminating in Marxian dialectical materialist rationalism. I tried to show the contradictions of bourgeois secular thought, and how they were resolved by Marxism. I also felt the need to delve deeply into the concept of dialectic, and to show its interconnections with science, including scientific revolutions. I also tried to translate my ideas into political practice, but failed in this endeavor.

In 1991, the Royal Scientific Society decided to start a university college for technology offering a B.Sc. in computer science. I was seconded by the Society to the college, which was called the Princess Sumaya University College for Technology, to assist in foundational administrative work as well as teaching relevant subjects. I was faced with a number of challenges, both administrative and academic. The first challenge was to adapt the regulations and bylaws of the Royal Scientific Society to the workings of the newly established university college. The college was understood to be a continuation, as well as some sort of an inheritor, of the society. Our administrative experience in the society proved to be invaluable to the fledgling college. The second challenge was to design and implement a system of faculty employment that would ensure excellence in teaching and research. That was a difficult task to fulfill in a country like Jordan, where tribal and family connections were overwhelming and dwarfed objective institutional norms and criteria. The third challenge was the limited budget we had at our disposal. That necessitated a strict financial management, a strict rationing of resources, a strict specification of priorities and a slow, but sure, pace of development. Unlike the top management of the Royal Scientific Society, I realized the necessity of expansion, but I also realized that it must be a slow, studied and steady expansion. The fourth challenge was related to research. My work in science

popularization required conducting research work in physics, the nature and grounds of physical theory, the history and philosophy of science, the nature of scientific revolutions and the social production of knowledge. The challenge was to transform this research work into research papers publishable in peer-reviewed journals. My success in this endeavor ensured my academic promotion, and by 1999, I earned my full professorship. The fifth challenge was related to students' lives. Jordanian universities have suffered for a number of decades from tribalism related violence among university students. Thus, the challenge was to organize student university life on rational principles that would ensure harmony and peace among students. We have come to the conclusion that the key ingredients needed to achieve that are: free elections to students organs and bodies, disciplined democracy on campus, non-interference from administration in the students' electoral process, and absolute fairness in dealing with students' affairs.

In 2002, we succeeded in changing the name of the college to The Princess Sumaya University for Technology, and I was appointed its first, founding president of the university. We set out to establish new schools and departments, to specify the regulations and bylaws of the university, to organize research work at the university, to establish academic links with internationally recognized universities, to prepare master plans for the development of the university at all levels, including campus expansion and establishing post-graduate programs, to organize and foster extracurricular activities, and to satisfy local and international accreditation and quality assurance norms.

I was to remain president of the university until the summer of 2010, after which I was to resume my academic work as a full professor at the university. During my presidency, I continued my research and intellectual work, but at a relatively slow pace. Following the summer of 2010, I continued my scientific and philosophical work at a more rapid pace. My work continued to revolve around knowledge production, the nature of scientific theory, the history and philosophy of physics, reason and method in physics and the philosophical grounds of Marxism.

Currently, I am working on the problem of causality in physics, reason and method in Bohr and Heisenberg, reason and method in Arabic science, the interpretation of quantum mechanics, and the development of Marxian philosophy in relation to Hegel. I am also trying to utilize visual digital methods in propagating science and philosophy popularization via lectures and lecture courses. Public lectures are still the best vehicles for propagating my intellectual endeavors. Thus, my intellectual struggle continues, hopefully for a while.

Tracy Cross: An Overview of His Creative Leadership in the Field of Gifted Education

Don Ambrose
Rider University, Lawrenceville, New Jersey, United States

Some prominent scholars in academia establish name recognition by publishing a large collection of peer-reviewed articles that simply accumulate impressive scores in the popular publishing metrics but don't really push their fields in positive directions. Some others make an impact with one big idea that goes viral. We probably could count on one hand the number that exert positive influences throughout all dimensions of a field (theory, research, practice, philosophy) by creating a massive collection of influential publications and presentations; plus an impressive array of leadership initiatives carried out through multiple, high-profile roles in an array of organizations and institutions; plus an equally impressive collection of projects that make a difference at the ground level where professionals do their practical work. I can think of just a few scholarly giants who have accomplished something along these lines throughout the course of their careers. And those few don't just come from education or psychology, which are the knowledge bases most influential in gifted education. I do interdisciplinary work, so I get to see the accomplishments of prominent scholars in 30+ academic disciplines and professional fields. Based on this expansive, interdisciplinary, international survey of fields I can say with confidence that Tracy Cross is one of those few difference-making scholarly giants that we counted on one hand.

Tracy's creative work in the field of gifted education always reminds me of Robert Sternberg's WICS construct (wisdom, intelligence, and creativity synthesized). Sternberg, an eminent psychologist and scholar of creative intelligence, uses WICS to illustrate the importance of analyzing the influence of work in a field, and in the world. Those who are simpleminded and/or dogmatic don't employ wisdom, intelligence, or creativity in their decision making and practical work. Those who are intelligent but not wise or creative can do proficient but excessively mechanistic work that doesn't make much impact. Those who are creative but not intelligent or wise can come up with unusual ideas, but the lack of practical intelligence prevents them from making progress, and if they do make any sort of impact it could be harmful due to the lack of wisdom. Those who are creative and intelligent but not wise can make a powerful impact in the world, but that impact can be devastatingly harmful, as in the example of the creatively designed, intelligently refined, deceptive financial instruments that strongly contributed to the 2008 economic collapse. The very few who synthesize wisdom, intelligence, and creativity can do high-impact, extremely beneficial work in the world. Whenever I am asked about the WICS construct I usually respond by employing Tracy Cross as an excellent example. He is exceptionally creative in his scholarly writing and practical leadership initiatives. He comes up with new ways to shape the minds of scholars and practitioners while creatively and intelligently initiating practical, ethical work in the field. The ethics (a strong element of the W in WICS) arises from his keen sense of fairness, empathy, and compassion.

Here are just a few details that illustrate Tracy's wise and creatively intelligent impact on gifted education, and the world:

Wise, Intelligent, Creative Institutional Leadership

- Endowed chair, College of William and Mary and Executive Director of the Institute for Research on the Suicide of Gifted Students; director of two doctoral programs at the college.
- Prior, major leadership roles and projects at Ball State University including another endowed chair, and founding/directing a doctoral program and an Institute for research on the psychology of gifted students. Prior to those positions Tracy served in other leadership roles including department chair, coordinator of research, program director, director of research grants, and more.
- Leadership of the field of gifted education as president of the National Association for Gifted Children (NAGC); The Association for the Gifted, Council for Exceptional Children.
- Promoting awareness of various dimensions of giftedness and talent around the world, including large-scale projects in locations such as Ireland and Saudi Arabia.
- In short, I've never come across anyone else in academia with such an extensive track record of exemplary leadership.

Outstanding Scholarship

- Referring back to the aforementioned difficulty finding prominent scholars whose impressive track records are similar to Tracy, it would be very difficult to find any who have his journal editing track record. Tracy has edited most of the academic research journals relevant to the field of gifted education. Moreover, his style of editing has served as a beacon of light on the horizon for other journal editors to use as inspiration, myself included.
- His publication record is massive, including a large number of important, groundbreaking, peer-reviewed articles published in a wide array of top-flight journals; multiple books that push the field in important new directions (e.g., expanding awareness of social and emotional development and issues); many chapters in widely known anthologies; and columns published in practitioner outlets, which magnify his impact on the practical work in the field. As a journal editor I can attest to the impact of his work in other ways, notably when his name keeps popping up in articles submitted for publication through various journals.
- Tracy also has been very active in the development and completion of large-scale, grant-funded research projects.
- Rounding out his extensive scholarly record is an extensive collection of presentations he has carried out in state, regional, national, and international conference venues. I've had the pleasure of attending many of his presentations so I can attest to the strong connection he establishes with his audiences through a synthesis of his powerful intellect, natural humility, and sense of humor.

Extensive Recognition from Other Leaders in the Field

- Another signifier of his influence is the large collection of honors and awards he has earned from Mensa, the National Association for Gifted Children, various state associations for the gifted, and several universities that benefited from his work as a faculty member and administrator. The awards are far too many to mention here but a few of them establish a vision of his excellence – the distinguished scholar award, and the distinguished service award from the NAGC; the award for excellence in research, and the lifetime achievement award from MENSA.

I have to stop at this point because I don't want this overview to become a dissertation-length document. There are so many other things that could be mentioned as evidence of Tracy's WICS work in the field of gifted education. An accurate way to summarize the overview is to say that the world would be a much better place if somehow Tracy Cross could be replicated, with the copies spreading out into all nations throughout the world taking on creative leadership roles in academia and in societies.

Standing on the Shoulders of Giants: Opportunity, Serendipity and Commitment

Tracy L. Cross; Jennifer Riedl Cross
William & Mary, Virginia, USA

According to the eminent developmental psychologist, Erik Erikson, I am currently in the *Generativity* vs. *Stagnation* stage of life. Throughout my career, I have been concerned with "establishing and guiding the next generation" (Erikson, 1963, p. 267), especially when it comes to promoting my values of humility, openness, transparency, inclusiveness, kindness, empathy and respect for others. This creativity profile gives me an opportunity to reflect on what I consider to be a productive career, one that I hope will have some impact on future generations. I have never been someone with a singular goal, yet have always worked hard to find ways to help others.

Developing an appreciation for exceptionalities

I have been enormously impacted by a number of people in my life. When I was in my early teens, I came upon my mother crying at the kitchen table, with papers in her hand. Her words that day have stuck with me and are, perhaps, the reason for my career in gifted education. She had just received her children's IQ scores in the mail, all quite high, and lamented, "I just wanted my kids to be normal." I would later learn that she had grown up in a tiny community in the mountains of

Tennessee, and was a stellar student. One day when she was sixteen, the principal called her in to his office, handed her a high school diploma, and said, "We cannot do anything else for you." Her giftedness had come with hardship and she wanted a more "normal" life for her children. This experience became a foundation to my need to understand and assist high ability students from small rural communities; particularly, female students.

Growing up in Knoxville, Tennessee, a mid-sized Southern city, in the 1960's and 70's, I sensed non-normalcy in many of the people who surrounded me: my best friend's 7-year-old loquacious older brother, who told me, "When I grow up, I'm going to be president, but first I have to go to Yale."; the eccentric, extremely talented artists who frequented my parents' art gallery; the framer at the gallery who could cut oval mats perfectly by freehand; my father, the entrepreneurial risk-taker; and the stage comedians he and I watched together on late-night TV from about the time I was four years old.

Those late-night shows were crystallizing experiences. My 7-year-old impersonations of numerous Jewish comics like Shecky Green, Jackie Vernon and many others, were generally well received by all. My father felt it necessary after hearing hundreds of comedy routines from me that he needed to let me know, "Tracy, buddy, you do know that we are not Jewish, don't you?" This was news to me and I became very interested in learning what that word – Jewish – actually meant. Making people laugh using the fewest possible words, often by causing them to create images in their head, was a super power of sorts to me.

In 1968, when I was ten years old, I was watching the Mexico City Olympics on TV when Bob Beamon, an American track and field athlete, broke the world record in the long jump – not by inches, but by nearly two feet. The media and everyone I knew celebrated this astounding accomplishment, which led me to realize that giftedness was all around me. Furthermore, the variation in domains in which talent may exist fascinated me.

I lived in three worlds: my neighborhood, where the friends you had were based on geography and age; the campus of the University of Tennessee, which dominated my hometown and where I attended sports events and worked with my parents at a university bookstore; and my family's art gallery, called *Crossroads*. I had the great fortune to grow up in these different worlds, where people came from virtually all walks of life and represented diversity of all kinds.

My childhood in the 1960's was deeply impacted by the civil rights movement. Television brought the events of the day right into our living room. Anti-war protests, assassinations, young soldiers being put in body bags, and general political upheaval – those were tumultuous times. We were also exposed to great speeches ("I have a dream…"), moon landings, and the desegregation of schools, although this was not so successful in our Southern hometown. There was hope, determination, and the possibility of change all around. An attitude of respect for the individual and the importance of acting to right the wrongs in society developed naturally out of this milieu. In reflection, I feel that all of this came together in the novels of Pat Conroy, which helped me understand what it was to be a caring and empathetic young Southern male.

I was not very excited by school as a young person. School was boring and not challenging. As long as I made straight A's, however, my parents were happy. I describe my experience as a student as like in a control group during an experiment – never expecting anything new or interesting to happen. I did, however, enjoy sports. Large for my age, I excelled in several (baseball, football, basketball, track, tennis, golf, and bowling) and even became a three-time all-city athlete in football. Sports provided an arena in which I could push myself and be rewarded for my hard work by both success in competition and accolades from peers and the adults in my life.

Always an introverted person, I found comfort in books at an early age. I was very fortunate that my house was full of books of different types. I learned that I could escape at any time into another place. I especially enjoyed biographies.

In my junior year of high school, I met and began dating Jennifer Riedl. The daughter of an Austrian anthropologist father and a highly educated mother whose parents had immigrated to the United States from Scotland in the 1920's. Jennifer and her four siblings were all gifted. She and her family provided me with another example of non-normalcy. With exposure to her academically oriented family, academics took on a new appeal as I learned more about the possibilities of a life in letters. Indeed, I left formal athletics behind.

Then there was Bob Newhart. It stands to reason that my life would be permanently affected by a great comedian, after those early experiences with my father. Bob Newhart is a deadpan stand-up, with a sharp and deep wit. In 1972, he brought psychology into the mainstream with "The Bob Newhart Show." Newhart played Dr. Bob Hartley, a clinical psychologist, who conducted group and individual therapy sessions with eccentric patients. I suspect I am not the only person who was drawn to this field by his example. I could see myself in this role, interacting with interesting people and helping them to deal with both mundane and unusual problems they faced. When I realized that this was a direction I wanted to take, my nebulous goals began to be more focused.

After completing a 2-year degree program in management at a local community college, I enrolled at the University of Tennessee. My bachelor's degree was in education, with emphases in psychology, training, and supervision. Then my master's and doctoral programs were in educational psychology. I also obtained an Educational Specialist degree in educational psychology and guidance. Throughout this experience I reveled in learning and met some of the most important figures in my life at UT: Schuyler Huck, Howard Pollio, and Laurence (Larry) Coleman.

An impactful education

During my graduate program at the University of Tennessee at Knoxville (UTK), I was strongly attracted to measurement and psychometrics. Dr. Schuyler (Sky) Huck was an eminent statistician who took me under his wing. He was highly regarded in his field, but one of his primary objectives was to make his work accessible beyond his discipline. Understanding statistics is key to understanding social science research, and Sky's goal was to clarify statistics for the average person, rather than to leave research findings obfuscated through formulas and constructs most people could not understand. His groundbreaking book, *Reading Statistics and Research*, was first published in 1974 and is now in its sixth edition. It explains statistics in depth, by including contextual examples of their use in research.

During my doctoral studies in educational psychology, I also took all of the classes in the doctoral program in school psychology, including the testing classes in abilities, achievement, personality and projective assessments. I took all of the practicum courses and signed up for a yearlong internship that would have led to a Ph.D. in school psychology, in addition to the educational psychology Ph.D. I would soon receive. That was when Jennifer and I learned that we were going to have twins. Life changed, and while I had to suspend my studies, I was fortunate to land a good tenure line faculty position in short order. Wonderful babies: 2, second Ph.D.: 0. The best deal one could ever hope for.

One of the most meaningful experiences of my doctoral program came under the tutelage of Dr. Howard Pollio, who introduced me to phenomenology. A small group of doctoral student friends and I (in addition to interested faculty), created a weekly phenomenology research group, which has lasted now for decades. This research group challenged us to consider the essence of knowing: lived experience. Readings from Husserl (e.g., 1931) and Heidegger (e.g., 1927/1962) opened our eyes to the complexity of understanding what people know and how we might access that knowledge in our research. In the 1980's, positivistic research was treated as the gold standard, but qualitative research was beginning to gain ground in the social sciences. The juxtaposition of statistical methods and phenomenology was exciting and illuminating for me. Those of us who had interest in both and were trained in psychometrics learned about developing multidimensional scales based on phenomenological research.

Even though their domains were miles apart, both Sky and Pollio had similar objectives in their approach to research: gaining access to new knowledge through rigorous methodology. I was fortunate to learn from these two giants. Enthralled as I was by phenomenology, my testing and measurement work with Sky led to dissertation research that was more quantitative. My first idea was to study the brain waves of subjects during a novel learning task, but my mentor rejected my proposal because the technology was too new and not possible at UT. This was disappointing to me, given that I had been charged as a doctoral student in my assistantship to help develop the first course the college of education at UT would offer in "brain-based learning," or neuropsychology as we would call it today. I assisted the professor who taught it, then led the class during the third quarter. Many years later (in 2015), I received certification in neuropsychology, and that has helped satisfy my desire to understand people from this perspective. The study I performed instead for my doctorate, "An Analysis of the Testing Practices of College Professors" taught me a great deal about research methods and about how professors have little training, if any, in assessment of students' learning. While this was of interest to me, circumstances rapidly led me in a different direction.

A critical experience of my graduate education came when I volunteered to work for a rape crisis hotline. I had taken many courses in preparation to that end, starting from my early interest in becoming a clinical psychologist. After my time working with individuals in great distress, however, I realized that I could not detatch from their negative experiences. I left each call disturbed by suffering that I was little able to help. I came to the conclusion that I was not well suited to be a clinical psychologist. However, helping others has remained a primary goal of mine throughout my career.

An introduction to gifted education

Research on students with gifts and talents (SWGT) can take many forms. Terman (1925), long considered the father of gifted education, collected voluminous data about each of his "geniuses" over their lifetimes. He wanted to know how they grew, who was in their lives, how healthy they were, what important transitions they underwent, and, in the end, how successful they were in society. Since Terman, many researchers have explored these and other unanswered questions about SWGT. I joined this group in 1984 when I met Larry Coleman, who introduced me to the field of gifted education. What struck me about this field is that it embodied a domain of study encompassing my prior experience with and interest in non-normalcy and excellence. Larry and I were able to blend our very different research perspectives to create an agenda that was unique in the field at the time.

I first met Larry when I was a late doctoral student completing my studies in psychology, measurement and evaluation. I never had him for a class, but my advisor recommended Larry as a potential dissertation committee member, leading to a fortuitous meeting. We immediately hit it off, spending considerable time together, deep in intellectual discussions of human experience and research methods. He was a fascinating person with a history radically different from my own. Larry was a mid-career professor of special education at UT, with a long history of working with students on both ends of the intellectual abilities continuum, from mental retardation (as described back then) to giftedness. He and his business partner created a summer program for gifted students that is now in

its fourth decade and has been taken over by their respective adult children. Larry's respect for the individual underpinned his actions in both his personal and professional life. He was committed not just to understanding individuals' experiences, but, like Sky, to sharing his knowledge in an accessible way. He believed that if you cannot make your writing accessible to everyone, you are adding unnecessary obfuscation. Individuals are empowered by access to knowledge; therefore, obtuse language supports hegemony – the opposite of Larry's goals throughout his life. Fittingly, he was a *peacenik*, an active anti-war protester throughout his life.

When we met in 1984, Larry was beginning his textbook, *Schooling the Gifted* (Coleman, 1985). I was fortunate to be a small part of his thinking as he wrote. I was learning about a new discipline and brought a fresh (admittedly, naïve and uninformed) perspective to the work in which he had been involved for decades.

NAGC, 2012

researchers at the time, he was beginning to realize the value of qualitative research methods. As someone who cared deeply for the individuals in his research, Larry recognized the opportunities to learn from them as co-participants, instead of subordinating them through strictly positivistic methodologies. I had come to him to share my quantitative skills, but my interest in phenomenology sparked an interest in him, as well. I would later write about the politics of methodology (Cross, 1990).

Larry was hired to serve as the program evaluator of the Tennessee Governor's Schools program, a role he held for several years; he hired me to help him. After months of planning our study, we criss-crossed the state, surveying and interviewing students, teachers, counselors and administrators involved in the various Governor's School programs, but with an additional agenda that developed from our long hours of talking about what it is like to be a SWGT. *Lebenswelt*, the "life world" or, as it has come to be known, the lived experience, of these students fascinated us.

During these Governor's School visits, we interviewed countless gifted high school students. We were able to ask SWGTs directly the questions we had asked each other in our many long meetings. One question, in particular, was associated with Larry's concern that SWGT were not always able to be themselves in social situations. His close reading of Erving Goffman's (1963) book,

Stigma, clarified this experience for him. Together, we discussed the likelihood that the non-normalcy of SWGT – their exceptional intellectual or creative abilities – was a stigmatizing characteristic and that this phenomenon was significant in students' lives. Goffman proposed, "The central feature of the stigmatized individual's situation in life can now be stated. It is a question of what is often, if vaguely, called 'acceptance.'" (p. 8). It was this acceptance SWGT were after.

Being different is problematic in that differentness prevents, or, at least interferes with, full social acceptance and personal development….The gifted introduce an element of differentness, because their characteristics disrupt, or are believed to have the potential to disrupt, normal social interactions. (Coleman, 1985, pp. 163-164)

Attempting to understand this phenomenon became central to much of our collaborative research (see Table 1; Coleman & Cross, 2005).

Table 1: Paradigms, Models, and Conceptions.

	Description	Proposed; Refined
Stigma of Giftedness Paradigm	SWGT want normal social interactions, but worry they will be viewed differently if others know about their giftedness, therefore manage information so as not to be exposed.	Coleman, 1985; Coleman, & Cross, 1988
Information Management Model (IMM)	Social behavior decision-making among SWGT avoiding disclosure of giftedness.	Coleman & Cross, 1988
School-Based Conception of Giftedness	Talent development model for school settings.	Coleman, & Cross, 2001, 2005; Cross & Coleman, 2005; Cross & Cross, in press
Spiral Model of Suicidal Behavior among SWGT	The progression of mental distress to the point of suicide, including risk and protective factors specific to SWGT	Cross, 2013; Cross & Cross, 2017b; Cross & Cross, 2019
School-Based Psychosocial Curriculum Model	Theoretically driven model of how schools can create curriculum that fosters positive student psychological and social development	Cross, Cross, & Andersen, 2017; Cross & Cross, 2017a

Now I am a Professor

South

My first tenure-track position was at Louisiana Tech University in Ruston, Louisiana. When my wife and I had learned our first child was to be two children, the need to move on from my graduate school experience took on a new urgency. I accepted the Tech position ABD ("All But Dissertation"), with the stipulation in my contract that I would complete the dissertation by my second year. I was an assistant professor in the Department of Behavioral Sciences, teaching foundational psychology and research courses. I moved to Ruston in late August that year and our twins were born in Knoxville in October. Over the winter break, I finished my dissertation, with at least one baby asleep in my lap or over my shoulder as I worked.

The Behavioral Sciences department at Tech was full of colorful characters. I loved my time there. It was through my collaboration with some of these colleagues that I worked with at-risk high school students in a Job Training Partnership Act-funded program. I learned that, in considering their future careers, these potential dropouts could name only four occupations to which they could aspire: police officer, teacher, minister, and professional athlete. They ruled out all of the options they could name, except for becoming a minister – if one was called to the ministry. Without such a calling,

virtually all of the students in our program felt that their only option for the future was to become a professional basketball player. This was sadly ironic, as not one of the students had ever played on an organized basketball team. This lack of basic knowledge about possible futures left them unable to imagine a future to which they could aspire. From these students, I was reminded of the power of context and the need for education that supports students beyond giving them training in basic academic subjects. One must have some foundational information to be able to dream.

West

In my second tenure-track position, I worked at the University of Wyoming (UW), the only university in the 10th largest state, whose population ranks 50th in the country. As assistant professor of educational psychology, I remained active in gifted education. My colleague, Roger Stewart, joined Larry and me as we further analyzed the voluminous data we collected at the Tennessee Governor's Schools (Cross, Coleman, & Stewart, 1993; 1995) and engaged in more interviews with SWGT (Cross & Stewart,1995). Some of what we learned from these studies led to my certainty about the statements in Table 2. A colleague, Gary Render, was then editor for the *Journal of Humanistic Education* (*JHE*). In a fortuitous collaboration, he invited me to be his co-editor of the journal. After one year as co-editor, I became the editor for another two years (1991-1993). This experience was critical to my later willingness to take on the editorships of journals in the field of gifted education.

Table 2: Things I know about SWGT.

1	SWGT are the most heterogeneous group of students to study.
2	Most SWGT feel different in ways that over time becomes increasingly nuanced.
3	The most common experience of being a SWGT in school is waiting.
4	The lived experience of giftedness in school reveals concern for acceptance.
5	Identity formation is especially complicated for SWGT.
6	Schools that are not ready for SWGT create problems for them.
7	SWGT grow up receiving mixed messages from family members, teachers, and other.
8	Schools that are ready for SWGT create an atmosphere of acceptance, challenge, complexity, caring, choice, and control.
9	All SWGT have idiosyncratic exogenous characteristics (confluence of lived experiences and characteristics) that create a relatively unique pattern of individual needs and interests.
10	Context matters a great deal in the lives of SWGT.
11	SWGT are active agents in their lives.
12	SWGT want to have "normal" social interactions.
13	They learn that they will be treated differently once they are believed to be gifted.
14	Most SWGT engage in social coping strategies with both specific and vague goals in mind.
15	Many SWGT learn at a faster rate than their same aged non-gifted peers.
16	Many SWGT have/develop passions about learning/ interests. Some become obsessed with them.
17	SWGT benefit socially and emotionally from spending some time together.

* I believe these to be true with some certainty.

I was active in the Wyoming Summer High School Institute, a residential program where a colleague and I created an exciting course entitled "Humor: Know Laughing Matter." Finally, I was able to build my love of stand-up comedy into my academic life. I continued to find SWGT, many in elementary schools, who were quite exceptional. One 6-year-old girl particularly comes to mind. When I asked her to describe her experience as a SWGT in her first-grade classroom, she proceeded to lay out for me a detailed map of the students in her class and their abilities and interests, emphasizing their expectations of her. Her social cognition at such an early age was astounding. In this wild, western state, I also met students who needed my counseling skills. One afternoon, I opened my office door to find a family waiting in the hall to see me. I later learned they would not knock on my door out of fear they would be rejected or that others might learn of their visit with me to seek help for what they considered a very sensitive and potentially dangerous subject. They had driven

from north of Casper – a three- to four-hour drive – to see me about their gay gifted son, who was struggling with depression that was at least in part associated with his exceptional abilities. There was no one in their hometown who understood his situation or would support him, with his sexual orientation that was unacceptable to them. This was not the only time I had such a visit during my four years at UW. Early exposure to suffering in this population was one reason I wrote and directed a grant that allowed for the training of school psychologists and other personnel working with special needs students, including SWGT, across Wyoming.

Midwest

In 1993, I became an associate professor of educational psychology and coordinator of research for Teachers College at Ball State University in Indiana. One of my first responsibilities was to conduct an evaluation of the Indiana Academy for Science, Mathematics and Humanities (Academy), a state-funded residential school for gifted high school juniors and seniors housed on Ball State's campus. Through this evaluation, I came to know the ins and outs of a school for SWGT: how they provided academic challenge, what the professors were like, and what kind of relationship the Academy had with the university.

One evening during that spring semester, Roy Weaver, the dean of Teachers College, called to tell me that an Academy student had just killed himself one block from where the students were enjoying their prom. The dean felt that he had the responsibility to inform the students of their friend's death, and he wanted me to go along and assist him. That night became the turning point in my career. For 25 years since, I have conducted research of varying types trying to learn as much as I can about the suicidal behavior of SWGT. While my colleagues and I are only beginning to scratch the surface, our studies have shed considerable light on a troubling topic that I cannot escape. I do not get through a day without worrying about it.

Two years after this event, the director of the Academy left unexpectedly and I was asked to step in – just for a few months. After a brief stint as the acting director, I was asked to stay as head of the school. I went over to help the cause for four months and stayed for nine years. This was a very different role from the professor/researcher/department chair path I had been on. It was only after serious conversations with Larry that I became convinced this was a great opportunity to learn more about the SWGT he and I cared so much about. Larry agreed to take a year of his life and conduct an ethnography at the Academy. He did this for two reasons, one because I was in over my head and so I asked him to, and another because he saw it as an opportunity to conduct another unique study for the field. There is no other book like his *Nurturing talent in high school: Life in the fast lane* (Coleman, 2005) and the field has been enriched by his year living, off and on, among the students at the Academy.

Because of my mother's limited educational experience, supporting rural SWGT has long been a goal of mine. As executive director of the Academy, I pursued grants to fund training for rural school counselors and teachers, creating a curriculum that helped them prepare students to take Advanced Placement courses. Most of these counselors and teachers held multiple roles in their rural schools. One counselor I met was actually the school's librarian, who served additionally as the schools' counselor, track coach, and bus driver. Rural schools in Indiana tend to be small and have few resources. I have always had a special concern for the students in those schools, who have ability, but little opportunity to thrive. My time at the Academy helped me develop later models and theories (see Table 1) with an eye to what is practical, considering what schools actually have to work with and the reality faced by parents and their children. Larry and I developed the school-based conception of giftedness (Cross & Coleman, 2005; Cross & Cross, in press) based on this philosophy. More recently, Jennifer and I developed the school-based psychosocial curriculum model (Cross & Cross, 2017a), applying theory to create a model that can be used to underpin a planned program of ego strength development in schools.

I was at Ball State for 16 years, serving as a faculty member, coordinator of research, department chair, and associate dean, in addition to my 9 years as executive director of the Academy.

In 2000, I was named the George and Frances Ball Distinguished Professor of Psychology and Gifted Studies. Roy Weaver, dean of the Teachers College throughout my time there (and acting dean, as I write this), was immensely important to my career at Ball State and beyond. He supported me in numerous ways. When I proposed the creation of the Center for Gifted Studies and Talent Development in 1993, he provided operational support. The research I conducted at the Academy had his full support. In 2007, he provided office space and funding to support my proposal for the creation of the Institute for Research on the Psychology of Gifted Students. The trust he put in me to fulfill whatever role I engaged in at Ball State was a critical foundation to my success. In our many, many late afternoon and early evening conversations in the den of his home near campus, we brainstormed solutions to the problems of the Academy, the Teachers College, Ball State, Indiana, the US, and the world. Together, we were able to enact many of these creative solutions. I learned from Roy the importance of generating ideas. From ideas, all things are possible. Over time, I learned how to prioritize these ideas and how to make things happen. It was an exciting time in my life. I am very grateful to have had a dean who wanted to include me in his thinking and who supported me so fully.

East

In the fall of 2008, I learned that Joyce van Tassel-Baska, an icon in gifted education, was retiring from the Center for Gifted Education, which she had founded in 1988. Not only was this Center one of the best known in the world for its curriculum, precollegiate learner programs, and research; it was also at the College of William & Mary. People sometimes say that folks at William & Mary call themselves the Harvard of the South; I believe that folks at Harvard call themselves the William & Mary of the North. This mid-sized public Ivy has a vaunted reputation in the Southern US; I had heard of it even as a child. Its location in Williamsburg, Virginia – a significant place in US colonial history and a beautiful setting full of trees, rivers, and wildlife, near the Atlantic Ocean – was also appealing. I was pleased and honored to take the reins of the Center in 2009, becoming a faculty member with an endowed chair, the Jody and Layton Smith Professor in Psychology and Gifted Education, in the William & Mary School of Education. My wife, Jennifer, had completed her doctoral degree in 2008 and joined me at the Center, first as a post-doctoral researcher and then as the Center's Director of Research. The directors at the Center (Drs. Mihyeon Kim, Lori Bland, Ashley Carpenter, and Jennifer Riedl Cross) are outstanding professionals who work very hard to make the world a better place. I could not be prouder of this small but mighty team.

Humble origins, serendipity, and becoming involved in the gifted community

As a doctoral student in educational psychology, I presented my early research at regional conferences. My first solo conference presentation of work Sky Huck and I had done together was at the 1984 Midwestern Association of Teachers of Educational Psychology Conference in Muncie, Indiana. The presentation was about our efforts to teach statistics to master's degree students via a mastery learning model. The positive reception of my presentation and the general positive atmosphere were instrumental in our decision to return to Ball State University almost a decade later. I also presented regularly at the American Educational Research Association (AERA) Conference for many years. My introduction to gifted education conferences came at the 1986 Council for Exceptional Children conference in New Orleans. Presenting on our evaluations of the Tennessee Governors' schools for The Association of the Gifted (TAG), I began to meet people who would become friends and colleagues in this field.

Influential friendships

My first presentation at the National Association for Gifted Children (NAGC), was in 1990 in Little Rock, Arkansas. Three years later, I was invited to serve on the NAGC President's Task Force on Graduate Students by then-president Dr. James J. Gallagher, one of my heroes in gifted education. This task force proved to be an important breeding ground for the organization. In addition to myself, Larry, Bonnie Cramond, Rena Subotnik, Paula Olszewski-Kubilius, and, I believe, Mary Ruth Coleman (not related to Larry) were on this task force. All of us have since had important leadership roles in NAGC and the broader field. An esprit de corps immediately developed in the group. Our objective was pure: support the development of talent and the students who were capable of

exceptional performance. Our task force railed against the hegemony in our field; the opportunism of some colleagues, who were clearly there to use the organization for personal gain; the lack of access graduate students or new ideas had "at the table." This task force became the stimulus for my future involvement in NAGC.

Larry, Rena, and Paula and I became good friends. We met at conferences, talking late into the night about gifted students, our families, peace and other important topics. We often presented together at conferences and have found opportunities to work together. Rena and Paula came to the Center at BSU to provide me their take on its function, for example. Susan Johnsen at Baylor University became part of this friendship group and was also important to my professional and personal life, often serving as a wise advisor. Other friends and colleagues, including Mike Pyryt, Sal Mendaglio, Lannie Kanevsky, Sandy Kay, Françoys Gagné, Susan Johnsen, and several others, regularly participated in our late evening get togethers. Everyone's doctoral students were also welcome.

Joel Macintosh has been a friend and colleague for 25 years. His impact on the field of gifted education is immense and he took on this passion with considerable panache. My early involvement with Joel began as he made the transition of *The Prufrock Journal* into the *Journal of Secondary Gifted Education* (*JSGE*; now Journal of *Advanced Academics*). Joel agreed to my becoming the first ongoing editor of *JSGE*, which proved to be a catalyst in my career. Don Ambrose is the purest academic I know. I am honored that he accepted my invitation to contribute his perspective to this profile. He is extremely well read, thoughtful, original in his thinking, and as kind and supportive as a person can be. Talking with Don changes my thinking and lifts my spirits. In 2011, I met my friend and colleague, Colm O'Reilly, Director of the Centre for Talented Youth in Dublin, Ireland. We began collaborating regularly and have completed several projects, with more currently in progress. Colm's skills include an astonishingly effective way of working with and leading others. He has emerged as a highly influential leader in gifted education in Western Europe. Colm and Rena are the two professionals who seem to have connected most of the professionals who collaborate in the field.

Larry, Joel, Jim Gallagher, Paula, Joyce, Rena, Roy, Don and Colm all have been influential in my career in gifted education; each in their own way. Their generosity toward me for more than a quarter of a century changed my life. In Larry's case, it was across 35 years. While never technically one of Larry's students, I was always a student of Larry.

Volunteer work

My desire to make a difference led me to volunteer in many capacities. I learned early that, if I wanted to have an effect on what happens to and for SWGT, I would need to be present when decisions were made. Over the years, I have been on numerous school and organizational boards. I served as president of the Wyoming Association for Gifted Education, the Indiana Association for the Gifted, NAGC, and twice for The Association for the Gifted (TAG) of the Council for Exceptional Children (CEC). One momentous experience came when I was early in my time at Ball State and was invited to join the board of the Roeper School. This Detroit-area school, founded by George and Annemarie Roeper in 1941, has a mission like no other: to prevent another Holocaust. Its dedication to the well-being of its SWGT and the development of their social consciousness aligned with my philosophy and values. At one of the first of many board meetings I attended, I remember being in the cafeteria line with Harry Passow on my left and Nancy Robinson on my right. This was an exciting and humbling experience for a young, aspiring gifted education researcher. I knew I was in a special place.

Service to my professional community was extremely important to me. I made many personal sacrifices to be present at faculty, university, and organizational meetings. I wanted these institutions to be successful in their goals. If I did not give 100%, how could I expect others to do so? I have, at times, stepped away from professional organizations (or individuals) when I was unable to bring about change and felt my values were being compromised by continued involvement. Fortunately, this has been infrequent in my career.

The editor in me

Anyone in academia learns early about the importance of the peer-review process. A young faculty member discovers that reviewers can be harsh or helpful – sometimes, both. I had plenty of these experiences. It was the early experience with *JHE* that taught me just how a research journal works. The process of inviting reviewers to examine the merits of a piece was laid out in full during those early years, first as co-editor and then as editor of this small, now defunct, journal. I believed in the goals of the Association for Humanistic Education and wanted *JHE* to be widely read. I learned about the generosity of reviewers, who were volunteering their time to help determine the works that would be published or not. I could see before me the opportunity to offer a platform for voices to be heard. Editors can encourage these voices or squelch them, simply by choosing to invite one reviewer or another. I could see this in our own field, when manuscripts I had submitted languished or sped through the process. Dominance of the field happens when editors make the decision to support one or another type of manuscript. Sometimes an editor is inclined to support or reject a type of author or a particular research methodology. I was determined to be positive in my editor roles – maintaining high expectations while giving opportunities to those who were willing to try. Writing is hard for many academics, but skills improve with practice. A poorly written piece with profound ideas or groundbreaking research can be improved. Through the work of volunteer reviewers and the editorial staff, I saw many diamonds in the rough polished to a publishable luster. As Larry once told me, anything you have ever read had an editor who improved it. I learned a great deal by witnessing the evolution of ideas in a manuscript, from what was initially submitted to what was actually published. Seeing manuscripts in the field evolve through the review process provides a very rare and privileged perspective on the authors and their work.

Following my term at *JHE*, I served as guest editor of special issues in the *Journal of Secondary Gifted Education (JSGE).* I took on editorial roles when I could, becoming column editor for *Gifted Child Today* and the *Journal for the Education of the Gifted.* I was concurrently editor of Prufrock Press's *JSGE* and the Ball State journal *The Teacher Educator (TTE)*. Both of these small journals were modest when I began, receiving too few submissions and barely managing to make their quarterly publication goals. I learned how to encourage authors and reviewers to not only submit, but to make revisions and meet deadlines. Both journals were in a healthy state when I completed my editorship. *TTE* is now a well-respected journal, managed by a major publisher. When the editorship of NAGC's premier research publication, *Gifted Child Quarterly*, opened in 1997, I was not sure I was ready, despite these earlier successes. It was Jim Gallagher, a man I so greatly admired, who encouraged me to throw my hat in the ring. I served as editor of this esteemed publication for five years and I believe that I was fair in my decisions. Manuscripts were received and processed in the order received, rather than by any rating or preference on my part. I encouraged diverse authors to submit their work and made great efforts to foster diversity in the journal. The field was enhanced by this guiding philosophy and the journal developed a healthy production schedule. I am very proud of the fact that I published the first papers of many of the field of gifted education's most respected academics.

The *Roeper Review* (*RR*), like the Roeper School, had a unique mission in gifted education publications: "to publish thought-provoking, informative articles that deal with research, observation, experience, theory and practice as they relate to growth, emotions, and education of gifted and talented learners and to the cultures in which they live" (https://www.roeper.org/about/the-roeper-institute/the-roeper-review). Readers turn to *RR* for a different perspective, outside the mainstream research found in other journals. When its long-time editor, Ruthann Brodsky, retired, I was asked to step in as her successor. Once again, I was wearing two hats, as editor of both *GCQ* and *RR* – this at the time when I was executive director of the Academy, president of the Indiana Association for the Gifted, president of CEC-TAG, on the board of numerous organizations, and (did I mention?) father of four young children. My hat collection was quite large.

My term as editor for, first GCQ, then RR ended, just at the time that Larry was finishing a 12-year term as editor of the *Journal for the Education of the Gifted* (*JEG*). My appointment as editor of JEG resulted in my longest term of 13 years. In that time, I saw major changes in the publication

arena. For-profit publishers have identified research journals as a lucrative opportunity. Authors now submit their articles through publisher-provided portals, making more work for authors, while reducing the staffing required to run the journal. Pressure to publish has pushed more authors to submit manuscripts and this sometimes resulted in subpar work. Language issues were a frequent challenge as more international manuscripts were submitted. Along with these challenges have come the benefits of having multiple new voices in our publications and many outlets that extend the reach of authors in our field.

What I have learned

In my career in gifted education, I have learned many things: about people, programs, research, and teaching. There is, literally, too much to fit in this space. I have come to the conclusion that gaining knowledge is self-indulgent unless it is shared. From a casual dinner one evening with Robert Sternberg many years ago, I learned of the importance of publishing in wide ranging journals, so that your research will potentially reach audiences across the spectrum and may actually be utilized. Of course, he said it in a much more elegant manner. I have tried to share what I have learned in writing for and speaking to audiences of all sorts. I will focus below on two broad areas in which I have spent the most time in my career: lived experience and suicide.

Lived Experience. If we really want to understand what it is like to be a SWGT – what are the perils and rewards, the barriers and supports to their success in school and in life? – there is no substitute for listening to them describe their lives. Surveys and analysis of "big data" can offer a glimpse into their experiences. I have determined that, although we can learn from positivistic methods, they are constrained by their inherent parameters, thus limited in their ability to contribute to our knowledge on this particular topic. Rigorous qualitative inquiry allows for a richness missing from positivist approaches. There is no piece of which I am more proud than a recently accepted manuscript that will appear in *RR* (Cross, Cross, Dudnytska, Kim, & Vaughn, in press) in which we used the accumulated work of qualitative researchers (Coleman, Micko, & Cross, 2015). This manuscript was Larry's final juried manuscript and was published after his unexpected death in 2013. His doctoral student at the time, Karen Micko, contacted me when the manuscript she was co-authoring with Larry was early in its development and asked me if there was anything that could be done posthumously. What a small but fitting way to honor Larry: completing the manuscript and seeing it through publication. Later this same paper was used to clarify the risk factors for suicide that are unique to SWGT (Cross et al., in press). Because of the qualitative research that went before, I am able to include these factors in my spiral model of suicide among SWGT (Cross & Cross, 2019).

Now, do not let this persuade you that I am only interested in qualitative research. I learned a great deal from the standardized instruments we used to explore the psychology of SWGT (Cassady & Cross, 2006; Cross, Cassady, & Miller, 2006; Cross et al., 2018). The early work Larry and I did to identify just how uncomfortable SWGT become in certain social situations, so much so that some of them will lie rather than be exposed as gifted, was based on a survey of students in the Tennessee Governor's Schools (Cross, Coleman, & Terhaar-Yonkers, 1991). However, this survey was developed after we had talked with countless SWGT about their social experiences. A guiding principle for me has been Oliver Cromwell's (1650) exhortation: "I beseech you, in the bowels of Christ, think it possible that you may be mistaken." It is when we think we *know* something that we need to be reminded of this. I am confident that my understanding, appreciation, and use of both positivistic and qualitative research approaches have served me well in my roles as editor of seven different journals and multiple edited books.

Suicide. On the night in the spring of 1994 when I accompanied the dean to the Academy prom, I learned that another student who had spent a brief time at the Academy had killed himself a few months previously, while in a mental health facility. Two months after the prom, a third Academy student died by suicide. After the cluster of suicides at the Academy, a task force was created to learn about why they had occurred and to make recommendations to avoid future suicides. The work of the task force led to changes in the Academy's policies. After admission, we asked parents to provide detailed information about their children's mental health and to share any experiences that may affect

it (e.g., death of a loved one, divorce, etc.). The school was prepared through training of everyone at the Academy and adding staff to rapidly respond to distressed students. Through frequent convocations, students learned to overcome their belief that it was wrong to tell adults when their friends expressed suicidal ideation, adopting the mantra, "It is better to have a live enemy than a dead friend." Our proactive approach has meant that no suicides have occurred at the Academy since implementing the task force's recommendations 25 years ago. We shared information broadly, in publications (e.g., Cross, Cook, & Dixon, 1996) and presentations, in the hopes of preventing suicide at other residential schools. In 1996, under my editorship, a special guest edited issue of *JSGE* (volume 7, issue 3) focused on suicide of SWGT.

Since being a part of the task force, I have continued to conduct research on suicidal ideation with colleagues (Cassady & Cross, 2006; Cross, Cassady & Miller, 2006; Cross et al., in press; Cross, Gust-Brey, & Ball, 2002; Gust & Cross, 1998; Gust-Brey & Cross, 1999) and share what I have learned with others (e.g., Cross & Cross, 2018; Cross & Andersen, 2015; Cross & Cross, 2017b). People frequently ask me if SWGT die by suicide more often than their peers. Although we do not know with certainty, indications are that they do not. Some risk factors that can lead to suicidal behaviors are associated with giftedness (Cross et al, in press; Cross & Cross, 2019). There are unique pressures and experiences no one else can have. In the wrong confluence of characteristics and events, suicidal behavior is possible. It is imperative that we learn more about suicide among SWGT to avoid not only the loss of the student, or the loss to the family or community, but also the loss of their potential contributions generally. With the current level of suicide across age groups at approximately 45,000 people per year, we cannot even imagine the loss all of these people to the culture and future of the US.

Family members

The unvarnished truth or the editor's editor

Anyone who knows me, could share that I am that rare, fortunate person who has had a life partner for four decades. In essence, I have grown up with Dr. Jennifer Riedl Cross in my corner since

we were 15 and 16 years old, respectively. In our 39 years of marriage, we have supported each other in the other's goals, ideas and dreams. She has made considerable sacrifices for me and my career, that have enabled me to work on the things described in this paper. Part of the lesser known story is that Jennifer has always helped me with my academic work. For example, she has quite literally edited everything that I have submitted for publication. She helped me think through ideas, while offering critiques in real time. For the past 10 years, we have been able to work more directly as colleagues. Her academic work while at William & Mary has been outstanding, finally providing her a vehicle to show the world what she can do. The Center for Gifted Education would not be where it is today without her scholarship over the past decade. There is an old joke about who was the better dancer, Fred Astaire or Ginger Rogers. The punchline is that Ginger Rogers is, because she can do all that he does, backwards and in high heels. This joke is characteristic of a lesser known giant whose shoulders have supported me for 44 years, Dr. Jennifer Riedl Cross. Like Ginger Rogers, she is the better academic because she has done her work in the shadows, with no attention, little support, while raising four children, being in graduate school for many years, moving multiple times for my career, putting on hold her academic aspirations—all for me. She writes better than me, she is better organized, many of her ideas are better than mine, and she keeps me from going off the rails. The unvarnished truth about whatever success I may have had in my career is due to the fact that… I married quite well.

Conclusion

When I received the 2011 NAGC Distinguished Scholar Award, I was given the opportunity to speak about my career. My presentation was a list, taken directly from my vita, of 62 co-authored publications. I also have many single-authored publications, but I see the co-authored publications as an important part of my legacy. Larry Coleman once told me, "People around you seem to do quite well." I hope that I have made a difference in the lives of those around me by providing opportunities that were made possible by my efforts and the generosity shown to me by my friends and colleagues. This is true for SWGT, their teachers, the counselors who serve them, their parents or others who care for them, faculty members, board members, school administrators, the list goes on and on. In the end, none of my successes were accomplished alone. I have learned what I have by standing on the shoulders of giants. This includes my parents, their parents, Jennifer, Roy, Larry and all those mentioned previously. I believe in leading by example and have attempted to live my life that way. While always wishing that I was less introverted, and with a better personality, I hope that I made up for my shortcomings by working on behalf of others for the past 40 years. All of this has been to help develop the talents and psychological well-being of SWGT, that they may achieve their potential. My father was probably right when he said that I have a "quiet but thundering enthusiasm" for what I do. I hope that all these efforts will improve others' lives.

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A message of  during a pandemic

Helen Lepp Friesen
Department of Rhetoric and Communication, The University of Winnipeg, Canada

Keywords: Art; emotions; pandemic; psychological well-being; stress.

Traumatic experiences like war, dealing with cancer, other major health challenges, or death affect people in different ways. Change is always challenging. “People tend to feel anxious and unsafe when the environment changes” (Usher, Durkin & Bhullar, 2020, p. 315). This year, we can add a global pandemic that has drastically changed our lives where everyone in the world has been affected. “Not only is the COVID-19 pandemic a threat to physical health; it also affects mental health. During a crisis, it is natural for individuals to feel fear, sadness, and anxiety. Indeed, fear from the virus is spreading even faster than the virus itself” (Adhanom, 2020, p. 129). While millions of people have been following stay-at-home orders to remain physically healthy, there has been much less support for the psychological well-being of people. Mass quarantine causes people to feel socially isolated, which causes stress, anxiety, and fear (Rubin & Wessely, 2020). “The toll on individuals is not just physical and financial, but emotional as well” (Restubog, Ocampo & Wang, 2020, p. 1).

Although creative expression will not bring back a lost job, or prevent the fear of getting ill, creative expression like art, music, or dance can assist in mental health. When patients suffering from serious health issues have engaged in art as a therapeutic method, creative expression has reduced stress and anxiety (Reynolds & Lim, 2007; Kaimal, Ray, & Muniz, 2016). Most children engage in art in school or home, but at a certain age, unfortunately, most people leave art behind as something just for those who are good at it. How “good at it” is defined is negotiable. The research shows that “There are many reasons that art is a great stress relief tool, even for those who don't consider themselves artistically inclined” (Scott, 2019). Art is a way to process loss, grief, and trauma (Jones et al, 2018).

Here is one way I engaged with art during the pandemic. On my walks around the park, I often pick up little pieces of wood or bark. I take them home and paint them. My dining room table becomes my studio space with paints, brushes, bits and pieces of bark and wood, a cup of tea, candlelight, and music. Once my creations are dry, I return them to the woods. Here are some samples:


WONDER


Peace


Laugh


HOPE

Like in Kaimal, Ray & Muniz's (2016) research, I would like to have tested my saliva for cortisol levels, before and after my engagement with art. Cortisol is the "body's main stress hormone" and often known as the "fight or flight" instinct (Chang). Stress elevates cortisol and creative expression can decrease an excessive amount. My hope is that seeing my paintings along a path in the park will also have had the same effect of lowering undue stress and anxiety related to the pandemic, but that would be another study – to explore whether looking at or experiencing art also has a cortisol lowering effect.

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About the Author

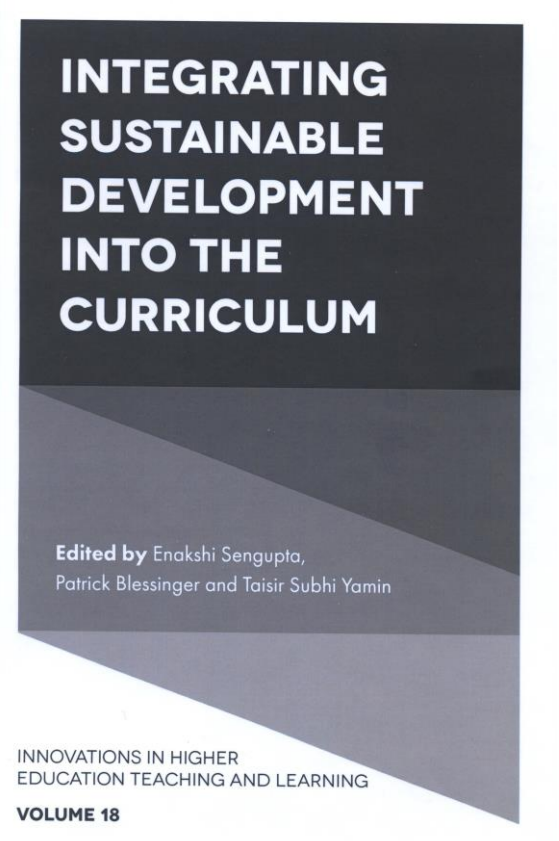
Dr. Helen Lepp Friesen teaches in the Department of Rhetoric, Writing, and Communications at The University of Winnipeg. Her research interests include multimodal approaches to teaching writing in culturally diverse classes. During her Research Study leave, she studied teaching writing in prison. As part of her study, she taught Reading and Composition at San Quentin State Prison in California.

Book Review:

Integrating Sustainable Development into the Curriculum

Enakshi Sengupta; Patrick Blessinger; Taisir S. Yamin, Editors. (2020)

Sandra Linke
Director, ICIE, Ulm-Germany



Creating a sustainable future is one of the biggest challenges that we face as a human race. This is often made even harder by the apathy of many towards the need for sustainability. Education will play a crucial role in finding a solution to the global climate crisis, by shaping future generations who are informed, enlightened and ready to take action.

This book explores the value of institutions of higher education in leading the way on the topic of sustainability education by ensuring that it is well entrenched in the curriculum, as well as in everyday practice and lifestyles. This unique volume features authors from different parts of the world who narrate their own experience of integrating sustainability into their curriculum, and teaching sustainability to students.

By exploring the idea that education and sustainability should be seen as intrinsically linked if we are to see global change, this important text will prove invaluable for leaders, scholars and policy specialists in higher education.

This must-read edited volume brings together a variety of scholars who offer their research results, insights, and practical and pedagogical recommendations for integrating sustainable development in diverse curricula. It is a very significant contribution to sustainability education literature, as it emphasizes not only teaching knowledge but the acquisition of sustainability values. Sustainable development is presented as a multi-dimensional integrated system that requires an interdisciplinary approach. It presents examples from a variety of areas that include: healthcare, urban development, and the global clothing industry. Examples are drawn from multiple countries.

This book clearly shows the scholarly efforts by the editors to bring together the researchers and practitioners to contribute their insights and experiences on the very important dimensions of sustainability integration into the curriculum at different levels and across different geographical terrain. The book will be an essential reference for the practitioners and academics on educational sustainability.

In the introduction, Sengupta and Blessinger highlighted the purpose and introduced their definition for innovation teaching and learning. It is "any approach, strategy, method, practice or means that has been shown to improve, enhance, or transform the teaching-learning environment." (p. ix). In other words, innovation involves doing things differently or in a novel way in order to improve outcomes. "This innovation can be any positive change related to teaching, curriculum, assessment, technology, or other tools, programmes, policies, or processes that leads to improved educational and learning outcomes." (p: ix)

In the first contribution, "Introduction to Integrating Sustainability into Curriculum", Enakshi Sengupta, Patrick Blessinger and Taisir Subhi Yamin pointed out that education has the capability of being a catalyst in changing and preparing students with capabilities to promote sustainability. "Studies have shown that students who are given discourses in sustainability are more motivated, better behaved, and sensitive toward their environment." (p. 4)

Russell Gurbutt and Dawne Gurbutt, in chapter one, "Integrating Sustainable Development into Healthcare Curriculum", set the scene for the need of sustainable development in the healthcare curriculum by discussing the contemporary context of healthcare provision and its associated challenges. "The integrated care programme therefore addresses the question: why are we facing the current issues in this particular setting? And guides learners to explore and construct an origin story to account for a trajectory of development that has resulted in the current position" (p. 19). This draws on their productive thinking skills and reflective analysis using a suitable model as a guide.

In chapter two, "Embedding Sustainable Development in the Curricula: Learning about Sustainable Development as a means to Develop Self-Awareness", Louise Manning and Luis Kluwe de Aguiar described how the spiral curricula are organized, and developed. In addition, they identified the key competences essential when developing a learning programme, including: Adaptability; interpersonal competencies; normative competences; anticipatory competences; and, strategic competencies.

Alana Griffith and Winston Moore, in chapter three, "A Comparative Analysis of Approaches to Integrating Sustainability into the Curriculum at a University in a Small Island Developing State in the Caribbean", compared the approaches used in different disciplines to highlight innovative teaching strategies (like the flipped classroom) that are employed to engage students. The authors emphasize different ways of integrating sustainability into the curriculum; they link teaching units to the sustainable development goals as well as how students confront these issues.

In chapter four, "Integrating Sustainable Development into the Curriculum: A case Study on the Developing of Sustainability Competencies in Industrial Design Students at a Bachelor Level in Mexico", Martha López, Robert Huddleston and Roberto Lozano presented a case study on integrating sustainable development into the industrial design. The focus of this study is on the goal of quality education to make scientific, technological, and

innovation development pillars for sustainable economic and social progress. This chapter reported that the students recognized a significant advancement in their development of sustainability competencies and that this had resulted from this curriculum intervention. This chapter proposes that the findings of the study indicate that a holistic approach has the potential to contribute, in strategic and practical terms, significantly to sustainable development education in Mexico, and thereby to achieving the quality education goals.

Alice Cassidy, Yona Sipos and Sarah Nyrose, in chapter five, "Programmes, Workshops, Resources, and Other Supports for Post-Secondary Sustainability Educators:, provided an overview of integrating of curricular sustainability development and education as well as related institutional leadership at the post-secondary level. In addition, the authors shared tools and resources to support educators from any discipline, to introduce, integrate, and/or enhance sustainability in their course, programme, or initiative. As they are future leaders, it is important that educators address the environmental, social and economic issues that demand attention.

In chapter six, "Hortus in Urbe: Building a Sustainable Development Curriculum in Chicago", Euan Hague, Howard Rosing and Joseph P. Schwieterman described the development of an interdisciplinary graduate programme focusing on sustainable urban development at Chicago's DePaul University. The authors discuss the process of programme formation and adjustment over its first five years of operation, 2013-2018. The chapter highlights some of the interdisciplinary innovations, such as requiring courses in Geographic Information Systems to aid spatial data analysis and visualization.

Niki Harré and others, in chapter seven, "An Interdisciplinary Teaching Module on the Global Clothing Industry: Lessons from Working across Four Disciplines and Two Universities", integrated the interdisciplinary sustainability module into existing courses and has four features, including: (1) it focuses on a complex industry with ramifications for social and environmental sustainability; (2) it involves an issue of direct relevance to the students; (3) students teach those from another discipline as "subject experts;" and (4) students are assessed on their learning within their home course. The authors concluded that universities "can play a vital role in advancing sustainability knowledge awareness, and action, and we argue that they should take this role seriously. One way to do so is for teaching staff to work together on interdisciplinary partnerships. Cross-course teaching modules, such as the one discussed here, not only expose students to useful information from outside their primary discipline, but also give them insight into the complexity of sustainability issues and the need for multi-faceted solutions." (p.123)

In January 2016, Georgia Tech launched a campus-wide academic initiative aimed at preparing undergraduate students in all majors to use their disciplinary competencies to contribute to the major societal challenge of creating sustainable communities. This initiative calls for faculty members to develop courses and co-curricular opportunities that will help students learn about sustainability and community engagement and hone their competencies by engaging in real-world projects. In chapter eight, "Integrating Sustainability into a Freshman-Engineering Course through an Institute-Level Initiative: A Teaching-Learning Model with Authentic Activity and Context", Raghu Pucha and others described this initiative and reported the outcomes. In addition, the authors present the pedagogical approaches to learning, strategies, and challenges for implementation and assessment of intervention activities. These programmes allow students to explore different avenues of

engagement and provide opportunities for them to connect course-based projects to broader, multi-stakeholder initiatives.

There is an increasing interest in integrating sustainable development into higher education curricula to increase young graduates; agency in addressing sustainable development goals, and raising awareness of opportunities to create local solutions and the organizational competencies to implement these solutions in context. In chapter nine, "Integrating Sustainable Development into the Curriculum: Enacting Scalar Shifting in Education for Sustainable Development Competencies", Paul Benneworth and others developed a model by which a single educational experience could help to bridge between two types of orientations (theoretical and practical). The authors reflect on tensions, problems, and solutions in producing graduates oriented to tackling contemporary societal issues, while gaining valuable personal development experience.

Reference:

Sengupta, E.; Blessinger, P.; and Yamin, T.S. (2020). *Integrating Sustainable Development into the Curriculum*. Volume 18: Innovations in Higher Education Teaching and Learning. United Kingdom: Emerald Publishing Limited.

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Submission Guidelines

Manuscripts submitted to the **IJTDC** should contain original research, theory or accounts of practice. Submission of a manuscript to the **IJTDC** represents a certification on the part of the author(s) that it is an original work, and that neither this manuscript nor a version of it has been published previously nor is being considered for publication elsewhere. If accepted by this journal, it is not to be published elsewhere without permission from the **IJTDC**. However, conference papers included as part of conference proceedings may be considered for submission, if such papers are revised in accordance with the format accepted by this journal, updated if need be, and full acknowledgement given in regard to the conference or convention in which the paper was originally presented.

Electronic submission

Authors should send the final, revised version of their articles in electronic form. Submit the final version to the journal's editorial office.

All submitted papers are assessed by a blind refereeing process and will be reviewed by at least two independent referees. Therefore, avoid clues in the text which might identify you as the author. Authors will receive constructive feedback on the outcome of this process. Please note that the process will take two to three months in duration.

Manuscripts should be written in accordance with the publication manual of the American Psychological Association (**7**th Edition). For example, the following should be adhered to:

Title page

Include title of paper, name(s) of author(s), affiliation, mailing address (include postal codes, if applicable also e-Mail address and fax-number) and a running headline. The title page will be removed by the Editor-in-Chief prior to the refereeing process to allow for a masked review.

Abstract

Should consist of a maximum 200 words on a separate page. The abstract must, if the result of empirical research, briefly outline theoretical basis, research question(s) (in one sentence if possible), methodology and instrumentation, sample(s) and pertinent characteristics (e.g., number, type, gender, and age) as well as the main findings of the study (if applicable include statistical significance levels). Also, include conclusion and the implications or applications.

An abstract for a review or a theoretical article should describe in no more than 150 words the topic (in one sentence), the purpose, thesis or organising structure and the scope of the article. It should outline the sources used (e.g., personal observation and/or published literature) and the conclusions.

Length

A paper submitted should not exceed 7000 words including abstract, keywords, references, and illustrations.

Language

The **IJTD**C is an international scholarly journal and papers should be written in English. It is recommended that non-native English speakers have their papers checked in regard to language accuracy prior to submission. British spelling, as well as American spelling is accepted.

Manuscript

Papers must be word processed, and printed or photocopied with a clear print, double-spaced and with margins of at least 4 cm (approximately 1.5 inches) on all four sides. Use one side of the page only.

Statistics

Are an aid to interpretation and not an end in themselves. If reporting statistics, include sufficient information to help the reader corroborate the analyses conducted (cf APA-manual).

Qualitative data

If submitting a qualitative study, be sure to include a discussion on the stringency observed whilst obtaining and analysing the data (e.g., biases, analysis model, transcription keys, validation of results and so on). Include sufficient data to help the reader, as far as possible, to corroborate the analyses conducted.

Footnotes
Should be kept to a minimum or preferably avoided completely. If used, they should be numbered consecutively with superscript Arabic numerals.

Abbreviations
Must be kept to a minimum and not followed by a full stop, for example cm (not cm.), kg (not kg.)

References
See the APA-manual for a full description of how to make references and how to quote other research or other sources. The reference list should be double-spaced like the rest of the paper, alphabetically sorted with names and journal titles. Note that journal titles may not be abbreviated.

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e-Mail: k.magro@uwinnipeg.ca