WORLD GIFTEDNESS CENTER

WorldTalentWeb

NEWSLETTER

FEBRUARY 2024

NEWSLETTER OF THE

WORLD GIFTEDNESS CENTER

ISSUE 28

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ISSN: 2709-0728

WTW Newsletter Editorial - February 2024

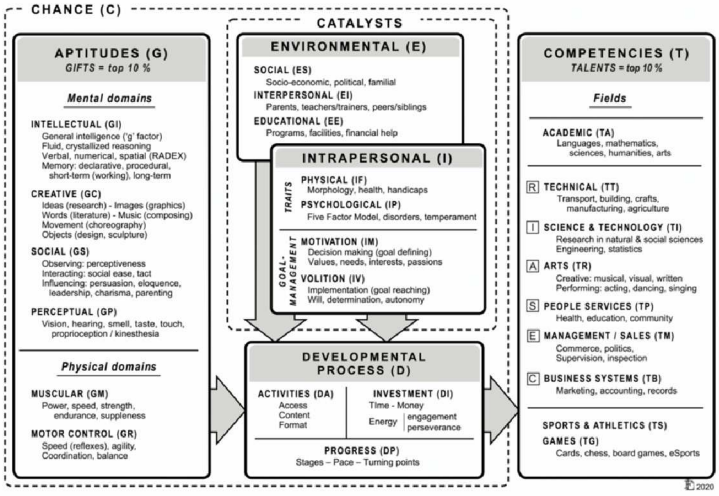
Penina Kiss & Jennie Quinn

Welcome to 2024! We hope you have relaxed and rejuvenated yourselves over the holiday period for what we predict will be an exciting year ahead.

Firstly, we'd like to acknowledge that the world has lost a beautiful light, as we fondly remember Professor Leticia Peñano-Ho, a valued member of the Philippine Centre for Gifted Education and the WorldTalentWeb advisory board, who passed away in January this year. We extend our deepest condolences to her family, friends and colleagues as they process their grief. Leticia's incredible legacy in gifted education lives on in those with whom she so generously shared her expertise, within and beyond the Philippines. We solemnly dedicate this WTW edition to Leticia and her family.

https://upd.edu.ph/farewell-3/

It seems there is much change in the sphere of global royalty and wonder about its significance in our current worldview. To that point, a gracious woman named Mary Donaldson, best known as Crown Princess Mary, has recently been crowned Queen of Denmark. Why would this mean so much to Jennie and I since we've already had a heavy dose of regal pomp from the UK Coronation of King Charles? Well, we are able to claim quite proudly that Queen Mary hails from our very own Australia. She grew up in a quiet island south of the continent and is the first Australian to be bestowed a royal title in Europe. What are the chances?
This prompted Jennie and I to revisit the chance factor in Françoys Gagne's Differentiated Model of Giftedness and Talent, the DMGT 2.0 as it is affectionately known to those who use this framework in their educational contexts.



So, what is the definition of 'chance'? According to the Oxford online dictionary, chance is defined as 'a possibility of something happening' or 'the occurrence of events in the absence of any obvious intention or cause.' Gagné reflects on a statement by the late John William Atkinson who was claimed to say that 'all human accomplishments could be ascribed to 'two rolls of the dice' - the accidents of birth and background', (Gagné, 2008). Furthermore, Tannenbaum stated, 'Chance factors, then, represent the entirely unpredictable events in a person's life which are critical to the realisation of promise and to the demonstration of developed talents', (Tannenbaum, 1983).

The DMGT chance factor has evolved over the years, changing from once being a subcomponent of the Environmental catalyst to becoming a catalyst in its own right. Gagné acknowledged that 'chance represents the degree of control that talentees have (or perceive they have) over G, D, I, and E causal influences', (Gagné, 2020), where G, D, I and E are the Gifted, Developmental Process, Environmental and Intrapersonal components of the DMGT. While we are unable to control our personal genetic composition from conception, which influences aspects of the DMGT such as natural abilities (G), temperament, (I) personality (I), or the communities we are born into (family and social), these elements play a significant part in chance influencing the possibilities of talent development.

This phenomenon reminds me of a student I worked with years ago who I noticed was talking erratically to himself on the playground, thinking and pondering on his ideas alone. I had only just started teaching at this school, so I was curious about who he was and what his profile looked like. After some investigating, I discovered he started playing the piano at the beginning of high school, never having had a lesson in his life, which astounded people. He was in mixed ability classes across all his subjects, did well in math and music but not much else. Looking at his ability test results, he performed strongly in the non-verbal components but was not included in any gifted programs on offer at the school – and he had been at the College for two years already.

When asked about why this student was not considered for the gifted program, the principal responded that 'he has poor handwriting', therefore he was not fit for the group. To compensate for that, she said he was asked to play piano at assembly regularly to show his talent. After much advocacy with the collection of data I had gathered, a diverse-learning case management team and assistive technologies at the ready, the principal agreed to include 'Young David Helfgott' into the full-time gifted class – temporarily and at my own 'risk'.

After 3 months of deliberate intervention, this student made friends and performed better than before – his words during our accreditation of the gifted program were – "I finally belong". He then went on to study at the Sydney Conservatorium of Music, one of Australia's most prestigious schools for the musically talented.

Albert Bandura once wrote, "Some fortuitous encounters touch only lightly, others leave more lasting effects, and still others lead people into new life trajectories", (Bandura, 1982). What might have been a lost soul became one of great success and achievement, but for the chance of a trained teacher in gifted education recognising the potential beyond the handwriting. It is about reducing the negative chance factor for these students with natural abilities (G) across the domains by knowing the students and challenging deficit thinking, particularly in leadership. Young 'David' may have been endowed with natural ability and a warm, loving family, however, without the Environmental (E) influences, Intrapersonal (I) influences, and especially the Chance factor, we may never have had the pleasure of listening to his incredibly poetic compositions.

And as for Queen Mary of Denmark, perhaps it was more 'luck' meeting her royal partner in life during the Sydney Olympic Games in the year 2000 – though it could always be considered a 'chance meeting' at the Slip Inn!

This edition welcomes the contributions of Dr. Mohammad Al Rashaida and Dr. Ashraf Moustafa from the Special and Gifted Education Department at the United Arab Emirates University, who share their work in fostering critical thinking in gifted and talented students through project-based learning. Dr Julie Bradshaw from the U.S.A provides practical strategies to help manage perfectionism in gifted students, and finally, we have a combined effort by Mingjing Zhu, Amelie Rebmann, Kristin Funcke, Julia Schiefer, Ulrich Trautwein who discuss best practice in enrichment of the Hector Children's Academy Program in Germany.

We look forward to joining you again in April.

Penina & Jennie

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Fostering Critical Thinking Skills in Gifted and Talented Students through Project-Based Learning

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Introduction

In today's rapidly evolving world, education plays a vital role in equipping students with the skills necessary for success. Among these skills, critical thinking is a crucial competency in the era of globalization (Kowiyah et al., 2020). With their advanced intellectual abilities, gifted and talented students require educational approaches that stimulate their thinking and provide opportunities for intellectual growth. Project-based learning (PBL) has emerged as an effective teaching methodology to foster critical thinking skills in gifted and talented students (Munawaroh, 2017). This study explores the benefits of PBL in developing critical thinking skills tailored specifically to the needs of gifted and talented students and provides strategies for its implementation.

Benefits of Project-Based Learning for Critical Thinking Development in Gifted and Talented Students

Project-based learning (PBL) is a powerful instructional strategy that engages students in active learning, problem-solving, and critical thinking. PBL offers gifted and talented students a unique opportunity to develop their advanced cognitive abilities and apply knowledge, ideas, and skills to solve real-world problems (Buck Institute for Education, 2019). This method eliminates the traditional divide between classroom learning and real-world application. Through the completion of projects of varying durations, gifted and talented students can effectively apply their theoretical knowledge and gain a visual representation of their learning journey (Irembere, 2019).

Engaging in hands-on projects provides gifted and talented students with a platform to explore complex problems, think critically, and develop innovative solutions (Chen, 2021). PBL promotes deep learning by encouraging students to analyze information, evaluate evidence, and make reasoned judgments. Gifted and talented students benefit from the opportunity to engage in intellectual challenges that align with their advanced abilities and enhance their critical thinking skills (Chen, 2021).
PBL nurtures creativity in gifted and talented students. PBL encourages students to think outside the box and generate original ideas by allowing them to explore open-ended problems and design their own solutions (Evans, 2019). This creative aspect of PBL not only stimulates the imagination of gifted and talented students but also prepares them to meet the demands of an increasingly innovative and dynamic world.

Strategies for Implementing Project-Based Learning for Gifted and Talented Students

Teachers should consider the following strategies to effectively implement PBL in classrooms for gifted and talented students:

- **Designing authentic projects for gifted and talented students**: Create projects that reflect real-world challenges and cater to gifted and talented students' advanced abilities. Projects should be intellectually stimulating, allowing students to explore complex topics and develop innovative solutions that go beyond standard expectations (Stanley & Moore, 2013). For example, a project may involve the design and construction of a sustainable energy system for a community or the development of a business plan for a socially responsible enterprise.
- **Encouraging Collaboration and Differentiation**: Foster collaboration among gifted and talented students by assigning group projects that allow them to work with peers who challenge and inspire their thinking. Differentiate the project tasks to accommodate the diverse abilities within the group, providing opportunities for each student to contribute their unique talents (Abdallah & Alkaabi, 2023). Collaborative projects encourage students to learn from each other, exchange ideas, and engage in meaningful discussions, which further enhance their critical thinking abilities.
- **Promoting Reflection and Metacognition**: Emphasis is placed on the importance of reflection throughout the project. Encourage gifted and talented students to evaluate their thinking processes, monitor their progress, and identify areas for improvement. Metacognitive practices enhance self-awareness and the ability to recognize and correct biases or faulty reasoning, thus nurturing the development of critical thinking skills (Al-Rashaida et al., 2022). Reflection can be facilitated through journaling, group discussions, or individual presentations in which students express their thinking and learning experiences.
- **Integrating Research and Inquiry**: Encourage gifted and talented students to engage in inquiry-based research by asking probing questions, investigating deeply, and synthesizing information from different sources. This approach enhances critical thinking by developing skills in information evaluation, analysis, and argument construction (Zessoules & Gardner, 1991). Teachers can guide students in conducting research, evaluate the credibility of sources, and critically analyze the information gathered.

- **Providing Ongoing Support and Feedback**: Teachers provide constructive feedback and ongoing support to gifted and talented students. Regular check-ins, individual conferences, and formative assessments enable teachers to monitor students' progress, provide guidance, and scaffold their thinking as necessary. Feedback should focus not only on project outcomes but also on the critical thinking processes used by students throughout the project.

Conclusion

Project-based learning is a highly effective approach for cultivating critical thinking skills in gifted and talented students. By engaging in real-world problem-solving, critical analysis, and creative thinking, PBL offers students the opportunity to apply their advanced knowledge and develop higher-order cognitive abilities (Sasson et al., 2018).
Through collaborative efforts, reflection, and research integration, PBL not only fosters critical thinking but also teaches communication and problem-solving skills that are crucial for success in the 21st century. Educators can exploit the unique benefits of PBL to create engaging and enriching learning experiences tailored specifically to the needs of gifted and talented students.

In conclusion, PBL serves as a powerful avenue to nurture critical thinking skills in these students. Teachers can create an environment that challenges and stimulates the thinking of gifted and talented students by designing authentic projects, encouraging collaboration, promoting reflection and metacognition, integrating research and inquiry, and providing ongoing support and feedback. Through the implementation of PBL, these students will be able to develop critical thinking skills that are essential for success in both academic pursuits and future careers. Embracing PBL empowers educators to unlock the full potential of gifted and talented students by fostering innovation, problem-solving, and a lifelong love for learning.

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Helping Your Gifted Student Manage Perfectionism

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Perfectionism, an inner drive to reach expectations without making mistakes or errors, hinders many gifted students. Perfectionism sometimes causes crippling anxiety that keeps the student from participating in the learning process. Here are techniques and ideas that can help your student overcome this maladaptive tendency:

Identify Feelings

First, help your child understand what perfectionism is and the feelings that come with it. Once feelings of worry, fear, and anxiety have been acknowledged, it can be helpful to explore the origin of those feelings. Why must school-work be done perfectly? Where does that message come from? What would happen if the standard was their best rather than perfection? It is important for the student to let go of thinking that there is only perfect and nothing else.

Practice Coping Skills

After your child becomes proficient at identifying her feelings, brainstorm a list of ways to calm the nervous system. Your student may already know and use strategies. The goal is to increase the number of calming tools your child has available. Some commonly used skills include taking slow, deep breaths, taking a walk-in nature, visualizing a safe place, drawing, talking to a trusted friend, or squeezing a toy. Practice new skills during calm times so they are readily available when needed.

Just Get Started

When perfectionism shows up as procrastination or the inability to begin, urge your child to just initiate an action. Once she begins, her fears may be pushed aside as she focuses on the task. One strategy is to use the five-second rule. Have your child count down from five to one and by time she gets to one, she starts an action. For example, your child may count down and by time she gets to one, she picks up her pencil. Another method is using a kitchen timer. Working for a certain amount of time, may just allow your child to produce without fixating on completing the assignment perfectly. It is always possible to revise later. This may not work for all students as it may cause further anxiety for some.

Change Focus

Help your child find an acceptable alternative to perfection. It may be helpful to teach your child that intelligence and ability are changeable.

Just like athletes practice to improve their skills, the human mind is like a muscle that can improve and learn with practice. Spend time with your child learning about Growth Mindset by Carol Dweck. There are many videos and short articles about how the brain grows and changes by practicing and learning from mistakes. Next, focus on each activity as practice to improve his mind, not to perform each task perfectly or else. Instead of creating a perfect product, a replacement goal can be improvement or progress. Help define what improvement might be. For example, 8 or 9 words spelled correctly out of 10 on the end-of-week post-test is an improvement over 7. Track progress on a chart and then celebrate improvement rather than flawlessness.

Find the Positive

It helps to talk about the difference between optimism and pessimism. There are two ways to approach or reflect on any situation. Teach your student the difference by practicing looking at things both ways. Your child needs to know that he has a choice in the way he approaches every situation. If he chooses to look at the bright side, this may alleviate some of the anxiety that accompanies school assignments.

Learn About Empathy and Self-Compassion

Empathy is the ability to understand how someone else is feeling. We understand how they feel by clues from their body language, the look on their face, their words and actions, and by thinking about their situation. Practice identifying others' feelings from books, movies and in real life. Talk about how to treat someone who is experiencing the feelings you've identified. Begin to practice empathy toward oneself; self-compassion. Encourage your child to share her feelings. Then have her share how she would treat a friend who was feeling that same way. Explain that we are our own best friend. We can provide the kindness we need when we are feeling anxious or overcome with high expectations. Practice saying kind, calming thoughts to oneself. Your child may use this strategy when they notice they are putting pressure on themselves.

Set Daily Goals

Setting daily goals gives us a sense of control and power. Have your student write an actionable goal each morning. This may be a goal unrelated to academics. It should be a small, definable action. Some examples are: smile at three people; give one compliment; get to science class on time; put out clothes for tomorrow before going to bed; take a short walk in nature. At the end of the day, help your student

reflect on the small goal. Did he accomplish the goal? Why or why not? What could be changed for tomorrow? At a future time, you and your student look back through the small goals and celebrate the changes that were accomplished. Discuss goals that were not met and how your student grew from the experience of adjusting expectations.

If these strategies do not help your student overcome the anxiety that accompanies maladaptive perfectionism, it is important to seek professional help. Your student can have a more pleasant experience in school.

For more ideas, please see my book, Compassion, Motivation, and Poise: Building Social Emotional Skills in the Classroom available on Amazon. Everything you need for an entire school year of social emotional lessons. You will be guided through time-tested classroom structures, curriculum, and tools aligned to the CASEL 5 SEL goals. This book contains thirty weeks of teachable lessons. These lessons contain links to helpful videos and texts, and modeled dialogue. There are also photos and posters that can be displayed on a bulletin board to utilize during instruction and as student reminders. Lessons spiral the curriculum, review previously taught strategies, and may also be taught in isolation and rearranged as needed. This curriculum will take about 15 minutes daily with another 45-60 minutes during the week for additional instruction and discussion.

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Best Practice in Enrichment of the Hector Children's Academy Program

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Since 2010, the Hector Children's Academy Program has supported highly gifted and talented elementary school children (grades 1-4) through enrichment courses. It is a statewide enrichment program with a focus on Science, Technology, Engineering, Mathematics, and Medical Sciences (STEMM) topics. It was established through the initiative and continuous funding of the Hector Foundation II, with strong support from the State of Baden-Württemberg in Germany and school administrations. With over 23,000 course participations every year, the program offers STEMM-focused courses across 69 local sites hosted by local schools. In other words, there are 69 local sites of the Hector Children's Academy Program. A key element of the program is the development of manual-based enrichment courses, namely, the Hector Core Courses. The Hector Core Courses are developed following rigorous research standards to ensure course effectiveness through a series of randomized controlled trials (Trautwein et al., 2023).

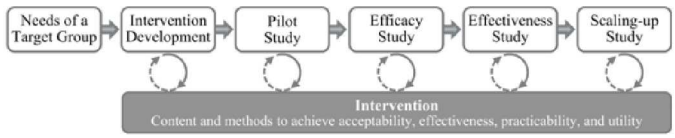
Features of Hector Core Course

The Hector Core Courses have five main features (Trautwein et al., 2023). First, the courses follow a scientific approach, incorporating three key elements: the general talent development framework, domain-specific research, and pedagogical strategies for talented children emphasizing inquiry-based methods. Second, the courses undergo a clear and predefined sequence for development and evaluation. Third, the courses, spanning STEMM domains, comprise approximately 8–12 sessions lasting 90–120 minutes each, facilitating in-depth engagement with the content. Fourth, to ensure effective course delivery in the Hector Children's Academy Program with high fidelity, a course manual and materials are provided along with professional development for course instructors. Last, the courses must demonstrate effectiveness in fostering relevant outcomes through a robust research design before permanent implementation into the program.

Stepwise Development of Hector Core Course

The Hector Core Courses undergo a systemic development process described by Herbein et al. (2018). Figure 1 shows an overview of the six phases. The first step is to identify the target group's needs. Researchers and practitioners are involved in figuring out what needs the target group has but have not yet been fulfilled. Based on the relevant literature, involved researchers decide on specific content, pedagogical approaches, and acquired competencies. The second step is to conceptualize the intervention. Theories from different fields of talent development, specific curriculum development, and pedagogical approaches are used to structure a course so that the desired competencies of the target group will be enhanced. Starting from the third step, which is a pilot study, the target group is randomly assigned to an intervention group and a control group that undergoes another intervention or does not undergo the evaluated intervention, and a series of randomized controlled trials (RCTs) are implemented with various magnitudes. In the pilot study, the RCTs are conducted in a small number of academies. It aims to examine if the course is accepted by the target group and is practicable in reality. A detailed course manual is used and revised according to the received feedback. The pilot study is followed by the efficacy study, the effectiveness study, and the scaling-up study with stringent empirical designs. The efficacy study focuses on internal validity by examining if the desired competencies can be enhanced under controlled conditions. The researchers as course designers or research assistants deliver the course exactly as it was designed and follow the manuals strictly. The effectiveness study tests if the desired competencies can be improved under practical conditions. The regular course instructors are therefore trained to teach the target students in a regular educational environment. Fidelity measures are applied to examine if the course is delivered as designed by the course developer. Lastly, the course can be delivered in a larger context in the scaling-up study. Larger numbers of course instructors and students will be involved to better examine if the acceptability, effectiveness, practicability, utility, sustainability, and efficiency of the course can be achieved (Gottfredson et al., 2015).

Figure 1
Phases of Stepwise Intervention Design and Implementation (Figure from Herbein et al., 2018; Based on Gottfredson et al., 2015 and Humphrey et al., 2016).



An Example of Hector Core Course: "Little Researchers"

A total of 17 studies have been conducted for nine Hector Core Courses so far (Trautwein et al., 2023). To better understand the above-mentioned systematic stepwise process of developing and evaluating the Hector Core Courses, next, I will describe an example "Little Researchers", which is a science intervention program for elementary school students in grades 3 and 4. Students in the intervention group attended the course for 90 minutes one afternoon a week for 10 weeks. The course was developed and systematically evaluated in all steps from its conceptualization to scaling up (Schiefer et al., 2017, 2020, 2021).

The "Little Researchers" course was designed to promote students' fundamental understanding of science as a primary outcome and to increase students' motivation towards science as a secondary outcome. The scientific inquiry cycle (SIC, Pedaste et al., 2015) which enables students to work like scientists by proposing research questions, formulating hypotheses, planning and conducting experiments, analyzing data, and drawing conclusions, was implemented step-by-step and applied in all of the course sessions. Inquiry competencies (e.g., understanding of the SIC), epistemic beliefs (e.g., beliefs about the evolving characteristics of science), and motivation (e.g., the tendency to engage in and enjoy thinking) were expected to be promoted among elementary school students.

The course was developed and implemented as the process shown in Figure 1. Students' needs were identified based on feedback from academies and relevant literature review (phase 1). The course contents were conceptualized (phase 2) and a detailed course manual was prepared and pre-tested in a pilot study (phase 3). Afterward, three intervention studies (phases 4-6) with the design of randomized control trials were conducted to examine the effectiveness of the course. Details about the studies are shown in Table 1. The studies consistently demonstrated the effectiveness of the intervention. The developed course can be used sustainably and effectively in real educational settings.

Table 1
Overview of Studies "Little Researchers"

Characteristic	Efficacy (2014)	Effectiveness (2015)	Scaling up (2018)
Design	Randomized block design with treated control group	Randomized block design with waitlist control group	Randomized block design with waitlist control group
Participants	N = 65 students (58.46% boys, age: M = 8.73, SD = .60)	N = 117 students (71.2% boys, age: M = 8.89, SD = .82)	N = 310 students (63.2% boys, age: M = 8.71, SD = .73)
Course instructors	3 course developers (scientists) from University	10 course instructors from nine local sites of the HCAP	30 course instructors from 28 local sites of the HCAP
Outcome variables and effect size	Epistemic beliefs (S: ES = .18, C: ES = .45, D: ES = .61, J: ES = .43)	Epistemic beliefs (S: ES = .07, C: ES = .20, D: ES = .03, J: ES = .07)	Epistemic beliefs (S: ES = .13, C: ES = .29, D: ES = .16, J: ES = .01)
		Inquiry competencies (SIC: ES = .53, CVS: ES = .37)	Inquiry competencies (SIC: ES = .47)
	Epistemic curiosity (ES = .34)	Epistemic curiosity (ES = .01)	Epistemic curiosity (ES = .00)
	Investigative interests (ES = .12)	Need for cognition (ES = .25)	Need for cognition (ES = .06)
			Self-concept of ability (ES = .20)
			Intrinsic/attainment value (ES = .02)
Fidelity of implementation	Complete adherence to the manual	Good adherence to the manual (M = 90.63%, SD = 13.86), Range: 57–98%	Good adherence to the manual (M = 92.41%, SD = 6.15), Range: 77–100% High quality of implementation (M = 2.77, SD = 0.21), Range: 2.32–3.00

Note. The table was adapted from Schiefer et al., 2021 with added information about the scale-up study. ES = effect size (significant values [.25, .61]); HCAP = Hector Children's Academy Program; SIC = scientific inquiry cycle; CVS = control of variables strategy; epistemic beliefs are multidimensional and include four following beliefs: beliefs about the nature of knowledge (S = source of knowledge; J = justification of knowledge), and about the nature of knowing (C = certainty of knowledge; D = development of knowledge)

Further Prospects

Besides the rigorous quality assurance of enrichment courses such as the Hector Core Courses, a solid support structure including different shareholders (i.e., Hector Foundation, Ministry of Education, Youth and Sport of the State of Baden-Württemberg, program coordination, scientific monitoring, infrastructure providers, and advisory board), extensive public relation services, continuous teacher/course instructor training, up-to-date giftedness conceptions, regular formative evaluation of the overall program, and ongoing research to optimize the selection of gifted and talented students, all contribute to the success of the Hector Children's Academy Program.

The program will continue fostering giftedness by making further efforts as follows: 1) achieving greater decentralization of the course offering; 2) integrating the support program in the all-day school; 3) expanding cross-academy online offerings; 4) expanding a community platform throughout the program; 5) applying a standardized procedure to support the selection of children; 6) identifying and reversing gifted underachievement.

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Call for Articles

We would like to invite you to write an article for the WorldTalentWeb newsletter. The theme and writing style are open for the author to determine. Articles could take the shape of an interview with a specialist in the field, a report on research or a recent event, a book or resource review etc. The guidelines for the article are listed below.

Please submit your article to the following email: WorldTalentWeb@ha.ae

Guidelines for submitting an article for the WorldTalentWeb newsletter

1. A submitted article should be between 800 to 2000 words, not including references.
2. WorldTalentWeb newsletter caters to the international community and thus, all articles should be written in English.
3. American or British spelling is accepted.
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.
8. The article should be submitted with embedded photos, and tables, and figures if relevant.
9. The article should be submitted as an email attachment as a Microsoft Word document.
10. Articles should be word-processed and single-spaced with 1 inch (2.54 cm) at the top, bottom, left, and right of every page as per the APA 7th edition requirements.
11. Authors should strictly observe the copyrights-requirements and cite the work of others correctly.
12. Relevant permission should be obtained if photos of people are used. An email giving permission to use photos publicly is sufficient.·
13. Authors should include their full name, title, institutional affiliation, and a high-resolution color photo.
14. If an article was published before elsewhere, then only submit a summary of the original document with acknowledgment.
15. Authors are encouraged to use supportive pictures.
16. The editorial team reserves the right to edit articles accepted for publication.

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The *WorldTalentWeb newsletter* is bimonthly published by the World Giftedness Center (WGC) of Hamdan bin Rashid Al Maktoum Foundation for Medical and Educational Sciences.
Dubai, United Arab Emirates

WORLD GIFTEDNESS CENTER

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