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TABLE OF CONTENTS:

	June 2023 Editorial	
	Penina Kiss & Jennie Quinn	Page 1
	Part 2 - New Perspectives on Neurodiversity	
	Pashenka Gribbin	Page 2
	School Reform in the Biden Presidency: Flipping Our Thinking	
	Joseph S. Renzulli & Richard L. Schwab	Page 5
	The Importance of Conceptual Frameworks in Planning Curriculum Differentiation for Gifted Learners	
	Bronwyn MacLeod, M.Ed	Page 7
	Call for Articles	
		Page 11
	Call for Advertising Conferences	
		Page 12



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June 2023 Editorial

Penina Kiss & Jennie Quinn

Greetings one and all from a wintery Sydney Australia! We hope you have had some time to take in the best of what was on offer in our last edition to complement the work you're currently doing in gifted education and talent development. Since we last met, the ECHA conference hosted by Israel has taken place, along with the GAFE and Ignite conferences both held in Australia which highlighted the diverse faces of giftedness. We are now leading up to the WCGTC conference due in August and later in the year, a WGC conference in October. So much to look forward to!

For those of you living in Commonwealth countries, we shared a historical moment in the events that led to King Charles III's Coronation ceremony in May. While there are many valid perspectives on the relevance of monarchy in today's global standing, as well the historical scars that bear heavily priced legacies, the very nature of such a ceremony lends itself to the opportunity to reflect on both tradition and progression.

King Charles III's late father Prince Phillip famously embraced change in the era of early television. His influence in televising Queen Elizabeth's coronation 70 years ago was cutting edge and beyond its time. He successfully managed to find a delicate balance between both tradition and progression in this monumental event that the public had never witnessed before and opened a window to another realm of relevance for the monarchy that would continue into the 21st century, with his own son's coronation this year. It takes vision to successfully move, translate and shape tradition into the future.

For many schools, rolling out the same traditional reading programs each year, annually maintaining a fixed timetable or recycling dated teacher resources that promise student engagement, the comfort of convenience is alluring. In many cases, the stale state of these traditional practices has come at the cost of parents looking elsewhere for their gifted children, and school leaders reflecting on declining enrolment figures. For those that have held on too tightly to the comfort of old, the difficult decision has been to either move forward or remain at risk of irrelevance.

Progressive leaders recognize that tradition can work amid progressive actions, provided that what is kept traditional does not impede the learning of those who require depth, breadth, complexity and pace on a daily basis. Ceremonial practices that promote the vision, mission and values of educational institutions hold great worth, particularly in maintaining a strong sense of belonging. Some well-established schools sustain ongoing relationships with their alumni and this manages to keep their cultures contemporary and in line with global trends.

School leadership's desire to engage in the next new trend can generate fear in teachers too, finding that after they've invested so much time learning a new innovative strategy, it's been quickly superseded by the latest fad they're expected to implement. The fatigue forces teachers to regress back to what was once comfortable and they tend to dig their heels in deeper each time for safety, hence, progressive movements must also be managed wisely just as traditional ones do.

Jennie and I regularly come across schools that wish to move forward with their gifted practices, especially in the twice-exceptional arena. Principals are generally most interested in identifying gifted students and putting in place talent development programs that cater for their diverse needs. While these requests are indeed possible to action, in order to make them so, some traditions have needed to be challenged to the dismay of many staff – the cursed comfort of convenience rears its ugly head! It's a work-in-progress as it would be for many of you in similar circumstances, so we continue the delicate dance of negotiation and collaboration to ensure educational equity becomes reality for our gifted population.

As for King Charles III, after breaking a few traditions and immersing in progressive environmental causes in his already long lifetime, perhaps he'll now remain comfortable until the end of his reign and leave the vision to his subsequent heirs in moving the monarchy towards another realm of relevance. In the meantime, his two sons, the heir and the spare, will continue to embody the stark contrast between royal tradition and controversial progression.

Our guest contributors this edition share with us their expertise in a variety of fields. We have our second and final part to Pashenka Gribbin's series on neurodiversity, a perspective on school reform by Joseph Renzulli and Bronwyn MacLeod shares how conceptual frameworks enhance the engagement of gifted students to deepen their learning.

We'll see you next time in our special edition on STEM.

Penina & Jennie



Part 2 - New Perspectives on Neurodiversity

Pashenka Gribbin

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This is the second part of an article exploring Neurodiversity affirming practices for twice and multi-exceptional students. In part one we were introduced to Felipe, who, despite good speech articulation and age-appropriate language skills, frequently experiences challenges when interacting with others due to difficulties with his awareness of pragmatics, or 'social skills'. In part two, we explore some strategies and adjustments which may be considered Neurodiversity affirming to support twice and multi-exceptional students with Speech, Language and Communication Needs (SLCN).

Traditional social skills therapy within the speech pathology realm has focused on teaching an individual what is expected within a variety of social situations (greet, begin conversation, ask questions, take turns etc.), insinuating that they are deficient in some way if they are unable to deploy these as expected in social interactions. Therapy has focused on the deficits an individual may present with, introducing and practising the targeted social skill in various contexts and receiving positive reinforcement for displaying the targeted skill.

Within the neurodiversity affirming movement, we are hearing the voices loud and clear of autistic people who have undergone intense social skills training and other therapies (notably ABA) and are now reporting that these therapies have been extremely traumatic for them and in some cases, likening it to abuse. The movement of 'Nothing about us without us' (Charlton, 2000) has focused on the importance of listening to the voices of autistic adults and has seen many leading the charge in both research and best practice. The neurodiversity affirming movement has also led to a change in perception of autism, in particular, the recognition of the positive attributes associated with it. The view that autism is a 'disorder' has been challenged in recent years by proponents of the neurodiversity affirming movement, who believe that autism is part of the natural spectrum of human biodiversity, similar to variations in race and sexuality (which have also been pathologized in the past). With this new-found awareness, it is challenging to prescribe a traditional therapeutic response to support the development of an individual's social skills. In light of the possible negative impacts of traditional social skills intervention, I found myself considering the following concepts to develop an intervention plan to support Felipe: Masking, Spoon Theory and Double Empathy Theory.

Masking can be seen as a survival strategy that is used to hide autistic traits and change behaviour in order to be less autistic or more 'socially acceptable' in the dominant culture. The individual is often made to feel that they will never be accepted or successful if they don't hide certain traits about themselves, such as forcing eye contact or enduring sensory overwhelm, despite it being uncomfortable and fatiguing. Masking can impact an individual's self-esteem by leading them to

believe they 'aren't good enough' by not being able to naturally fit in with the dominant culture. It can also encourage the individual to ignore feelings of discomfort, pain & fear, leading to feelings of negativity and exhaustion. Masking also robs others of the opportunity to get to know the individual as their true selves. The deeper and long-term impacts of masking are now known to contribute to mental health issues and depression. With this in mind, it is questionable whether prescribing a traditional therapy model to teach social skills to Felipe would, in fact, be teaching him how to mask and potentially harm his future mental health.

Spoon theory is an analogy coined by Christine Miserandino (2003) to explain the fatigue associated with her chronic illness. It describes the additional effort and energy required by neurodiverse individuals (neuro-minority) to engage in the world (neurotypical majority). Many neurodiverse individuals have to ration their energy in a way that neurotypical people do not. Most people start the day with an almost unlimited amount of energy (spoons) to do whatever they desire. For the most part, they do not need to worry about the effects of their actions and the impact on the number of spoons they have. For neurodiverse individuals, however, many day-to-day tasks (e.g. getting out of bed, navigating the daily commute, socialising at work etc.) can take many more spoons than a neurotypical person. Once a person's spoons run out, they need to rest or engage in other calming activities to restore their spoons. Was Felipe's inability to stand still when engaging with another person indicative of the increased effort required to participate in such an activity and therefore, would teaching him to stand or sit still, be potentially harmful to his ability to maintain a steady level of spoons?

The double empathy theory (Milton, 2012) suggests that "when people with very different experiences of the world interact with one another, they will struggle to empathise with one another" (Milton, 2018), which often leads to miscommunications. This has historically been documented in differences between autistic & neurotypical social communication styles. The blame has usually rested upon the autistic individual's inability to change their communication style to match that which society expects, rather than misunderstandings occurring due to mismatched communication styles. The onus has also traditionally rested upon autistic individuals to change their communication style to fit in with the neurotypical norm. Human communication breakdown is bi-directional in nature. It is a two-way street, a shared problem and not solely the fault of the neuro-divergent person. This theory also suggests that those with similar experiences are more likely to form connections with like-minded individuals (Milton, 2018). Once again, I questioned what my role would be in supporting Felipe. The onus should not have to fall on him to learn the neurotypical way.

Both parties have a responsibility to be curious and open minded about the social communication styles of others.

With all these questions ruminating in my mind, I set about looking more deeply into neurodiversity affirming practices to support Felipe and exploring the balance between accepting his neurodiversity and teaching him the skills needed to function successfully and meaningfully within the world.

When looking at approaches to intervention in this context, it can be useful to draw from the neurodiversity paradigm, which promotes the value in human diversity, suggesting that there is no one type of 'right' or 'better' brain type. 'We want a variety of types of people in our society because that variety enriches society as a whole. But we also don't want to make people feel bad for being who they are' (Dwyer, 2018). When selecting an appropriate intervention, a fundamental question is 'Will doing X with the person change what fundamentally makes that person them?'. If we focus on changing what is core to an individual, we run the risk of telling that person that there is something inherently wrong with them. Can we teach social skills effectively in a way that doesn't shame the person? Can we help the person understand and celebrate their strengths & differences and how these can be harnessed appropriately to maintain a positive sense of self?

With this in mind, a framework was developed to encompass a 360-degree view of adjustments to consider to support Felipe to be the most effective communicator he can be. These adjustments encompassed 3 main areas: the communication environment, the communication partner, and the individual. Through a process of observation in a range of environments Felipe interacts within, liaison with key adults and peers in Felipe's life and direct consultation with Felipe, we were able to co-create a menu of useful and practical adjustments to support his current communication skills and pave the way for success in developing communication skills for the future.

Arousal is the level of alertness in the body. It ranges from low (asleep) to high (highly stressed). Different activities and environments require different levels of arousal. And different environments and activities can impact our arousal. Working closely with Felipe's Occupational Therapist (OT) facilitated a deeper understanding of his arousal levels and an awareness of how to best support him to maintain a steady state. It was hypothesised that one reason he was unable to remain still during interactions was that his body was dysregulated. Self-regulation is the ability to stay regulated without the help of others. It is the ability to use your own strategies to either calm down or energise. Autistic individuals often need more support to learn to self-regulate through exploring sensory regulation strategies that work best for them. By working together with Felipe and his OT, strategies were identified to support his regulation, such as specific calming and breathing exercises, heavy movement activities and listening to certain types of music. Within an educational context, 'environmental adjustments are modifications to the school environment which help students learn on the same basis as their peers. The learning environment is not limited to just the classroom, it may include the playground, outdoor learning areas, school library, sporting fields and excursions' (NSW Government, 2023). A team approach supported Felipe's teacher and other school support staff to deepen their understanding of how these adjustments could be incorporated into his environment across the school day, such as modifying classroom spaces to minimise distractions and implementing activities to support him to manage his excess energy.

'A communication partner is anyone who talks or interacts with another person' (Speech Pathology Australia, n.d.). They play a key role supporting people with communication disability to use their preferred communication method and enable independent communication. Increasing communication partner's awareness about neurodiversity and neurodiversity affirming practices is an essential first step in raising awareness and advocating for better supports for neurodiverse (including twice & multi-exceptional) students. Felipe's communication partners

(including peers and teachers) were provided education on topics such as anti-stigma training, prosocial behaviour and acceptance. Lovell et al. (2023), found the range of free videos from the National Autistic Society helped caregivers of autistic children to better understand and empathise with their child. The videos might be helpful in increasing empathy and understanding in other groups, too. In consultation with Felipe, education was also provided to his team around his particular neurodivergent learning and ways of communicating. With a deeper understanding of his sensory needs and preferences, there was greater acceptance of his need at times to openly stim and less emphasis on requiring him to make eye contact. Lim Lee et al. (2023) explore the positive impacts of encouraging autistic adolescents to join interest groups (e.g. coding clubs) on health & wellbeing, social relationships, self-confidence & self-esteem, sense of belonging and participation in activities. Felipe was provided with opportunities to develop genuine friendships with like-minded peers and encouraged to explore special interest groups that focused on authentic participation rather than neurotypical participation.

Within an educational context, the process of student consultation (Tancredi, 2020) is essential to ensure students with disability can access and participate in education on the same basis as their peers who do not have a disability, ensuring that reasonable adjustments are meaningfully designed and implemented. By placing the individual at the centre of any decisions that involve and affect them, we are ensuring that they are aware that their voice is not only important, but listened to and acted upon, thus enabling greater self-identity and esteem. When developing any intervention plan, it is important to refer to and base any recommendations in research and the current evidence base. It is also important to consult with the individual who is going to be impacted the greatest by any suggested strategies, as only the individual themselves can give feedback on which strategies have a positive impact on their personal communication and relationships. In promoting a neurodiversity affirming approach we can support the individual to develop a positive autistic identity that recognises personal strengths and promotes self-advocacy skills by increasing their confidence to explain their differences and stand up for their rights.

It is important that people with autism are understood by others and themselves. A recent survey by Bertilsdotter (2022), demonstrated that neurodiversity affirming approaches are essential to support understanding, self-awareness and acceptance amongst young autistic adults. Em Mainey's resource, 'Telling your child they are Autistic' (Neurowild, 2023) was useful in supporting Felipe's understanding of his own neurodiversity and became a platform for discussions around perceptions, strengths, and support around his autistic identity. Strengths based strategies such as reflecting on and learning from previous socially based experiences to support the development of self-awareness around communication breakdowns and conflicts with friends and partners. These approaches can highlight an individual's talents or special interests, which can further promote positive autistic identity. Mirenda et al. (2022), suggest that identifying and supporting positive character strengths such as kindness and perseverance aligns with increasing motivation, participation and learning for autistic students. There are also correlations to improved student-teacher relationships. Developing a sense of self, safety and self-advocacy are critical skills in developing confidence to explain their differences and enabling individuals to stand up for their rights with peers and adults. Fede & Laurent's (2023) Communication is Safety resource highlights words that empower an individual to feel that they are a competent communicator with important and respected messages.

"Ironically, I believe Picasso was right. I believe we could paint a better world if we learned to see it from all perspectives, as many perspectives as we possibly could. Because diversity is strength. Difference is a teacher. Fear difference, you learn nothing". - Hannah Gadsby.

Looking to the future, we are living in an exciting time of rapid change. We are hearing the voices of the neurodiverse community louder and clearer than ever before. Within the speech pathology field, we are seeing the rise

of neurodiverse therapists, who as part of the neurodiversity affirming movement are sharing their unique experiences and insights. We need to listen to these voices and learn from what they have to say - once we know better, we can do better.

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School Reform in the Biden Presidency: Flipping Our Thinking

Joseph S. Renzulli & Richard L. Schwab
University of Connecticut

The confirmation of Connecticut Education Commissioner Miquel Cardona as U.S. Secretary would start a new and welcome day for education in our nation. As an educator dedicated to ensuring all children have a meaningful education that prepares them for sustaining and enhancing our democratic republic, he has a chance to reset our national focus. Unfortunately, he inherits a history of educational reform that has been well meaning but unsuccessful. Past federal efforts such as No Child Left Behind (NCLB) and Every Student Succeeds Act (ESSA) have had minimal effect on student achievement especially in reducing the achievement gap among low income, racially marginalized, and dual language students. Meanwhile, increased stress and pressure on students and educators has resulted in a range of challenges from student depression to teacher turnover. Albert Einstein is credited with saying “The definition of insanity is doing the same thing over and over again and expecting the same results.” We must heed his words, recognize our failures, and have the political will to reset our path forward.

The two of us have more than 9 decades of collective experience as researchers, policy advisors, and advocates for public schools. We feel that no matter how you interpret it, the “evidence based” school improvement requirements of NCLB and ESSA have focused only on improving commercial standardized test scores. This is turning our schools into tedious memorization and worksheet factories and betraying our students, especially at schools that serve low income and racially marginalized students. It is time to examine alternatives to a system that thinks drill-and-practice pedagogy and a test prep mentality will improve schools while it instead is turning them into punitive, dreary, and unhappy places for our young people.

Is it possible to make enjoyment, engagement, and enthusiasm for learning— what we call the three “3 Es”—the predominant mission of American Education? We believe so. We must be realistic about the stranglehold that the standards promotor, text-book companies, and the testing industry have on our schools we can deemphasize their importance and focus on meaningful education where students are engaged in their learning and teachers are freed to inspire and support that engagement. We need a willingness not just to think outside the box, but to throw the box out the window, and build a new box without a lid.

How do we start building this box? We can start by small but effective steps to infuse enjoyment, engagement, and enthusiasm for learning into the required curriculum. The first thing we can do is to identify, support and reward the still-optimistic teachers who are willing

to learn skills that focus on the 3 Es. We must trust and empower our teachers who know our students best to lead the way. Effective school change has always been a bottom-up rather than top-down process.

The first skill for teachers to learn is how to use observation and student completed self-assessment instruments that identify strength and student interest areas. With this knowledge they should experiment with practices allowing students to select books in a high interest area rather than depending on basal readers and required textbooks. Asking open-ended questions about required curricular topics provides a compass for infusing interesting engagement activities into the prescribed curriculum. “What are some things about the Great Depression that you would like to learn about?” The Music? Movies? Fashions? Photographs, Cartoons? Popular fiction? Imagine the interesting research, creativity, and thinking skills that can result from infusing these choices into this unit of instruction. These are the skills that control access to opportunity and advancement in today’s rapidly changing and highly competitive job market.

There was a time when the scarcity of resources and limits on teachers’ time made interest-based searches unrealistic; however, the Internet has made such information just a few clicks away. The second skill for teachers to master is how to quickly find highly engaging enrichment resources. With the unlimited resources on the internet teachers have access to a world of exciting activities. They can do a virtual dissection and preservation of their own mummy when studying about Ancient Egypt, they can design and build their own roller coaster as a science project, or take virtual field trips to presidential libraries, museums, or recording studios in Hollywood.

Perhaps unintentionally, the pedagogy of prescription has withheld from students, particularly low-income children, exactly the kinds of thinking skills needed to succeed in today’s higher education and our growing global economy. The word, “perhaps” is used because we don’t think there is a clandestine conspiracy on the parts of policy makers and the textbook/testing industries to keep low-income children poorly educated, thereby limiting access to higher education and economic mobility. But make no mistake, neglect, mismanagement, and a lack of courage to challenge unsuccessful practices is the equivalent of a bona fide conspiracy.

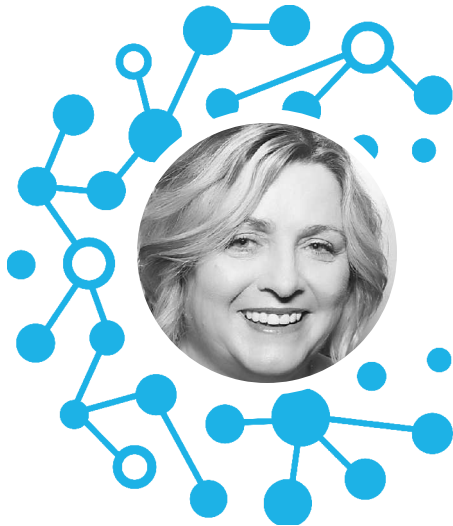
Since failed approaches have continued to produce dismal results, perhaps it is time to examine a counter-intuitive approach that is the polar opposite of the pedagogy that Pavlov used to train his dogs!

Accountability for the truly educated mind in today's knowledge-driven economy should attend to the thinking and executive function skills and creative problem solving that drive growth in our economy, culture, and employability.

These are the student engagement-oriented skills that grow young minds, promote genuine enthusiasm for learning; and, as research has shown, increase achievement. We need leaders at all levels to be courageous enough to provide all students with a more highly enriched diet—the diet that characterizes learning in the nation's very best public and private schools. This is not to say that we should abandon a strong curriculum that focuses on basic competencies, nor should we forget to demand accountability data. We need to move the focus away from memorizing content and test preparation toward the thinking skills listed above; and we need accountability procedures—not just tests—that show how well students are learning to apply their thinking to authentic problem-solving situations.

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The Importance of Conceptual Frameworks in Planning Curriculum Differentiation for Gifted Learners.

Bronwyn MacLeod. M.Ed
Director: The ALDEA Group

Introduction

In educational systems all over the world, educators are tasked with the responsibility of meeting the needs of all learners in their classrooms through the programs and curriculum options they construct and deliver. Every classroom is a community of diversity, which includes students of different ability levels and learning preferences, students with a variety of prior understandings and skills, students of different cultural experiences and language backgrounds, as well as a variety of affective differences and learning difficulties. Each learner has specific needs and whilst the curriculum guidelines and syllabus documents provided by governmental curriculum authorities are designed to reach most learners in these classrooms, additional strategies are often needed for those students, such as the gifted learners, whose needs exceed those of the mainstream.

Differentiation is the process of modifying learning experiences to ensure that all students have the opportunity to engage in the learning process at their optimum level, and in the case of gifted students, that this is as qualitatively different as their level of ability requires. Differentiation has become the global approach to addressing the needs of the diversity of learners in schools, as it promotes equity in the mixed ability classroom and focuses on best practice instruction (Tomlinson, 2000, 2001; UNESCO, 2004).

Gifted students differ markedly from each other in the curriculum modifications they require because their characteristics and needs are so personal and unique. However in general, as a group they comprehend complex ideas quickly, learn more rapidly and in greater depth than their age peers, and they may exhibit interests that differ from those of their peers. VanTassel-Baska's longitudinal research presented at the Asia Pacific Conference in 2008, clarified that the three key characteristics of gifted learners, which should guide curriculum planning were those of precocity, intensity and complexity. They therefore need time for in-depth exploration, time to manipulate ideas and draw generalisations about seemingly unconnected concepts and be provided with opportunities to ask provocative questions.

The Research: What do gifted students need?

The need to differentiate curriculum for gifted students arises from the need to provide specific learning experiences in which these students can excel. Researchers (Reis & Purcell, 1993; Yang & Siegle, 2006) have documented that approximately 40% to 50% of traditional classroom

content and skill instruction at a given grade level is redundant for gifted students; yet gifted students spend up to 80% of their time in classrooms working on the same content, knowledge, and skills as all other students, resulting in a lost opportunity to learn.

Over four decades ago, Maker (1982) proposed that a curriculum for gifted learners is one that provides modifications in three different ways - in breadth and/or depth, in tempo or pace, and in nature or in kind. In examining the research in the field of gifted education since Maker's first premise, it is clear that the academic needs of these students (VanTassel-Baska & Brown, 2007), the socio-affective characteristics (Csikszentmihalyi, Rathunde & Whalen, 1993; VanTassel-Baska, 2010) and the specific learning needs related to their level of ability and level of interests must be taken into account when planning differentiated curriculum and programs.

VanTassel-Baska (1993) proposed that three distinctly different curriculum models demonstrate appropriate modifications for gifted curriculum development. Each of these models rely on a foundation of key concepts to underpin the planning process of the curriculum development. The first of these models is the content model, which "emphasises the importance of learning skills and concepts within a predetermined domain of inquiry" (VanTassel-Baska, 1993, pg. 370). The approach in this model allows acceleration as a result of curriculum modifications whereby students are able to move through skill areas at a rate that matches their cognitive capacity.

The second curriculum model is that of process/product modifications. In this model, students develop high quality products resulting from a scientific and social investigation process. Students work collaboratively with teachers and experts as well as developing their independent research abilities. Educational learning experiences in this model are student-directed, hands-on, conceptually framed and inquiry based. Renzulli's Enrichment Triad (Renzulli, 1977) and the Purdue model (Feldhusen & Kolloff, 1978) are specific examples of this model.

The third curriculum model is the epistemological model, and it focuses on students' understanding and appreciation of systems of knowledge rather than the individual elements of those systems (VanTassel-Baska, 1993). In this model, there is a constant interrelationship between form and content and students are exposed to many ideas that are not always covered in the regular curriculum. Abstract concepts (both macro and micro) are central to this model rather than subject matter or process skills. It is this model, which has been gaining momentum in the field, as more research indicates its effectiveness with all learners,

especially the gifted (Tomlinson, 2000, 2001, Erickson, 2002, Robinson, 2004, VanTassel-Baska, 2010). The use of conceptual frameworks in the development of curriculum differentiation promotes higher level, integrated thinking and deeper understanding of knowledge and skills for all students by making connections between previously discrete topics and learning processes (Erickson, 2002, 2007). School-based action research projects (MacLeod, 2002, 2006, 2008) and academic research in the field (Tomlinson, 2000; Erickson, 2002) have shown longitudinal positive gains for all students when schools have committed to a policy of curriculum differentiation involving conceptual frameworks in all subjects and all stages of their teaching and learning programs.

Research and Theoretical Basis for Conceptual Frameworks

Conceptual understanding is the ability to apply knowledge across a variety of instances or circumstances. It differs from declarative knowledge learning in that declarative knowledge involves a memorization of an association between two or more entities. Conceptual understanding involves the ability to apply knowledge across a variety of previously unencountered instances. Conceptual understanding is considered lasting if the concept represents a “big idea” having lasting value beyond the classroom, resides at the heart of the discipline, requires uncoverage of misconceptions, and offers the potential to engage students (Wiggins & McTighe, 1998; Smith & Ragan, 1999).

The idea of using an abstract concept or concepts to underpin the construction of inquiry-based curriculum is not new and many researchers and theorists have proposed the importance of this approach, however some have built on this idea to develop specific pedagogical systems which may be used in educational settings no matter the age of the student or the discipline being taught.

Mortimer J Adler and the 102 Great Ideas which formed the Syntopicon of the Great Books of the Western World (1952) was influential in starting this thinking. A project led by Adler developed an interconnected list of concepts drawn from an original 443 great works of literature which Adler and his team proposed had a number of applications in education. The fourth suggestion they gave to use the concepts from the Syntopicon as an instrument of discovery and research (Adler & Gorman, 1952. p. xxx) has particular significance in the development of many curriculum models which followed.

In 2001, Anderson and Krathwohl, published a revision of Bloom’s Taxonomy (1956), in which they proposed that conceptual knowledge plays a critical part in a student’s development from knowledge to understanding. The conceptual knowledge in both the original and revised versions of the taxonomy involved connecting the principles, generalisations, classifications, models, and structures of different fields of knowledge and then linking the interrelationships between these within an overarching conceptual framework to enable a student to build a deep and lasting understanding.

When concepts are referenced within the discussion of curriculum development, generally they are concepts that are more abstract in nature, or “big ideas” (Avery & Little, 2003). These concepts are not facts which may be deemed as ‘right’ or ‘wrong’ but along the lines of Adler’s thinking, these concepts are influential in the facilitation of thought, reasoning and critical thinking. Their meaning may be socially, contextually or even historically construed and thus the student’s understanding of the concept will be dynamic. Teachers who have been trained in working with conceptual frameworks may facilitate gifted learners’ process of concept development by providing contexts in well-developed teaching programs and lessons that lead step-by-step to deeper understandings (Avery & Little, 2003).

Conceptual frameworks have formed the basis of the Language Arts, Social Studies and Science Integrated Curriculum Model (ICM) units of work from the Center of Gifted Education at the College of William and

Mary and these units have been researched for their efficacy for more than a decade. “The dimension of concept learning in the ICM stresses the importance of using a core concept as an organiser within subject areas and as connectors to interdisciplinary learning. This core concept approach is then integrated throughout the curricular units of study through task demands, questions and assessments” (VanTassel-Baska & Wood, 2009 p.350). The ICM emphasis in content, high-level processes and products, and concepts provides a model for organising curriculum but also a scaffold for teaching (VanTassel-Baska & Wood, 2009). Research undertaken to map learning gain experienced by students who were taught by teachers using the ICM units of work in comparison to those who were not taught with ICM units, found considerable conceptual, content and skills growth measured and in particular, for the gifted students. The learning growth of all of these students was substantially higher than those who had not experienced learning through the ICM units and these findings were consistent over a decade of research.

Another well-known pedagogical framework with a focus on developing conceptual understanding is that of the International Baccalaureate. In fact, at all levels from the Primary Years Program (PYP), the Middle Years Program (MYP) and within the Diploma Program (DP), the focus on teaching through concepts is explicit. As part of this framework, concepts are viewed as broad, powerful organising ideas that have relevance both within and across subject areas. Students are encouraged to engage with complex ideas, and to discuss the “big ideas” behind topics in order to unpack why they are learning a particular unit or topic (Erickson, 2012) There is also a strong link between teaching through concepts and moving students from concrete to abstract thinking, thus facilitating the transfer of learning to new contexts.

Conceptual Frameworks in Practice

When teachers begin to implement concept-process curriculum models they start by discovering techniques to help students think beyond the facts. With a student population who have been trained to think more about facts than ideas, the transition can be difficult. It takes patience and perseverance on the part of teachers, but with persistence, students will begin to understand that facts relate to bigger ideas.

As a starting point for planning, concepts should be abstract, timeless and universal by definition and generalisation. For example, abstract concepts stimulate higher-level thinking. They rise above the fact base to foster a deeper understanding and they provide students with a “big idea” that will help them process their world. Timeless concepts transcend individual situations. An example of this is the concept of ‘Change’. When a student understands that change is inevitable, they can take that understanding and apply it across different stages in their learning. Universal truths are those that can be applied across many different fields of knowledge. This is crucial in order for students to draw connections between different areas of their life. A conceptual framework can be aligned to syllabus outcomes when required and linked to inquiry questions to develop complete units or programs of work. These can in turn be differentiated at multiple levels to allow for implementation in mixed ability classrooms at any age level.

The following is an example of a differentiated inquiry unit for a Year 7 or 8 English class based on the macro concept of ‘Change’. This framework is first step, the next step would be to develop the differentiated teaching and learning activities in response to diagnostic assessment and syllabus requirements using this framework as the guide. If the unit needs to cater for students who are needing curriculum support then an additional column of adjustment may be included.

Macro Concept: Change		Focus Question: Is adolescence a time of life that all experience equal	
Micro Concepts: Time, Representation, Culture			
Core	Extension One	Extension Two	
How is adolescence experienced physically, <u>emotionally</u> and intellectually?	To what extent is one aspect of adolescence more influential than another?	Is it possible to avoid or miss adolescence?	
Generalisation: Change is experienced by individuals and groups			
Do all cultures recognise the time of life called adolescence?	How and why do cultures treat adolescence in similar or different ways?	Is adolescence valued equally by all cultures?	
Generalisation: Change is contextual			
Was adolescence recognised by past cultures and/or civilisations?	How and why do 'rites of passage' relate to adolescence?	To what extent did longevity play a part in the experience of adolescence in the past?	
Generalisation: Change occurs over time			
How does media inform and express the issues of adolescence?	How and why does the media determine the way adolescence is represented?	In what ways has the representation of adolescence in media been influenced over time?	
Generalisation: Change is represented and communicated			

Conclusion

The development and use of conceptual frameworks in differentiated curriculum is a process that takes time, planning and patience however the long-term gains for students at all levels of ability, and particularly for the gifted students has been validated through longitudinal academic research and local action research projects. Research has also shown that gifted students embrace teaching and learning opportunities, which have depth and complexity within these conceptual frameworks and that require strong abstract reasoning (VanTassel-Baska, 2010; Rogers, 2007).

When engaged in the learning process, gifted students analyse, create, and evaluate advanced information (Bloom, 1956) and often use technology to transfer their learning from one situation to another (Siegle, 2005; MacLeod, 2008). They are able to understand complicated problems and undertake challenging inquiries, which require analytical reasoning skills and the application of well-developed skill sets learnt from the use of technology (Siegle, 2005). They are also able to hypothesise and search for patterns based on the large data sets available online (MacLeod, 2008).

Finally, in a concept-based model all students must process the content of the discipline or disciplines through their abstract reasoning and critical thinking to develop their conceptual understanding. The macro concept combined with the inquiry questions provides a conceptual draw for student motivation and engagement. The teaching and learning moves from lower order thinking skills which previously focused solely on the learning of facts to deeper, personal inquiries as students consider connections between the content, their context and the macro and micro concept(s). This is beneficial for all levels of ability and for students at all ages no matter their context.

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4. All non-native English speakers should make sure to check their articles for language accuracy before submitting them.
5. The article should be in Times New Roman font, size 12 pt.
6. Authors should avoid using footnotes.
7. Authors should adhere to the APA style and/or formatting guidelines provided in the APA Manual, 7th Edition.
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9. The article should be submitted as an email attachment as a Microsoft Word document.
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