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Strategies for Differentiating the Curricula for Online Gifted Students: A Delphi Study

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2022

Abstract

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MA, University of Wisconsin Stout, 2009

BS, University of South Carolina, 1993

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Riley College of Education: Learning, Instruction, and Innovation

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Abstract

Educators must meet the needs of the growing online gifted learner population to ensure these students are being appropriately challenged and are receiving the education they deserve. Current gifted education literature does not address the strategies for differentiating the curriculum for online gifted students. The study participants were teachers with at least 5 years' experience working online or working with gifted students. The purpose of this qualitative study was to determine the best strategies for teachers to use to differentiate the curricula for this population. The theoretical frameworks used were Ward's differential education and Tomlinson's differentiated instruction methods. Both theories emphasize the importance of providing curricula for identified gifted students that is uniquely different from the program(s) provided to the "average" student. The research question centered on the best strategies teachers could use to differentiate curricula for online gifted learners. The method used was a Delphi study in which the first-round instrument was created using Qualtrics and contained a list of 33 commonly used methods for differentiating curriculum in the traditional classroom for the panel of experts to rank in order of importance to use for the online gifted population. Panelists added 11 statements during the rounds. The results were the panelists felt almost all of the strategies used for differentiating curricula in the traditional classroom should also be implemented for gifted students in the online learning environment. The implications for social change include a list of the best strategies online teachers can use to meet the needs of online gifted students.

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Dedication

I would like to dedicate this work to my Grandmother Eldonna Evertts. She earned the first advanced degree in our family and inspired me to achieve my own educational goals. Her special visits to me in my dreams during this process helped to keep me on track and focused on this work. I would also like to dedicate this work to the two men in my life who have always had my back: my father and my husband. My father was so proud of me for undertaking this endeavor. He would tell anyone within earshot what I was doing. I'm sure the entire town knows almost as much about this study as I do from having completed it. Finally, this has to be dedicated to my husband of 30 years. Through it all, he has provided me with all the love and support I could have ever hoped for.

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A very special thanks has to go to Dr. Wanjira Kinuthia, my chair. Her guidance was very gentle and thorough. I've never had someone give me revision suggestions that felt like a soft hand guiding me. She was never heavy-handed but got me through to the finish line. Asante, Dr. Kinuthia.

Dr. Carla Lane-Johnson was a savior. She came in after the work had started and educated me on what a Delphi study really should be and helped ensure I was on the straight and narrow with the work.

To my dear friend, Tricia Fuentes, thank you for all of the research suggestions you provided and for listening to me complain when I was stuck…sooooo many times.

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Chapter 1: Introduction to the Study

Introduction

Online learning is much more accepted and recognized as a viable form of education than it was just 20 years ago (Lozovoy & Zashchitina, 2019; Quality Matters™ and Eduventures® Research Survey Finds Online Learning Gaining in Credibility and Respect, Setting the Stage for Future Growth, 2021). As of 2021, the National Center for Education Statistics reported that 43% of students were enrolled in some form of accredited online, K-12 school in the United States. This number has only increased since then. The students attending these schools have a variety of reasons for selecting the online learning environment (Allen, Seaman, Babson Survey Research Group, & Quahog Research Group, 2016). Some engage in extracurricular activities, such as tennis, ballet, gymnastics, among others, that require them to devote numerous hours to training, practice, and participation in tournaments/competitions, which, in turn, keeps them away from the traditional classroom (Lozovoy & Zashchitina, 2019). Other students may have experienced social or emotional issues such as bullying, which prompt them to seek a different environment (Potts, 2019). It is common for students to seek a learning environment that allows them greater flexibility with their schedule so they can pursue other interests (i.e., acting, music, international students seeking an American education), thus bringing them to the online setting. During the process of conducting the literature review (Chapter 2), I discovered, to date, little to no attention has been directed to modifying the online curricula for online gifted students. I began the process of searching using the dates of 2015 to 2020 and went backwards in 5-year increments. Walden

librarians were enlisted to help me with the search parameters, which still did not garner many results. This study was designed to investigate the strategies teachers can utilize to differentiate the curricula for online gifted students.

This chapter provides background information on gifted education in the United States; identifies the problem to be addressed and the purpose of the student; identifies the research question; provides a theoretical framework for the study; explains the nature of the study; includes definitions for terms used throughout the work, assumptions made regarding the nature of the study, and the participants; covers the scope and delimitations present in any research project; identifies possible types and sources of data; and ends with an explanation of the limitations, challenges, and/or barriers that may be encountered.

Background

The term *gifted* has been used in the context of education since the late 1800s and has gone through many incarnations as the education system has grown and developed in the United States. Originally, the term *giftedness* was defined solely based on IQ scores, with 140 being the delineator, wherein anyone with that score or higher was considered to be gifted (Dai, 2018). In contrast, modern definitions tend to eliminate the reliance on IQ tests and lean more towards determining each student's area of strength in academics (National Association of Gifted Children, 2020). As the United States' education programs have developed and evolved, so have the definitions and implementation of gifted education. One of the strongest driving factors of gifted education has been the necessity to ensure some form of modification to the curricula to meet the needs of these

gifted learners (Dai, 2018). Gifted students require a challenging curricula to help unleash their full potential and achieving this involves the implementation of several strategies (Little, 2018).

In a review of gifted education practices, Dai (2019) argued that current trends in gifted education do not reflect the needs of 21st century learners, with most present-day practices being based on methodologies implemented during the 20th century, failing to reflect current technological changes in the classroom. Dai pointed out that current teaching methods in the context of gifted education are based on research from almost 100 years ago. These methods have not substantially changed since their inception, which points to the fact that many states still rely on IQ or other forms of standardized testing to identify gifted students.

Dai (2017) also highlighted the necessity for a new gifted education theory to better reflect the differentiations' evolving complexity, combining certain traditional and reductionist approaches. The evolving complexity theory (ECT) is person-centered, which means that the focus is on how a gifted student learns, grows, and develops their giftedness. For example, a student gifted in music will be influenced not merely by the music they create but also by the music they listen to and the music theory to which they are exposed. The emphasis is on the fact that gifted students are constantly changing and evolving, and, therefore, the strategies used to ensure that they are appropriately challenged must also have the same fluidity. This theory is relevant to this study because online education is becoming increasingly popular and allows for greater flexibility in

modifying each student's curricula rather than making changes to the entire classroom content.

Mofield (2020) pointed out that the typical classroom teacher does not have the specialized training that is required to enable them to meet gifted students' needs and that many school districts across the United States have compensated for this shortcoming by having a gifted education teacher collaborate with a general education teacher to help provide the depth of content and challenge that gifted students require. However, Mofield indicated that these efforts at collaboration show limited success in assisting gifted students to achieve their potential, which would support the fact that, in the online learning environment, a trained gifted education teacher would be able to directly modify the curricula in a learning management system (LMS) in order to meet the needs of online gifted students, whereas a regular classroom teacher with no training in student giftedness might not be able to modify the curricula appropriately. For example, it is not uncommon for math teachers of gifted students, who have had no training in gifted education, to simply reduce the number of practice equations for gifted students instead of providing the students with a completely different, more challenging set of problems. Providing teachers with the training necessary to meet gifted learners' needs will increase the number of experts available to ensure that such students are appropriately challenged using accepted strategies for differentiation.

Shearer (2020) looked at multiple intelligence (MI) assessments from numerous cultures and presented a systematic review of neuroscience evidence from investigations of the localization of neural and cognitive functions from 318 reports that indicate that

there are distinct brain functions in gifted individuals for each of the eight MIs, with the highest functions shown in creativity and esthetics. Shearer suggested that using neuroscience findings to differentiate education for gifted students can clarify how MI can best meet the needs of all high-ability learners. Gifted students need instructions tailored to each learner, a key feature of online education, because LMS can be programmed or modified for individual students. Abu et al. (2017) posited that teachers require training on how to differentiate the curricula for gifted students. Without appropriate training in differentiation strategies, classroom teachers do not possess (NAGC, 2020; Tomlinson & Moon, 2013) and do not have the tools and necessary information to ensure that they are not compromising the education of gifted students.

Russell (2018) engaged in a qualitative study to better understand how high school teachers view giftedness and gifted education. Often, contradictory curricula models are implemented at the high-school level due to vague policies and research-to-practice gaps. One of the themes discovered during the coding and interviewing process in Russell's study was teachers' concern over the fact that gifted students were becoming bored and not engaging with their assignments because they were not adequately challenged. Teachers require tools specific to the gifted population to differentiate the material.

Johnsen and Kaul (2019) studied how teachers felt about implementing research-based practices with their gifted students and found that they reported positive results when utilizing these practices. However, teachers often failed to implement differentiation strategies due to various barriers, including training. Russell's (2018)

study indicated that more than 90% of the teachers who participated in the qualitative study agreed that gifted students need differentiation of the curricula, taking multiple forms such as curricula compacting, providing alternate assignments/content, and allowing for more options for projects and long-term assignments. However, tailoring instructions to meet an individual student's strengths and needs often requires additional training, and the teacher may not have the knowledge and skills to develop such a lesson. Russell's study further supports my own, to qualitatively provide the best strategies for personalizing gifted education as established by experts who have received specific training in gifted education and understand how to appropriately differentiate the curricula.

While the literature has emphasized the importance of providing curricula that is different from that provided to the nongifted learner, there is little to no attention paid to how curricula should be differentiated for the online gifted learner. This study began to address this gap.

Problem Statement

The options for obtaining a quality education are expanding all around the world, with many students opting out of the traditional classroom that forces them to spend "x" amount of time in a class regardless of whether the student needs more or less time for a subject (Assouline et al., 2015). For example, many students gifted in mathematics will often grasp difficult concepts much more quickly than their peers. They will then find solving multiple practice problems tedious and pointless (Assouline et al., 2015; Tomlinson & NAGC, 2004). Allowing these gifted learners to demonstrate their

comprehension with fewer practice problems and then providing them with the opportunity to move ahead often results in them accelerating through a math program much faster and with more retention than their age peers (Tomlinson & NAGC, 2004).

Forcing gifted English learners to read beginner-level books when they are reading much more advanced texts (and are likely to have been doing so for quite some time) results in feelings of frustration or even disconnect with the subject and could even result in underachievement of this population (Tomlinson & NAGC, 2004). Among this group are gifted students who are moving to the online venue because teachers in many settings do not have training on how to differentiate curricula for this group of students (Tomlinson & NAGC, 2004). In many cases, the absence of differentiation stems from a lack of training provided to the typical classroom teacher in meeting gifted learners' needs.

While gifted education has received some attention in the United States, the rest of the world is just beginning to recognize the need to accommodate these learners. Most education programs are geared towards an egalitarian model where all students are presented with identical curricula. There has also been an acknowledgement of the necessity to utilize teachers who are experts in the field of gifted education to appropriately differentiate the curricula (Rasmussen & Lingard, 2018). Gifted education did not receive much attention in other countries until the past 2 decades. Most European countries did not officially have any plans for gifted education until the Council of Europe was formed in 1994 (Tourón & Freeman, 2018). Denmark only recognized and implemented gifted education policies in 2011 (Rasmussen & Lingard, 2018). The

National Association of Gifted Children (2014) posited the belief that all schools should provide gifted students with a program that meets their needs along a continuum.

There are many laws in the United States that address the need to undertake curricula modification for most special education students, such as the 1975 Education for all Handicapped Children, also known as PL 94-142, which was a federal mandate directing all states to provide all students with disabilities access to public education as well as specific services to meet their needs (Bateman & Cline, 2016). However, currently, there is only one law in place, the Javits Act, passed in 1988, to support special education for the gifted population (NAGC, n.d.). The real purpose of the Javits Act is to fund gifted education in the United States, but it does not provide any provisions to require school districts to provide services to this population.

Gifted education has also been neglected in many international countries. For example, in Malta, there is currently no requirement for differentiating the curricula to meet gifted learners' needs (Marks, 2001). There is a similar situation in Kenya, where there is no government policy regarding gifted students' education (Wairire et al., 2015). Australia is relatively advanced in gifted education and has a specific policy to accelerate gifted learners' education so that they can enter college earlier than the average student through their Select Entry Accelerated Learning program (Jung et al., 2015). New Zealand has taken a more egalitarian approach to gifted education in many ways and tends to favor enrichment strategies as they blend in much more smoothly with traditional practices in the average classroom (Shibata & Forbes, 2009). Turkey's Ministry of Education does have some degree of policy regarding gifted learners, officially known as

highly talented students. However, there is no special arrangement for these students' education (Shaughnessy & Sak, 2015).

In the online learning environment, differentiation occurs when a course instructor makes a conscientious and deliberate effort to create curricular content that fits the learner's needs, goals, interests, and talents (Tomlinson & NAGC, 2004). Differentiation should be made in terms of content, process, and product (Chandra Handa, 2019). It may also include the learning environment that supports the provision of these services to the gifted students working in the online environment. The emergence of online learning has made it possible to provide content to a broader learning community. Still, teachers have not been provided with the tools and strategies to accomplish this task for the online gifted student population (Abu et al., 2017). Teachers of gifted students need more than just content knowledge to meet the needs of their learners. They need to be experts in gifted education (Khalikova & Khalikov, 2020).

Dai (2019) proposed that it is now time to change the underlying framework of how teachers of gifted students are prepared to better suit the needs of the 21st century learner. There needs to be more emphasis on the flexibility of the curricula to accommodate changes in the learner's needs. For example, as a gifted student masters the various stages of mathematical problems, they may need practice with those same kinds of calculations. The problem addressed in this study is that there are no strategies provided for teachers of online gifted students to appropriately modify the curricula to ensure they are sufficiently challenged. This is due to a lack of research on teachers' strategies to differentiate online curricula for gifted students. Teachers of gifted learners

in the traditional setting have been provided with a wealth of strategies for differentiating the curricula; however, this has not been duplicated in the online learning environment, which means that gifted students have not been provided with curricula that challenges them.

Purpose

This study was designed to investigate strategies recommended by a panel of experts in the field of gifted and online education for differentiating the curricula for online gifted students. While considerable attention has been directed to providing various strategies for challenging and engaging gifted learners in the traditional setting, little to no information is available to address the issues of the online gifted population. It is important to ensure that online teachers possess the proper tools and training facilities to meet the needs of this group of learners, which have not been fulfilled in most situations. Hence, this study provides online teachers with recommended strategies for differentiating online curricula for online gifted students. The approach was a Delphi study. The data and analysis were primarily qualitative to address the gap in the literature regarding differentiating the curricula for online gifted students.

Research Question

In this study, I investigated the strategies recommended by a panel of experts in the field of gifted and online education for differentiating the curricula for online gifted students and I sought to answer the following question: What, according to a panel of online and gifted education experts, are the best perceived strategies for teachers of online gifted students to use in differentiating the curricula for online gifted students?

Theoretical Framework

The theoretical framework provided the foundation for this study was Ward's (1986) theory of differential education for the gifted and Tomlinson's differentiated instruction (DI) model. The basis of Ward's theory is that gifted students learn differently than their nongifted peers. Gifted students often learn faster and more accurately, sometimes making great leaps in this process (Ward, 1986). Therefore, teachers must make modify curricula to meet the needs of the gifted learner (Ward, 1986). Tomlinson (2014) also noted that there are always students in any classroom who remain unidentified as an advanced learner, and an egalitarian method of teaching does not work for most students in any single classroom. These adaptations include flexibility within the program, high expectations, planning based on each gifted learner's individual needs, and social adjustments. Tomlinson's (2014) DI model adds to this with five elements that must be considered while differentiating the curricula: the general classroom environment, curricula, assessment, instruction, and management. These approaches have been applied to gifted students in the traditional education setting, yet they have not been implemented in many online gifted education platforms, despite the growing influence and acceptability of this learning environment. Instead, most online programs do not differentiate between the curricula provided for average students and the curricula provided for gifted students. Both groups of learners (regular and gifted), in almost every online program, complete the same courses. However, the NAGC (2019) has indicated that presenting gifted students with the same curricula as their peers does not provide

them with the depth of content and challenge required to help them reach their full potential.

The curricula must be differentiated to keep gifted learners engaged and appropriately challenged. Ward's (1986) theory of differentiation and Tomlinson's (2014) DI model illustrate the increasing need for teachers to provide the tools necessary for personalizing the curricula for gifted students. The pillars of this theory are that the curricula are modified and unique from what is taught in the traditional setting (Tomlinson, 2014). This is because gifted learners are typically able to learn more content, more rapidly than other students, and, therefore, teachers and institutions of higher learning should have policies and procedures in place to help accommodate this particular group of students (Tomlinson, 2007; Tomlinson & Moon, 2013; Ward, 1986). Gathering strategies from recognized experts in both online and gifted education can provide teachers with the tools to personalize the education for gifted students in the online context.

Nature of the Study

This was a Delphi study in which experts in the field of gifted and online education were consulted through a series of three Delphi instruments to gather and collate the suggested strategies for implementation with online gifted students to help ensure that this population attains their full potential. Qualtrics was used for the creation of the instrument used in all rounds. I recorded and consolidated the results for each iteration until the experts' panel reached consensus on the strategies that should be implemented to serve the online gifted population (see Avella, 2016).

Definitions

Differentiation: Differentiation is making something—the curricula, in the context of this study—different from what is provided to nongifted students (Tomlinson & NAGC, 2004; Ward, 1986):

Gifted student/learner: The NAGC (2019) defined gifted students as those students who are able or have the potential to perform at higher levels compared to other students of their same age, experience, and environment in one or more areas of the accepted curricula and talent:

Giftedness: Implies having or possessing the characteristics of a gifted learner, as noted above (NAGC, 2019):

Learning management system (LMS): Any software application that is used to provide e-learning materials, assignments, assessments, and so on and to track student progress, including grades (Lozovoy & Zashchitina, 2019):

Online education/learning environment: An online course is one in which at least 80% of the content is delivered online through the internet and with the use of some form of LMS (Allen et al., 2016).

Assumptions

In any study, a set of assumptions is naturally made at the start of the work. As this work used the Delphi method, which uses a panel of experts who respond to Delphi instruments, one of the primary assumptions was that the panelists were experts in the field of gifted education and/or had a degree of experience working with gifted students in the online setting. To ensure this is the case, the criteria to determine who constituted

an expert in the field of gifted education was established. Panelists were first invited to participate in the study. They then responded to a series of questions to determine their eligibility based on those criteria.

Because the panelists responded to various statements, another assumption was that they provided their honest opinions based on their professional training. To help ensure that the panelists felt comfortable providing their opinions, steps were taken to ensure their anonymity. The Delphi instruments were hosted in Qualtrics. This platform offers privacy settings, so the panelists cannot see other's responses. Secure links were made available only to those panelists participating in the study.

It was assumed that the panelists were interested in the study outcomes because they responded to the initial queries and expressed their own willingness to participate, as well as their own innate desire to help improve the current state of education for online gifted students. Panelists were asked to provide timely responses, and deadlines were set with a 1-week turnaround to provide the participants ample time to record their responses. The list of strategies was designed to help ensure that thorough explanations were provided.

The final assumption was that the panelists were committed to participate in the study until it reached its natural conclusion and a consensus had been achieved.

Scope and Delimitations

This was a Delphi study. This type of study requires the attainment of a consensus among a group of selected participants who are considered experts in a particular field (Shelton & Creghan, 2016). For this study, the panelists were experts in the field of gifted

and/or online education. Panelists also had to have some degree of experience working with online students. A panel of 35 experts was put together to rank the strategies indicated by the literature review. The panelists received an email to solicit their assistance and determine their interests and qualifications. The selected expert panelists received a series of three Delphi instruments, each incorporating suggestions for new statements in each round based on the expertise of the participants on the strategies that should be implemented to personalize online gifted students' learning.

In the Delphi method, the first-round instrument was created using Qualtrics. Once established, the statements did not change with each round. Instead, with each successive round, the experts were able to refine or clarify statements, which were reflected in the next round. The panelists were given a 1-week period to respond to the instrument before the results were compiled, at which time the next Delphi instrument was created and sent to the panelists. The emphasis was on providing online gifted teachers with strategies that they can implement with their online gifted students to ensure flexibility and differentiation in their curricula, commensurate with Dai's (2017) ECT, positing that the needs of gifted students are continually evolving.

As most Delphi studies tend to go through approximately three rounds, the panelists were asked to commit to the study for up to 2 months. This timeline was determined based on a Delphi study typically lasting for three to four rounds (see Shelton & Creghan, 2015). Providing tight due dates to return the responses to the initial questionnaire and allowing for rapid compilation on the part of the researcher, an approximate data collection timeline of about 2 months was determined to be feasible.

This study contributes to the gap in the literature that targets online teachers' needs, educating the growing population of online gifted students to keep them challenged. The data collected target what teachers feel can help them address the needs online gifted students.

Possible Types and Sources of Data

More than 100 educators in the field of online gifted education from across the United States were contacted to determine their willingness to participate in this study. A total of 35 of this group agreed to complete the study. A panel of 10 is considered the minimum standard for a Delphi study (Avella, 2016), with 10 to 100 members constituting a typical panel. I sought to comprise of a minimum of 30 panelists, which was exceeded by five. An initial roster of over 100 experts, more than triple the desired number of desired participants, was contacted for the study due to the understanding that some of the contacted people would not want to, nor be able to, participate in the study, and/or panelists would drop out as the study continued. As I attempted to recruit from many organizations, there could have been teachers interested in participating in the study who did not meet all the criteria. Those teachers were not invited to participate past the screening questionnaire (see Appendix A). It is important to note that I made no attempts to accrue panelists who were representative of educators in general and instead focused on gathering experts in the specific field of online gifted education (see Avella, 2016). The panel size could have decreased as the study proceeded due to participant degradation, which is a factor to consider in a Delphi study. Initial contact was made via email or telephone calls, according to the participant's individual preference. Panelists

communicated directly with me and panelists' anonymity was maintained throughout the study.

The selected panelists were provided with a series of Delphi instruments to assess their position(s) on strategies that could be used for personalizing the curricula of online gifted students to ensure that their educational needs are met. These strategies were presented to the participants in three rounds of the Delphi instrument. Panelists were allowed to add new statements that would appear in Rounds 2 and 3 for everyone to consider and rate on the level of importance to include those statement in the final results.

Limitations, Challenges, and/or Barriers

One of the potential limitations of this study is that there are no widely accepted experts in the field of online gifted education. There are experts in the fields of gifted education and of online education but not in the specific combination used in this study. All efforts were made to ensure that each panelist had at least 5 years of experience in online education experience and gifted education, if not the combination of the two. Panelists completed a questionnaire (Appendix B) providing background information that included years of teaching experience working with online gifted students. This alleviated concerns of expertise because all the panelists would were experts in either gifted education or online education and only they viewed the collated results of each round of questionnaires.

Another barrier was the willingness of the potential participants who were contacted to for this study to participate throughout the entirety of the process. Many of the people who met the criteria to be considered an expert in online education and/or

gifted education actively work as educators with families and have other commitments, which may have impacted their willingness/ability to participate in any study.

One more limitation to consider was getting the panelists to promptly return the surveys. While having deadlines are beneficial, there were factors that impeded this part of the research. For example, the study coincided with four panelists' Spring Break which meant these teachers were not closely monitoring their school emails so additional time had to be added to Round 1 to enable all participants to have an opportunity to participate which extended the timeline for Round 1 by three days.

Significance

This study provides teachers of online gifted students with a number of strategies recommended by a panel of experts to use for differentiating the curriculum for this special population. Having a range of strategies to implement can help gifted learners reach their potential and explore their interests. Because no one strategy of differentiating curricula will work for all students, teachers need to have multiple strategies they can implement for this purpose.

Summary

In this chapter, the purpose of this study was established, which was to provide online teachers with strategies suggested by a panel of experts for differentiating the curriculum for online gifted learners. The problem was that there is little to no previous information that addresses the best strategies for differentiating curriculum for online gifted students. The Delphi study was briefly explained as the best means for conducting this study and definitions were provided to ensure there was clarity of meaning. I also

identified where information came from and addressed the possible barriers that may be encountered during the research process. The next chapter explores the literature present on differentiation and online learning.

Chapter 2: Literature Review

Introduction

Gifted students must have a curriculum that is different from the typical one used in an average classroom (Dai, 2018). The gifted student population requires more rigorous, in-depth curricula than the typical student population in order to meet their particular needs. However, the answer to how to change the curricula and how to provide that depth and rigor has changed multiple times since the mid-to-late 1800s. The present qualitative Delphi study provides online gifted students and online teachers with strategies that can be implemented to help this group reach their potential and keep them engaged and challenged through the curricula presented.

Students are not limited to having to spend 8 or more hours a day in a classroom setting, where a bell or signal prompts them to move from subject to subject or from room to room. Many students are turning to alternative forms of education, such as the online learning environment. An online course is considered one in which at least 80% of the content is delivered through some online platform, typically referred to as a LMS (Allen et al., 2016). According to the National Center for Education Statistics (2021), 21% of public schools and 13% of private schools offered online courses during the 2017–2018 school year. Students are moving to this venue for a variety of reasons, such as access to courses that are not available in their current setting, social-emotional concerns such as bullying and insecurity, health issues that often result in extended absences, the ability to accelerate their education, a preference for a flexible schedule and learning setting, and a desire to be able to explore other areas of interest/passion,

including sports, talents (i.e., singing, dancing, acting), entrepreneurship, and so on (Lozovoy & Zashchitina, 2019). Gifted students may consider online learning, as it can provide them with access to courses that they cannot take in their school district, such as Advanced Placement courses, which are not always available in all districts. A student who may have a gift in a particular area and be the only student in that district with that particular gift means a school is unlikely to hire a teacher for an advanced subject for one student. Such a learning environment and all its possibilities hold great interest for gifted educators (Potts, 2019).

Gifted learners frequently turn to the online learning platform as a means of finding a more challenging curriculum than the one that is offered in their local school. They may also be motivated by a desire for acceleration or the advanced offerings of a particular subject. The student may want the flexibility to work around their own schedule (Sanderson & Greenberger, 2011). Because this is a relatively new frontier for education, much attention has not been directed to research on the manner in which a diverse population's online course needs can be best addressed. In most programs such as Florida Virtual and K12 Connections Academy, courses are built into a LMS that students can access from their computers or devices at any point during the day at their convenience. In this model, there are few, if any, provisions made for students with any kind of learning issues, such as English language learners, students with any degree or type of learning disability, and gifted students. More attention and training must be provided for teachers of special populations working in the online forum to guarantee that students are being provided with a quality education.

This chapter takes a brief look at the history of gifted education and provides current definitions of giftedness. It also addresses the most widely used methods for modifying the traditional curricula to meet the needs of gifted students pulling from the theory of differential learning (see Ward, 1986) and Tomlinson's (2014) differential instruction model. The study subsequently explores the newer learning environment provided by the internet and the growing popularity of online education in terms of how this platform has not yet found the means to appropriately modify the curricula provided to challenge gifted learners. By looking at the literature available on gifted education in the traditional classroom, I illustrate that there are limited services for the online gifted learners, and I sought to fill this gap by consulting a panel of experts in the field of gifted and online education.

Literature Search Strategy

I heavily utilized the Walden University library and databases, which connected me to EBSCO, ERIC, Taylor & Francis, and Sage Publications. Primary key terms were *gifted education, online education, online gifted education, gifted education strategies, gifted education theory, theory of gifted education, differentiation, differentiated education, differentiated instruction, differentiated instruction model,* and any combination of the words *gifted, education, strategies, online education, online learning, gifted instruction* among others. When possible, the range of years selected was 2015 to 2020. When no results were achieved, the dates were extended backward in 5-year increments.

Theoretical Framework

This study drew on the theory of differential education for the gifted (Ward, 1986) and the DI model (Tomlinson & Moon 2013). Initially, Ward began his work on differential education in 1952, in his graduate thesis at the University of North Carolina (Ward, 1986, p. x). This seminal work has since been expounded upon and provides the basis of many other gifted education models, such as Renzulli's three-ringed conception of giftedness (Renzulli & Reis, 2018), VanTassel-Baska's curricula model (VanTassel-Baska, 2004), Tomlinson's DI model, and many others. The common underlying thread for all gifted education models is that the curriculum for gifted learners needs to be different (i.e., differentiated) from the "regular" curricula meant for nongifted learners (NAGC, 2018). Differentiated curricula forms the basis for many other models of gifted education. For example, VanTassel-Baska's (1995) integrated curricula model provides instruction for differentiating the curricula to use advanced literary selections, student-led inquiry, and a variety of scaffolds for other elements. Tomlinson and Allan (2000), regarded as the leading researchers in DI today, indicated that DI embodies a range of other strategies such as constructivism and learning styles and is impacted by readiness, interest, and preferences. Tomlinson stated that differentiation is not a means of segregating students and should be viewed as a method for ensuring that the needs of each individual student are met within the classroom setting (as cited in Wu, 2013).

In this study, I investigated strategies recommended by a panel of gifted and online education experts for differentiating the curricula for online gifted students. There

are no strategies to target the online gifted learning population; therefore, this was a significant and important gap to fill.

Literature Review

Definitions of Giftedness

Throughout the 100+ year history of gifted education, there have been various attempts to create a single, cohesive definition of giftedness with little success. The earliest identification method for giftedness relied on IQ testing, with scores of 140 and higher, forming the basis for students being labeled as gifted (Callahan, 2009). The definition of giftedness is continually evolving as education and the knowledge base changes (Ford, 2012). In fact, since 1970, the United States Department of Health, Education and Welfare, and later the United States Department of Education, have gone through six iterations of the definition of giftedness.

One of the first definitions stemmed from the 1972 Marland Report that stated that gifted students are:

Children and youth with outstanding talent who perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment. These children and youth exhibit high performance capability in intellectual, creative, or artistic areas, possess an unusual leadership capacity, or excel in specific academic fields. They require services or activities not ordinarily provided by the schools. Outstanding talents are present in children and youth from all cultural groups, across all economic strata, and in all areas of human endeavor. (as cited in Ross et al., 1994).

The most recent federal definition for gifted education was written in 2001: The terms “gifted” and “talented,” when used to refer to students, children, or youth, mean students, children, or youth who give evidence of capability for high achievement in areas such as intellectual, creative, artistic, or leadership capacity or in specific academic fields and who need services or activities that are not ordinarily provided by the school to fully develop those capabilities (as per definition in the No Child Left Behind Act, 2002).

The NAGC provided the most recent definition for giftedness in 2019: Students with gifts and talents who perform—or have the capability to perform—at higher levels than others of the same age, experience, and environment, in one or more domains. They require modification(s) to their educational experience(s) to learn and realize their potential. Students with gifts and talents

- come from all racial, ethnic, and cultural populations as well as all economic strata
- require sufficient access to appropriate learning opportunities to realize their potential
- can have learning and processing disorders that require specialized intervention and accommodation
- need support and guidance to develop socially and emotionally as well as in their areas of talent
- require varied services based on their changing needs (NAGC, 2019)

State definitions of giftedness most frequently include factors such as academic giftedness, performing/visual arts, giftedness in creativity, or specific academic areas of

giftedness (NAGC, 2015). Very few states include specific populations of gifted students such as low socioeconomic status, English as a second language/English language learners (ESL/ELL), disabled gifted students, geographically isolated students, or culturally/ethnically diverse students (NAGC, 2015).

One glaring similarity between the state and federal definitions of giftedness is the continued mandate to implement different educational programs to help gifted students reach their full potential. In this study, I used the definition of giftedness provided by the NAGC, as it was the most recent one and has a specific focus on differentiated education. This definition became the impetus for this study's primary focus, which is to help online teachers provide differentiated education to meet the needs of the increasing online gifted population.

An Historical Overview of Gifted Education in the United States

Gifted education has waxed and waned during its 100+-year history in the United States. Some attention was directed to gifted students in the mid-to-late 19th century in the form of accelerated learning, when advanced students were allowed to move up in school every 5 weeks if they finished their work early (Ford, 2012). It was not until the early 19th century that the true beginnings of an officially recognized subset of students who were labeled gifted were seen in U.S. education. At the outset, gifted education was always determined using some form of a standardized test. In 1904, Alfred Binet was been tasked by the French Ministry of Education with developing a test to identify students who would need additional support in an educational setting (Shore & Gube, 2018). This test was eventually adopted by the U.S. Army during World War I to identify

service members who might have made good officers (Shore & Gube, 2018; Warne, 2019). Although the Stanford-Binet IQ test ultimately wound up being used to exclude various minority populations, the original intent was to use it to identify people who were being overlooked by teachers in those exact groupings (Ford, 2012; Warne, 2019). However, this type of test does not reward creative thinking in any capacity and is based on an individual's ability to answer as many questions correctly as possible, in as short a timeframe as possible (Shore & Gube, 2018).

Attention to gifted education experienced a resurgence in the 1940s and 50s with the Space race, when the U.S. government actively recruited the brightest minds in the country to work on accelerating the nation's space program (Colangelo, 2018; Dai, 2018; Ford, 2012). When the Russians launched their rocket, Sputnik, gifted education became a primary goal to protect national security and help the nation get ahead of the Russians in terms of who controlled space, so their skills could be used to ensure that the United States stayed at par with Russia during the Space Race (Jolly, 2009). There was even a "Great Talent Hunt" in 1957 to track down students with exceptional intelligence to try to improve the abilities of the United States in science at the time (Jolly, 2009). To do this, the National Defense Education Act was created, which allocated counselors to work directly with gifted students to ensure that they were being provided with the education needed to keep Americans at the forefront of the Space Race (Miller, 2009). Ironically, differentiated education had already been mandated by the Soviet government in the 1920s, requiring schools to provide specific "tracks" of learning in the gymnasiums and

lyceums beginning at around 14 years of age for those individuals who were deemed to have superior intellect (Popkov, 1998).

Modern gifted identification has mostly moved away from relying on standardized test scores or at least is not using that as the sole means of identification anymore. It now allows for anecdotal evidence or some form of portfolio, which may be attributed to Hollingworth, who is often considered to be the nurturing Mother of Gifted Education (Jolly, 2009). Many schools now rely on a multitiered process of identifying gifted students, with the first step being a referral from a teacher—or even a parent—for a particular student or group of students to be assessed using whatever protocols are in place within that school or district (Eckert & Robins, 2017). The second phase consists of some form of screening, which may involve the use of IQ tests, portfolio, or other administrative measures to determine if the student(s) meet the state or district's definition of giftedness. The actual strategies used in this second stage vary widely from state to state, as there is no federal mandate or law governing this process or providing standardization for practices. After this point, students are either placed in the gifted program or classes or are denied services. The last two steps in this process are almost always conducted by a panel consisting of teachers, counselors, and administrators who have some training or professional development to identify and provide services for gifted learners (Eckert & Robins, 2017).

In the earliest days of gifted education, the emphasis was only on the student's ability in specific courses, with an emphasis on mathematics and science. Torrance (1968) introduced the concept of giftedness and creativity into the mix with the Torrance

Test of Creative Thinking, even though Torrance was not explicitly addressing the needs of the gifted learner in his works. In the 1970s, innovators such as Gardner (1983) introduced the concept of MIs that presented the idea of using cognitive neuroscience to identify multiple talents in learners. Again, though, Gardner was attempting to find ways to meet the needs of all students rather than specifically addressing the needs of gifted learners.

Since publishing his original theory on MIs, Gardner had written the book *Frames of Mind*, in which he outlined the "individualization of teaching and assessment, the need to articulate educational goals, and the advantages of multiple representations of key concepts" (Gardner, 2006). In this book, Gardner (2006) emphasized that education should be individualized, wherein teachers should learn about the interests and abilities of each student and, as much as possible, create an educational curricula based on those needs. This is very much in keeping with the concept of differentiated learning. Gardner also felt that there should be an assessment specialist who would work as a kind of liaison among the student, parents, and teachers to help provide some of the necessary information about what the student is most interested in and what skills they already possess. Building upon this concept that students are multidimensional learners, Renzulli and Reis (2018) proposed the three-ring concept of gifted education, in which a primary component is that being a gifted student does not always equate to being a good student in the classroom. Many gifted students do not want to be seen as different by their peers and may purposely score low on tests, fail to complete assignments, and take other measures to avoid appearing smarter than those around them (Gallagher, 1991; Ritchotte

et al., 2015). If there is a climate of antiintelligence or a system that views gifted students as being elite or superior, many gifted students will not perform well in a regular classroom setting to appear "just like everyone else." (Gallagher, 1991).

Gifted learners go through many periods of development just like any other child, so giftedness can neither be assessed in a single year, nor with a single method (Renzulli & Reis, 2018). Renzulli and Reis' model of gifted identification relies on assessing students' ability, creativity, and task commitment. Perhaps the single uniting factor in gifted education was the belief that gifted students needed curricular changes to meet their needs (Ford, 2012; Jolly, 2009). In most of the current gifted education models, such as Renzulli's Enrichment Triad Model, Betts and Kercher's Autonomous Learner Model, the Self-Directed Learning Model, Feldhusen and Kolloff's Three-Stage Model, and so on, the primary feature is that gifted learners must receive an education that is different from that of their same-age peers, where the curricula has been created to meet their specific needs and has been differentiated accordingly (Korucu & Alkan, 2012). While the methods of identification and definitions and other aspects of gifted learning have shifted and changed since the mid-1800s, the need to differentiate their education has remained steadfast.

The first time any changes to the curricula were made specifically for gifted students was in 1868 when William Harris, the superintendent of St. Louis public schools, instituted changes in the St. Louis schools (Ford, 2012). His program focused on allowing students to move through courses and be promoted to the next grade at a much faster rate, which is still a primary feature of many gifted programs (Miller, 2009).

However, it was not until the 1900s when widespread attempts to provide gifted education were implemented (Miller, 2009). Most of the methods for educating gifted students did tend to focus on providing relatively homogenous groups with opportunities for acceleration. Once Lewis Terman, often called the Father of Gifted Education, reconfigured the Stanford-Binet IQ test, gifted education became quite dependent on the use of this type of testing to qualify any student for a gifted program (Dai, 2018). The shift away from relying on standardized IQ testing began, in small ways, in 1954 as one aspect of the Brown v Board of Education of Topeka, Kansas—to guarantee the rights of gifted black students was to receive services (Ford, 2012; Stephens, 2018). The National Association for Gifted Children (NAGC), also formed in 1944, as the first advocacy group for gifted students. Their mission "is to support those who enhance growth and development of gifted and talented children through education, advocacy, community building and research" (NAGC, n.d.).

Vast improvements in terms of identifying students and providing them with educational opportunities were made in the 1970s, with an emphasis on devaluing the use of the IQ test as the only means for determining giftedness. This does not mean that IQ tests are not still used in many districts across the country. Many places use the IQ test in combination with other assessments as a means of determining a student's eligibility for gifted education services. In many cases, gifted education is treated in a very similar manner to a special education student, where the emphasis is on providing students with an exceptional curricula to meet their needs (Dai, 2018).

Much of the reasoning for moving away from standardized testing came from Torrance's creation of other assessments to determine creativity levels (Dai, 2018). The 1970s also saw some dramatic changes in how gifted students were treated in terms of the educational practices meant for teaching gifted students. The Marland Report provided one of the first official federal definitions of giftedness and advocated for assigning funding to gifted education programs (Jolly, 2009). It was during this period that many states began implementing gifted programs and provided for official state definitions. However, much of this advancement was lost when the Omnibus Budget Reconciliation Act (OBRA) was rescinded. This move cut federal funding by more than 40 % and eliminated the Office of the Gifted and Talented (Jolly, 2009).

The years between 1960 and the 1980s saw significant changes in the models developed for educating gifted students, which often focused more on how gifted students learn instead of what they learn (Shore & Gube, 2018). This shift in focus on how gifted students learn has led to many different models of gifted education. The common thread among these models continues to be an underlying need to provide gifted students with an educational program that is different from that of the typical classroom (Jolly, 2009).

The 1990s saw a slight increased interest in gifted education thanks to a report "National Excellence: A Case for Developing America's Talent." This report delineated the neglect of the gifted population in the American classroom. It recommended seven significant changes to the educational programs for gifted students, which included the following: setting a challenging curricula, creating high-level learning opportunities, and

providing training to teachers (Ross er al., 1994; Shore & Gube, 2018). It was partially due to this report that the Jacob K. Javits Gifted and Talented Students Education Act (1988) was created, which provided grants for research into gifted education models (Jolly, 2009). There were several factors that led to the passing of the No Child Left Behind Act (NCLB) in January 2002.

American standardized test scores were below those of other industrialized nations and even the scores of other Americans from 26 years prior to the research conducted for A Nation at Risk. This research had been funded by the National Commission on Education in 1983 to report on the policies and practices in gifted education (Ford, 2012). Many American adults were considered to be functionally illiterate. Scores on the Scholastic Aptitude Test (SAT) produced by the College Board had been in constant decline from 1963 to 1980, with verbal scores down by more than 50 points and mathematics scores down by almost 40 points; scores on science achievement tests had been declining since 1969, and students were scoring lower on achievement tests when they graduated from colleges. Many companies and military officials reported they had to spend millions of dollars to provide remedial education programs for employees and recruits for basic skills including reading, writing, spelling, and general math skills. (Hayes, 2008)

The NCLB required specific standards that would be addressed at each grade level, with every subject being taught with careful attention paid to exactly what the students should know and be able to do at each stage. Testing to ensure these skills were being mastered, along with mandates for improving teacher training, was also a primary

feature of the NCLB. Funding was provided under this act to establish tutoring programs for students who were not achieving appropriate scores on these tests and for providing summer school options for students who needed more help or even year-round help. Specific funds were also provided to help various at-risk groups, which included migrant workers, African Americans, Hawaiian and Alaskan natives, Native American students, and students with limited language proficiency. Unfortunately, the NCLB made no provisions at all for the gifted learner and, once again, reduced the amount of funding that would be available for gifted education.

More concerning is the vast difference among the states regarding gifted educational services. Only 17 states require some form of gifted programming for students, with nine states having no gifted education requirements at all (NAGC & CSDGP, 2015). To take this even further, 19 states require teachers of gifted students to have some form of certificate or endorsement in gifted education. Still, only one state, Nevada, provides training in gifted education to all teachers, with an additional five states who require general education to receive some form of professional development (Jolly & Robins, 2016). To date, no state requires any form of training for online education to include online gifted education.

Identification of Gifted Learners

At the earliest onset of formalizing gifted education, Lewis Terman took the Stanford-Binet IQ test, which had initially been designed to identify military members who might have made good officers but who would have been overlooked through "traditional" identification methods and used it to identify students with exceptional

learning abilities (Dai, 2018). Terman, who has been called the Father of Gifted Education, has also been seen as a white elitist since he felt “there is nothing about an individual as important as his IQ” (Terman, 1922, p.657). However, while his work has been widely criticized for relying too heavily on a single test score, Terman himself acknowledged that there may have been other means of identifying giftedness in other populations such as women and other minority groups (Warne, 2018). Since these earliest days of relying solely on the IQ test, most gifted programs throughout the United States have moved to depending less on this form of identification and often employ dual or multiple methods of testing to identify gifted learners (Dai, 2018).

Today, the onus of identifying gifted learners tends to fall on parents and teachers, many of whom are just not trained to recognize particular traits in gifted learners, especially in younger students (McGee & Hughes, 2011). As of 2015, only 16 states require teachers to receive specific training relating to gifted education in any capacity, with the remaining states only requiring the fulfilment of general education guidelines for identifying any student struggling with a form of learning issue, whether that be gifted or special needs (Kaul & Davis, 2018). Usually, the first step in the process of identifying any gifted student is an informal referral, which can be made by the parent or teacher(s) of any student. In 42 states, identification is reliant upon the state’s definition of giftedness (NAGC, 2020). Only eight states have criteria in place that must be followed in every single district throughout the state. In comparison, 19 states indicated that the identification of gifted learners is left to the local education authority.

Many other states do not have any legal requirements for identifying gifted learners, which means that there are no standard practices in place in these states. The remaining five states have some "other" form of identification requirements (NAGC, 2020). Among the last five states, Wisconsin requires multiple measures such as a combination of testing, portfolio, and teacher observation for students to be identified as a gifted learner (NAGC, 2020); however, these measures are not mandated by the state and are determined by individual districts. Only two states, Kentucky, and Ohio, have a specific instrument to be administered for identifying gifted learners. All other states now use some other method, which is usually a combination of the teacher's assessment of work, portfolio, anecdotal information, or standardized test scores to determine the eligibility in any gifted education program (NAGC, 2020). Currently, there is no standardized or universally accepted method of identifying gifted students employed in the US or elsewhere around the world.

Gifted Educational Policies

There is no set policy pertaining to gifted educational practices and requirements at the federal level beyond the Javits Act (VanTassel-Baska, 2018). The purpose of the Javits Act is to provide funding for research in a range of topics related to gifted education. The Congress must approve funding for this act every year (NAGC, 2020), which means that funding for gifted education faces a constant danger of being withdrawn. However, at the collegiate level, there are centers for gifted education that offer a variety of outreach programs, testing, and assessment services that are geared towards helping K-12 programs identify gifted students and allowing those students to

take courses through the university as a means of supplementing the standard education they receive in the regular classroom. These centers for talent development also provide internal funding for research on studies related to gifted education (VanTassel-Baska, 2018). In the most recent State of the States report published by the NAGC in 2015, there were 12 states that did not provide funding for gifted education programs in any capacity. There were 39 states that responded to the questionnaire sent out by the NAGC; 22 states spend less than one million on gifted education programs, with only two states providing more than $50 million at the most (NAGC, 2015).

It is worth mentioning that there are no federal mandates requiring states to identify gifted students. In contrast, there are multiple federal laws requiring students with learning disabilities to be identified and provided with services, and school districts that fail to do so are faced with severe consequences, primarily in the form of loss of federal funding. According to the same State of the States report by the NAGC, 40 states participated in the questionnaire addressing the identification of gifted students, out of which 32 states had some type of legal mandate for students to be identified, which does not necessarily equate to providing services beyond a free public education, non-discriminatory testing, and least restrictive environment. The report also noted that only 21 of the states require some degree of monitoring or auditing of any services provided such as approving gifted education plans for a district or a school (NAGC, 2015). Most states leave the actual particulars of the gifted program to the local education authority (NAGC, 2015).

In 2015, Every Student Succeeds Act (ESSA), which replaced the No Child Left Behind Act (NCLB), required state education agencies (SEA) to submit plans for student improvement programs and provided elements of teacher professional development: Title I program targeted at-risk populations, Title III programs were aimed at English language learners, Title IV programs sought to accomplish academic enrichment (i.e., serve the gifted population), and other components (Kaul & Davis, 2018). Every state, including the District of Columbia and Puerto Rico, submitted proposals to the US Department of Education wherein they provided comprehensive plans for each of the categories. These plans were then reviewed with 34 state plans marked "approved" and 18 state plans marked "revised," which means that they were asked to make specific changes or provide further information on various aspects of their plans (Kaul & Davis, 2018). Most of the state plans submitted provided information on meeting the needs of various subgroups (i.e., gifted students, special education students, ESL/ELL) without identifying those subgroups, with only 15 states specifically identifying gifted learners in their proposals (Kaul & Davis, 2018). Arizona, Massachusetts, and Tennessee did not address the needs of gifted learners in their state plans. While states were asked to provide Title IV plans, which typically include the gifted learning population, Stephens (2018) pointed out that there are discrepancies as well among various states' methods for identifications of gifted students. Some states require students to be identified at specific points in the year, and the process must be initiated by a parent or a teacher. Seven states do not allow for gifted eligibility to be transferred from another state, which means that a student may have to

wait until the testing period for identification and could be overlooked if no teacher or parent steps in to make that recommendation in the new state (Stephens, 2018).

Differential Education for the Gifted

As has been noted, from the earliest stages of educational recognition of any gifted program, one of the key tenets has been the overarching need to provide gifted students with a curriculum that is different from the one provided to average students (Dai, 2018; Jolly & Robins, 2016). While there is no single, widely accepted theory specific to gifted education, several models, such as Renzulli's Triad Model, developed in the mid-1970s, have been created, and these models place an emphasis on ensuring that gifted learners are given opportunities to explore new fields and solve problems, develop their creativity, and demonstrate their knowledge in a variety of ways beyond the classroom (Chancey & Butts, 2018). In the mid-1980s, VanTassel-Baska (2004) developed an integrated curricula model that laid out the means of differentiating instruction for gifted students, focusing on the content provided to the students, the product produced by the students, and the theme of the overall curricula. Again, with this model, the underlying emphasis is on the methods for differentiating the curricula (Swanson et al., 2020).

Virgil Ward (1986) produced the first work that officially showed what differentiated learning for gifted learners should look like in 1986, which became the basis for Gagne's Differentiated Model of Giftedness and Talent (DMGT). Technically, since all gifted education models place an emphasis on the fact that gifted learners require

a different education program from that provided to everyone else, all gifted education models are based on the theory of differential learning.

This study uses Ward's (1986) differential education theory and Tomlinson's (2014) DI model as the theoretical framework for determining the best strategies for implementing with online gifted students, since it is exactly the concept of differentiating the curricula—or providing a curriculum that is different from that provided to non-gifted students—that forms the basis for almost all gifted education models. Ward began his research in the 1950s at the University of North Carolina (Ward, 1986, p. x). In some ways, it is hard to translate much of Ward's work into the modern sense of giftedness, as he operated during a time when gifted education was quite elitist. He frequently referenced the "superior student" who was almost always white and most frequently male in his text. However, as noted several times, the emphasis was on the necessity to make the educational experience different for those students identified as gifted in our population. While Ward laid the foundation for differentiation, there is no indication that he implemented any of his ideas, which is why this study also references Tomlinson's (2014) work on DI, which has been utilized in many classrooms with varying degrees of success, depending on the amount of training teachers have received (Adams & Pierce, 2009).

Ward's theory of differentiation began with an explanation of the simple fact that society is in a constant state of flux. At the time he was writing, he listed some of the primary changes around the world that included increase in population size, changes in stability among various populations, growth of the older demographic, increase in the

number of cities and people moving to live in those cities, changes in world governments, the ability to travel to outer space, the development of satellites and the resulting issue of space control, changes in the workplace, such as the increased presence of women in the workplace, decreased hours, increases/decreases in wage, and of course, fluctuations in money's worth and its purchasing power (Ward, 1986, pp. 49–51). These changes, not just in American society but at a global level, emphasized the fact that, up to that point in time, little to no significant changes had been made in theories of gifted education (Dai, 2019). Ward went on further to say that the American education system had become too narrowly focused on providing facts and information to students in a finite period of time and had taught students to consider education as something that only occurs for a specific duration of time—grades K-12 and, possibly, into college—whereas education should be about teaching gifted students that learning is a lifetime process that never truly ends (Ward, 1986, pp. 57–64). This view is reflected in the more modern consideration of the growth mindset in which Dweck (2009) asserts that students must learn to embrace the concept of the brain as something more like a muscle that can be worked out, improved, challenged, and made stronger—that is, smarter. In this manner, teaching gifted students implies helping them understand that, while a formal education may have a specific beginning and end point, they should and will continue learning throughout their lifetimes, as reflected by Ward (1986), "The heart of the educational enterprise, though not the whole, is the intellectualization of experience, the ideational elaboration by the individual of man's cumulative insights into nature, such that continuing perceptions occur within an increasingly comprehensive and meaningful context" (p. 64).

Thus, Ward reminded educators to look beyond the boundaries of the classroom and help students foster a desire for and develop an understanding of the need for learning as a lifelong goal. In addition to inculcating a sense of lifelong learning as a tenet of his theory of differential education, Ward also held the belief that gifted students need an educational experience that is unique to their specific needs, which are going to vary from one gifted student to another and differ from that of their non-gifted peers (Ward, 1986, p. 87). This is a point in Ward's writing where it is difficult to adopt a modern sensibility that favors equal access to education, as Ward continually points out that students of slower intellect will struggle with the concepts that need to be presented to the student of superior intellect. However, the primary point remains the gifted learners need curricula that is differentiated from that of the general education provided to students of all abilities. With differential education theory, the gifted learner would be exposed to advanced curricula from their peers, be allowed to explore areas of interest that might not typically be covered in the regular education setting and be presented with knowledge that may not typically be available to various ages and stages of the educational process (Ward, 1986, p.89), all of which are in keeping with most modern models of gifted education.

Ward laid out the primary proponents of his theory of differential education of the gifted as follows:

- Administrative modifications for an educational program should not be the primary educational change implemented.
- The learner should be the central focus of all differentiation.

- Differences among gifted learners should be acknowledged and accounted for through flexibility in the program and evaluation procedures.
- Gifted learners should be provided with materials and experiences that go beyond the mere practical knowledge presented to all students and should not be based on what is typically covered for a certain age or grade level.
- Gifted learners should be provided with educational experiences to promote social awareness, civic mindedness, and personal awareness.
- The subjects of humanities, social sciences, natural sciences, and mathematics should form the core foundation for gifted education.
- Gifted education should be comprehensive and functional in providing learning–teaching experiences (Ward, 1986, pp. 90–107).

All these elements are reflected in many of the models of gifted education that are currently in practice throughout the United States. Renzulli and Reis (2018) proposed the three-ring concepted of giftedness, which focused on students having an above average ability, concentrating intensely on tasks, and having a high degree of creativity. While the emphasis of the three-ring conception is on the identification of gifted learners, its purpose is to then have those learners fall into the three categories that participate in the schoolwide enrichment program (SEM), under which curricula is differentiated pretty much along the lines proposed by Ward's differentiation theory. A profile is created for each student based on their interests and strengths. Then, a program is put together to help students explore these areas. Furthermore, Renzulli and Reis (2018) implemented

the enrichment triad model in which gifted learners go through three types of enrichment to help differentiate their education.

The differentiated model of giftedness and talent developed by Gagné (2009) sought to provide definitions of giftedness and talent and separate them as two categories under the umbrella of gifted education. The emphasis was more on defining the traits of gifted students versus the traits of talented students and exploring what role their environment and circumstances may have played in the emergence of these abilities. However, again, the emphasis of the model is on the need to provide these learners with an educational program that is distinct from that received by non-identified students (Gagné, 2009). Tomlinson (2014) took the concept of differentiated curricula and expanded and refined it for more practical use and implementation in the traditional classroom. In her DI model, the classroom would look very different from the typical, often quiet setting, with students, positioned in rows, working on the same assignment (Adams & Pierce, 2009; Tomlinson, 2014). In the DI model, the teacher constantly assesses students' abilities and interests and provides them with DI. In this classroom, groups of students may work on the same assignments, while other student work on different projects. There may be shuffling between groups as students finish a task or an assignment and move to the next or when students become more interested in another area or have demonstrated mastery of a particular topic. Noise levels are likely to be higher, and there would be considerably more movement, which means different methods of classroom management must also be implemented (Adams & Pierce, 2009; Tomlinson, 2014).

Ward (1986) adds that teachers of gifted students need to be trained in how to provide adequate learning experiences for these students. In fact, he felt "that teachers of intellectually superior children and youth should be among those of the greatest general excellence to be found in the profession" (p. 109). This indicates that teachers of gifted learners require specific training and education to help this special population achieve their potential. Issues related to the training of gifted education are covered in a later section in this chapter. Teacher training is also a primary component of Tomlinson's (2014) DI model, as this model is very student-centered and bases itself on the abilities, needs, and interests of the student rather than being driven by the teacher. The DI model requires further training on differentiated methods, as some teachers might feel that simply providing gifted students with a different, more advanced vocabulary list would be sufficient differentiation in the traditional classroom. This, however, is not true; it would be considered more of a micro-differentiation and would not meet the needs of a gifted student for an entire curricula (Adams & Pierce, 2009; Tomlinson, 2014).

One of the most significant issues with differentiated education, as noted by Smale-Jacobse et al. (2019), is that teachers often do neither know how to differentiate the lessons, nor receive instruction on exactly what DI may entail. The first step is creating the lesson plan itself. During the actual implementation of the lesson, the teacher should continually assess the students' learning and modify the lesson accordingly. The teacher may find it advantageous to put students into similar ability groups to provide gifted students with advanced material to work with. Alternatively, the teacher may use a more heterogeneous method so that the advanced students are working with and helping

the other students. Teachers can directly provide individuals with differentiated lessons. After the lesson has been implemented, the teacher should reflect on potential issues with whichever method was implemented (i.e., homogeneous, heterogeneous, or individual grouping) and make modifications to future lesson plans (Smale-Jacosbsen et al., 2019).

Tomlinson et al. (2003) noted that it was not uncommon for teachers to present gifted students with tasks that were too difficult or even provide them with information that repeated prior learning due to a lack of understanding, which resulted in students becoming disengaged from the learning. Typically, differentiated learning tends to focus on modifying the products or the classroom environments for gifted learners to include opportunities for acceleration (Tomlinson, 2014). In the differentiated classroom, teachers must be very aware of students' abilities and differences to accommodate their needs and be sensitive to the changes students tend to go through as they continue to learn and grow (Loeser, 2018).

Traditional Gifted Education Strategies

One of the prevailing tenets of gifted education since its earliest incarnation has been the need to provide an education that is different from that of the "average" pupil (Dai, 2018). At its earliest stages, this differentiation tended to focus primarily on acceleration. As mentioned previously, William Harris directed schools in the St. Louis area to allow gifted students to advance at a much faster pace than others and move ahead in grade levels as soon as they were able to (Ford, 2012). In addition to an emphasis on acceleration, gifted students were taught more advanced subjects such as advanced mathematics at a younger age. They were provided with an enrichment of the content,

which might have included elaboration on a particular topic (Shore & Gube, 2018). In these early stages, giftedness was believed to be a static principle such that a student was either gifted or they were not. There was no recognition of the concept of being gifted in different ways such as creative pursuits, the arts, and so on (Dai, 2019). However, through the works of a number educators in gifted education, it is now believed that students can go in and out of periods of giftedness and that giftedness is malleable and can be developed in students through their education (Dai, 2019). This further emphasizes the importance of ensuring that gifted students are not merely being provided with the regular curricula offered in both online and traditional classrooms (Little, 2018).

In more modern times, the NAGC has noted that not providing any kind of educational services for gifted students can have adverse effects on these students' development (NAGC, 2019). In the NAGC 2015 State of the States report, the most prevalent types of educational modifications for gifted students included "differentiated instruction, social-emotional support, content-based acceleration, requirements on contact time, and academic guidance and counseling." Delivery methods included the regular classroom, a pull-out program, resource room, and self-paced learning (NAGC, 2015), which would change when students reach the high-school level where gifted services are predominantly provided through Advanced Placement programs, college/community college dual enrollments, and honors programs with teachers who are, generally, not trained to meet the needs of these learners.

For the most part, gifted education has entailed either modifications in the regular classroom or the implementation of a pull-out program where identified gifted students

are pulled out of a particular classroom at certain times during the week so that they can work with a teacher who is specifically trained or certified in gifted education. Regardless of the style used by a school system, every gifted program seeks to provide some degree of differentiation for gifted learners (Loeser, 2019) based on individual learners' needs. The most used strategies to make these changes to any curricula include the following:

- Respectful tasks (Berger, 1991; Tomlinson & Strickland, 2005) are defined as tasks that students must complete. These are based on their readiness, interests, and learning profiles, which means that the students in one group might be working on entirely different tasks.
- Process/Assessments (Berger, 1991; Loeser, 2019) need to be less summative in nature, tailored to the individual student, and flexible in terms of how learning will be assessed. These must help students go from one point to another in a curricula.
- Flexible Grouping (Adams, 2015) allows students of higher ability to really challenge one another. The key is to enable groups to continually change and fluctuate as students gain new skills and knowledge and take time to process new material. Flexible grouping allows gifted students to interact with new people throughout the course of the year (Loeser, 2018).
- Student Choice (Seaver, 2019), which entails allowing gifted students to have options and a degree of control over what and how they're learning, generates engagement and increases students' commitment to the task. Students may be allowed to choose from a list of projects, suggest their own project, work

within a group or independently, or even select the learning environment (i.e., working while listening to music or in silence, using the floor/desk/alternate seating, having bright or dim lighting, and so on) (Loeser, 2019).

- Curricula Compacting (Loeser, 2018) is a method of differentiating the curricula. It typically involves using some form of pre-assessment to determine what the gifted learner already knows about a particular concept and then allowing them to work on alternate materials/products and move at a faster pace. In the traditional classroom, the teacher would have to keep careful records and notes for accountability.

Students should be encouraged to go from concrete thinking to the abstract and encouraged to find meaning for themselves within the tasks being accomplished rather than simply regurgitating information provided by teachers or other authority figures (Van Tassel-Baska et al, 2020).

Gifted Teacher Training and Professional Development

Gifted learners are a special population within a school system who need to be taught using methods that are conducive to their unique needs and learning styles (Tomlinson & Strickland, 2005; Sayi, 2018). Teachers of gifted learners must be able to recognize students who may need more depth of content and complexity in the curricula. Yet, the majority of teachers dealing with gifted students have not received specific training to meet the needs of this group (NAGC, 2019). According to the NAGC (2014), all teachers, and not just gifted education teachers, should be able to do the following:

- Recognize the learning differences, developmental milestones, and cognitive/affective characteristics of gifted and talented students, including those from diverse cultural backgrounds, and identify their related academic and social-emotional needs.
- Design appropriate learning and performance modifications for individuals with gifts and talents to enhance creativity, acceleration, depth, and complexity in academic subject matters and specialized domains, and
- Select, adapt, and use a repertoire of evidence-based instructional strategies to advance the learning of gifted and talented students.

In the NAGC's 2015 State of the States report, which looks at various aspects of gifted education such as definitions, identification, programs provided, and teacher requirements for working with gifted students, of the 29 students who responded to the questionnaire provided, only 19 were found to require teachers of gifted students to have gifted education credentials. Five of those states had a written test requirement beyond the endorsement/certification requirement, and only 12 states reported that the majority of their gifted education teachers had a specific endorsement/certification. Five states indicated that fewer than 50% of their gifted education teachers had any form of training, with 11 states not collecting any data of this nature.

Only Arkansas reported the requirement of an administrator in a gifted education program to have gifted education training in any capacity. According to the Arkansas Department of Education (2009), anyone in an administrative position, working with students in a K-12 program must meet the basic criteria for any administrative position

(i.e., attaining current certification, passing state testing, and meeting performance standards set by the SBOE) and must have an additional endorsement in gifted education.

There was an even more diverse response from the local education agencies (LEA) with respect to individual district policies associated with the issue of teacher training. According to this report, the majority of general education teachers are not provided any training for identifying or working with (i.e., differentiating the curricula for) gifted students. Only Nevada has a state statute that requires the inclusion of a single course in gifted education at the pre-service level. The three-credit course may cover the needs of gifted learners, containing assessment practices, curricula content, and methodology and strategies for teaching identified gifted students (Nevada Department of Education, 2015). Thirty-nine states indicated that teachers were to receive professional development opportunities at the district level to work with gifted students, but this professional development was optional, not mandatory. Most states would leave the issue of setting any requirement for gifted education training and providing opportunities for such activities to the individual districts within those states. Very few of these states had any hourly requirement or minimum number of continuing education units (CEU) for gifted education training.

At the collegiate level, in this same NAGC report from 2015, 29 states offered a credential in gifted and talented education, with the number of hours ranging from 6 to 36. The methods for earning the credential ranged from acquiring semester credit hours, continuing education units, undertaking staff development, and employing other means of professional development such as attending and participating in a variety of gifted

education conferences. Nine states offered a bachelor's degree with an emphasis on gifted education, 33 states offered a master's degree, 12 states offered a specialist certification, 13 states offered an Ed.D. program, and 10 states offered a Ph.D. program in gifted education. There were two states that offered a form of supplemental license and a gifted education certificate program for teachers already working in the classroom. None of these programs provided any means of training for online education either within the field of gifted or even general education.

Summary

Throughout the relatively brief history of gifted education, one thread has been present in every model: the need to differentiate the curriculum (Ward, 1986; VanTassel-Baska, 2004; Tomlinson 2014; NAGC, 2020). To this end, there are multiple models with a huge range of strategies available for teachers in the traditional classroom to reference in order to find ways to modify the curriculum for their students. There are not, however, multiple models provided that specifically target the online gifted learner population. The literature review revealed curriculum should be differentiated along five themes: environment, curricula, assessment, instruction, and behavioral management (Ward, 1986; VanTassel-Baska, 2004; Tomlinson 2014; NAGC, 2020). These themes will drive the formation of the Delphi instrument which will be outlined in Chapter 3. By consulting with a panel of gifted education teachers, this study will help to provide the recommended strategies online teachers could implement with their online gifted students to differentiate the curriculum.

This chapter has addressed current literature relating to gifted education, provided definitions to help make the study clearer, described the theoretical framework, provided a brief history of gifted education in the United States, outlined the most commonly used methods for differentiating curricula in the traditional classroom, and addressed issues of gifted identification and teacher training/credentialing. Chapter 3 will provide detailed information regarding the methodology used in this study.

Chapter 3: Research Method

Introduction

In this Delphi study, I investigated the strategies that could be used by teachers to differentiate the curricula for online gifted students. The literature review showed the nearly universal agreement amongst all stakeholders in gifted education on the creation of curricula that is differentiated from that provided to the average learner (see Dai, 2018; Ford, 2012; Jolly, 2009; Renzulli & Reis, 2018). As the online learning environment becomes more recognized and acceptable, gifted students are shifting to online learning for a variety of reasons, including access to courses that are not available in their school/district, desire for acceleration, engagement with a more challenging curricula, flexibility, health concerns, social/emotional needs, bullying, among other reasons (Potts, 2019; Sanderson & Greenberger, 2011). However, little to no research has been conducted to determine the best strategies that teachers can implement in an online gifted learning program. This study provides a basis for this critical aspect of differentiating the online curricula for online gifted students.

In this chapter, I explain the methodology used in this study, explain why the Delphi method was selected and was the best fit for the research, outline the role of the researcher at each step in the study, restate the research question, provide a rational for the participant selection, and describe the instrumentation used.

Research Design and Rationale

This study used a Delphi method. The Delphi method was created by the RAND Corporation in the 1950s and 1960s to gather experts' opinions on military strategy

(Dalkey & Helmer, 1963). The Delphi method is now more widely used in healthcare, business, and education to gather experts' opinions in a particular field. As this study was designed to ascertain the best strategies that online teachers can use to differentiate the curricula for online gifted students, a Delphi study appeared to be the best fit. The ultimate goal of the Delphi study is to provide more information on a topic about which very little is known. This is why this methodology was used to research the best strategies that online teachers of online gifted students can implement to ensure that an appropriately differentiated curriculum is provided to gifted learners and to fill the gap in the current literature. To date, little to no research has been conducted to explore the online gifted learner population and understand how to best meet their needs.

Because I determined, based on the recommendation of a panel of education experts, the best strategies for online teachers of online gifted learners, the typical quantitative study where specific numbers are gathered and analyzed would not have been a good fit because these data were not available. Even in the traditional classroom, there is no real method to determine whether a particular strategy implemented for curricular modification is effective. There is no singular strategy that can be employed with all gifted learners to ensure that they all reach their potential. Instead, there is a wide range of strategies that experts in gifted education have implemented, with varying degrees of success, with individual students in the traditional learning environment.

While other methods of qualitative research could have been used, there are a number of reasons that prevent these other methodologies from being feasible. A phenomenological study seeks to investigate the shared experiences of a specific event

(Patton, 2015), which is not the case for determining the strategies teachers could use for differentiating the curricula for online gifted students. I did not attempt to prove, add to, or create any new theories; therefore, a grounded theory methodology would not have worked. A basic qualitative study using a case study, focus group, or individual interviews would not result in generalizable information that could be implemented by any online teacher of gifted students because the number of participants in a basic qualitative study tends to be fairly small and not widely generalizable. The Delphi study uses a larger panel and is based on experts in a particular field where the basic qualitative study may or may not use experts. Therefore, the Delphi study was the best option available to meet the goals of this research study.

The basic premise of a Delphi study involves selecting a panel of participants who are located around the country and who remain anonymous to one another but not to the researcher. This feature of gathering accepted experts in a particular field made the Delphi study appropriate for this study. The anonymity of the panelists is one of the key features to ensure the credibility of this method of data collection, which is typically required by the various ethical committees that are involved in approving the study (McPherson et al., 2018). Using the Delphi method enabled data collection from the panelists without needing travel to multiple locations. Because all panelists were contacted via electronic means, I assumed that all members had computers and access to the internet. The gifted education panelists were provided with a Delphi instrument of structured statements through three rounds (see Hasson et al., 2000). The instrument consisted of a list of strategies, arranged according to the categories that the experts then

rated in order of importance. The rating opinions of each member on each statement were compiled and provided to participants in the next round (see Shelton & Creghan, 2015). The use of the online Delphi instrument is standard for the Delphi method. The panel of experts were not required to share their opinions, although they could and were encouraged to do so, but the primary emphasis was on rating the statements, 1 through 4, and arriving at a consensus ordering those statements. The process of collecting expert opinion would have continued until consensus had been reach. If consensus had not been reached, a fourth and final round would have been initiated. Reaching 100% consensus is somewhat impossible; therefore, a consensus of 51% is considered acceptable (McPherson et al., 2018).

Role of the Researcher

My job as the researcher in a Delphi study was to plan, determine the criteria for who qualified as an expert in the field of gifted and online education, create the Delphi instruments for each round, and facilitate the process.

Researcher bias is a major consideration in any qualitative endeavor (Patton, 2015; Ravitch & Carl, 2016; Shelton & Creghan, 2016). Because I am an online teacher of gifted students, I have some preconceived ideas of how to appropriately differentiate the curricula for my students. By my own criteria of expert qualifications, I met those expectations; therefore, I had to be careful to avoid bias. The pool of participants consisted of individuals who were complete strangers to me or were teachers I worked with in a private online gifted program but did not know on any kind of personal basis. I did not know their teaching styles, philosophies, or expectations. While I had a

professional relationship with three of the panelists, I did not have a personal relationship with any of the panelists selected.

I created the initial Round 1 Delphi instrument, which was pilot tested by a number of individuals, including classmates with whom I had no relationship outside of the course and with whom I had never worked. I revised the statements in the instruments based on their input and feedback. My personal biases and issues with questions were mitigated by the Delphi study, which forced me to look at the opinions provided by an external group of panelists, without considering my own thoughts and opinions.

Research Question Sample

What, according to a panel of online and gifted education experts, are the best perceived strategies for teachers of online gifted students to use in differentiating the curricula for online gifted students?

Methodology

Participant Selection Logic

The target population for this Delphi study was teachers of online gifted students enrolled in U.S.-based, K-12 online programs. There is significant variation in the number of participants for the actual panel, which can have a major impact on the success of the study as well as the reliability of the information collected (McPherson et al., 2018). Panel size recommendations vary from between five and 15 experts to over 100 (Linstone & Turoff, 2011). A panel of 30 is acceptable when the group is homogenous (Skulmosky et al., 2007), while it has been suggested that a Delphi study should adhere to the prescriptions of the original study by the RAND Corporation (Rowe & Wright, 1999).

The number of panelists for this study in Round 1 was determined by the number of experts who were certified to teach gifted students and had at least 5 years of online teaching experience. These criteria were used to decide on which strategies would be best suited for meeting the needs of this unique population of students. The goal was to have at least 30 experts in the field of gifted and/or online education participating in this study during the first round.

Four issues should be considered when determining the panel size:

- Homogeneity: If diversity is not a factor in the study, a smaller, homogeneous panel is acceptable.
- Precision: When attempting to provide exact information, the panel size will need to fit that criterion determined by the researcher.
- Study type: The goal and purpose of the study should be one of the primary driving factors in determining the proper size for the panel of experts. (Garson, 2014; Ng, 2018)

Of these three issues, study type occupied primary importance. Homogeneity was not a factor, as I focused on strategies to help all gifted students in the online setting. Homogeneity and diversity were limited due to the criteria established for determining experts in this field. Precision was not a relevant factor, as I did not gather exact information. Most quantitative studies rely on numbers and statistics to provide specific data indicating the significance of the subject under scrutiny. A Delphi study relies on group consensus for results. In this study, I focused on the factor of study type. The

primary goal was to provide a range of strategies for online teachers of gifted students to implement with that population.

The panel selection is one of the critical factors that ensures the success and validity of any Delphi study (Shelton & Creghan, 2015). However, there are no established guidelines for determining who qualifies as an expert in a particular field. To offset this limitation, the exact qualifications for an expert in the field of online gifted education was determined before contacting any potential panelists. I set the criteria to determine who qualified as an expert in the field, based on the participant credentials and professional development related to gifted education and experience working in an online learning environment. For this study, experts were selected based on their interest, knowledge, and experience in the field (see Green, 2014). I determined the criteria (certification in gifted and/or online learning and at least 5 years' experience working with the gifted population in the online environment) for panel selection and worked with the methodologist assigned to my committee to select the number of panelists (see Green, 2014). The Delphi study uses purposive sampling to obtain participants, as these participants must meet specific criteria to be effective members of the panel and present significant views on the given topic (Hasson et al., 2000).

The experts for this Delphi study possessed a combination of skills in gifted education and online education. Participants who had a minimum of 5 years of experience in online education, with a particular focus on gifted education, were selected. Ideally, the panelists were certified teachers of gifted education in their respective states. Panelists who had specific training or participated in professional development activities

such as attending gifted education conferences, taking supplemental classes/workshops in this area, and working directly with the gifted population for at least 5 years were also considered. Other criteria for participating in this study included the following: Members needed to have taught middle- and/or high-school students in the online learning environment for at least 3 to 5 years to ensure their familiarity with online teaching practices. During the recruitment process, panelists were contacted via email or phone, and they were asked if they met the criteria to be considered an expert for this study. Because many states do not require teachers to have a specific certification/endorsement to teach gifted students, the teachers with extensive backgrounds working with gifted students in an online setting were considered eligible for participation.

With the Delphi study, the original participant numbers tend to be larger than the number of individuals included in the group at the end of the study. As the expert panelists went through three rounds to complete the Delphi instruments, five participants dropped out of the study. Panelist retention has been a widely documented limitation of Delphi studies. Participant degradation tends to result from a few factors, including personal time constraints, job-related requirements, and declining interest when few changes are being shown in the results (Shelton & Creghan, 2015). To compensate for participant degradation, I aimed to obtain a panelist group of 30 participants from across the United States and was able to procure 35 teachers who met my criteria for participation. Due to participant degradation, the expectation was I needed at least 17 respondents by the end of the research period. Having a larger number of experts would

help ensure that there were adequate respondents if this Delphi study had gone through more than the typical three rounds (Green, 2014).

Participants were recruited through a number of outlets. I posted an invitation to the forums board for teacher organizations for gifted education and online education for any teachers who felt that they met the criteria and who were interested in helping improve curricula for the online population of gifted students. They were able to contact me directly and express their willingness to participate in this study (see Appendix C).

I also took advantage of the participant pool offered by Walden University to seek out additional participants and contacted the director/principal of a variety of college and university gifted outreach programs. Most colleges and universities offer some form of gifted outreach program, many of which are now fully online and available to any identified gifted student in the country. The panelists received an initial invitation email (see Appendix D), which was followed by the required consent form. The initial email also allowed the potential panelists to share the email with other teachers whom they felt would be interested and qualified to participate in this study. Because there were very few responses from college and university programs, I expanded my contact to include online gifted education programs that were both public and private organizations. This enabled me to begin the study with 35 expert panelists.

Instrumentation

During the literature review phase, the lack of information available regarding differentiating curricula for online gifted students emphasized the need to incorporate a Delphi student to begin the process of providing the supports needed for teachers of this

population. There were five themes of differentiation that came from the literature review: environment, curricula, assessment, instruction, and behavior management. These five themes were the sources for the statements used in the Delphi instrument (see NAGC, 2020; Tomlinson, 2014; Ward, 1986). Within those five themes, there were lists of suggestions to consider when differentiating material for students in the traditional classroom. These strategies became the basis of the Round 1 Delphi instrument.

All correspondence was conducted via email, and Qualtrics was used to create the actual Delphi instrumentation. If the panelist met the criteria, they received another email (Appendix E), which contained the link to the Round 1 Delphi instrument. If the panelist did not meet the criteria for participation, the person received an email with a notice of declination and thanking them for volunteering (Appendix F).

Qualtrics enabled the panelists to compile their suggestions on strategies for teachers to implement with online gifted students. I was able to immediately see the responses, note who returned the form, and track any changes. Panelists were able to submit their responses to the Delphi instrument once in each round and did not have access to any other panelists' information/responses. Qualtrics allowed me to provide a unique link to each panelist to ensure each person access the instrument individually. Panelists were provided a comment box after each statement where they could provide additional information, clarify a point from the statement, or add in an additional statement/strategy they felt was missing from the instrument. Each of the three Delphi instruments went through IRB review to ensure any ethical issues had been addressed and resolved.

Once the panel had been established, the panelists were provided with an initial Delphi instrument (Appendix G) to indicate their opinions on the best strategies to meet the needs of gifted students in an online program, to help teachers keep this population appropriately challenged. Panelists were given one week to complete the instrument and submit their responses. I compiled the results, returned them to the participants via the Round 2 Delphi instrument which, again, was created using Qualtrics. Qualtrics performed the calculations necessary to determine the mean among the ratings of the strategies and allowed an open-ended portion where the panelists could suggest further changes or iterations of the strategies. One week was allowed for the submission and compilation of the information before beginning Round 3. The plan was continued use of the Delphi instrument, compiled and administered properly, until consensus had been achieved. For rounds subsequent to Round 2, new items were marked as NEW. The statistical mean of each statement was provided at the conclusion of each round.

As this study used the opinion of expert panelists who agreed upon strategies to implement with online gifted students using a combination of qualitative and quantitative data. The participants were provided with a secure link to a Delphi instrument through which their responses were recorded and collated. This study used Qualtrics for Rounds 2 and beyond, which allowed for more flexibility to create, change, and modify statements as needed. It also provided a greater degree of security, since individual participants were assigned their own link. Each round of the Delphi was very carefully documented and evaluated to ensure accuracy.

Data Analysis Plan

A Delphi instrument was created for each round of the Delphi study as the primary means of collecting data (Shelton & Creghan, 2015). I used an initial questionnaire (Appendix A) to determine the background of each participant to ensure they have familiarity with differentiating curricula in an online setting for gifted students. This enabled me to determine each person's definition of differentiation, so this factor is in keeping with the goal of the study to provide strategies to modify curricula for the online gifted learner population. This was not considered a Round 1 questionnaire, and the information was not compiled to return to the panelists. The Round 1 instrument (Appendix G) consisted of 33 statements over the 5 themes of differentiation that were indicated during the literature review: environment, curricula, assessment, instruction, and behavior management (Ward, 1986; VanTassel-Baska, 2004; Tomlinson, 2014; NAGC, 2020). Throughout the instrument, panelists were able to provide further information or clarification through a comment box after each statement should they have wished to do so. However, per procedures for a Delphi study, their additional input was not required (Shelton & Creghan, 2015). The comment box allowed panelists to suggest additional strategies that they felt needed to be implemented when working with the online gifted population. Panelists rated each statement 1-4 in which 4 = very essential, 3 = essential, 2 = somewhat essential, and 1 = not essential. The 4-point scale helped to avoid obtaining a neutral rating option. Subsequent round instruments were created based on the responses of each previous rounds' results.

Data in a Delphi study is aggregated upon achieving consensus of the group. Consensus is the median response of the panel using the interquartile range as the degree of consensus (Okoli & Pawlowki, 2004). A combination of the mean and standard deviation provided a solid description of how participants scored on a given statement. The interquartile deviation is an approach used to determine if consensus has been reached in a Delphi study. This data were used to interpret which strategies the panel of experts felt are essential for differentiating the learning experience by teachers of online gifted learners.

Issues of Trustworthiness

In any study, regardless of the methodology, there will always be issues of trustworthiness of the results and with the researcher. Patton (2015) six issues of credibility to be addressed:

- "Who did the study? Who is the inquirer?
- How has the inquirer's background and perspective affected the findings?
- How might the findings be a function of the inquirer's selective perception, predispositions, and bias? What steps have been taken to deal with potential bias?
- How has the inquiry affected the people in the setting studied?
- How were you affected or changed by engaging in this inquiry?

How can I, the reader and user of your findings, be assured of your competence to undertake this inquiry?" (p. 709)

I addressed each issue as thoroughly as I could have. I am the inquirer. My background is as a teacher of nearly 30 years who developed a particular interest in gifted education in the late 90's when I was living and working in Texas. At the time, Texas had just begun the process to provide a gifted education teaching certificate. Prior to this, the state required teachers of pre-AP, AP, and gifted programs to earn a minimum of 30 hours of professional development in gifted education to teach any of those courses. When my district decided to participate, I was invited to be part of a group of seven teacher who would participate in the first round of certification courses which would be paid for by the district. I took five courses from Southern Methodist University taught by a professor who would travel to Wichita Falls from Dallas for two weekends a month over a period of two years. At the end of the coursework, we were given the option to take the Praxis test for gifted education but were not required to do so. This began my interest and journey into gifted education programs and practices.

The findings of my study could be influenced by my predispositions because I do hold certain beliefs that gifted learners need a differentiated curriculum whether they are in a physical classroom or in an online setting. I am further predisposed to this belief because I have worked for the last 13 years in a private, online high school where I have been the department chair and English teacher for a gifted academy where the curriculum is not modified for the students in that program. While teachers from this organization did participate in this study, I did not know any of those teachers on a personal basis nor did I have any knowledge of their personal views on gifted education. I only knew they had been an online gifted teacher in this program for at least five years. I did not share

nor impose my views on any panelists. My study was grounded in gifted education practices, literature and theory that gifted students need a curriculum that is different from that of the regular student (Ward, 1980; Tomlinson, 2014). My opinions and ideas on what that differentiation would look like for the online student was completely irrelevant and not part of the data collection. I relied on a panel of experts in the field of online gifted education and simply reported their opinions.

The inquiry impacted the panelists by having them think about the strategies they have used and implemented effectively, and then sharing those results with me. They were also provided an opportunity to clarify the compiled results to ensure they agree with the wording and delivery of the strategies supplied. There will be no other impact on the panelists. I was affected by their opinions and learned from the panelists what strategies they believed are the best ones to use for differentiating the curriculum for online gifted students. I was further affected because I will work to implement those strategies and to espouse those to my current administration and hope to be able to share the results at conferences and workshops with other teachers of online gifted learners. This is also how I hope to affect the reader of my study- by providing other teachers of online gifted students with some strategies and means of implementing the suggested methods for differentiating the curriculum. While not specifically addressed in Patton's (2015) list, the students in online gifted education programs may be affected by this study because their teachers will, hopefully, use the strategies to help ensure their gifted learners are appropriately challenged in their courses.

Ethical Concerns

The potential ethical issues raised by this study were nominal. I did not research a vulnerable population nor is the topic controversial. The information sought is not problematic in any capacity. Participants were made aware at each step in the process that participation was entirely voluntary, and they may have stopped participating at any point. The consensus form outlined exactly what the purpose of the study was and the role of the panelists. The form made it clear that there was no benefit to individual panelists for participating in this study. Panelists responded with "I consent" to indicate their willingness to participate in the study. I did not know any of the participants in the study so there are no concerns with power relationships. The consent form made it clear that the organizations contacted are in no way affiliated with the study and that participation was not related to job security in any fashion. No names of participants were to be shared with any of the organizations at any time, nor were the names of participants be published in any portion of the study.

The Delphi instruments were created using Qualtrics which is a password-protected program. I used a security-generated password which does not contain actual words and accessed the instrument on my password-protected computer using face recognition software for unlocking. This computer is only used by myself. The data will be stored at the Qualtrics website for a period of 5 years, after which time all Delphi instruments and their results will be deleted. Qualtrics provides assurances that they do not maintain hidden or secret archives or records of any surveys, instruments, or other forms created using their software produced using their software.

Walden University IRB approval was obtained prior to participant recruitment and between each round of Delphi instrumentation (approval number 02-17-22-0380173).

Summary

Chapter 3 explained the Delphi method which is used because there is very little information available on the topic of differentiation of material for the online gifted student. The Delphi study is frequently a first step to see what experts believe should be available on a particular subject (Shelton & Creghan, 2015). The development of the Delphi instrument was explained as having come straight from the literature review which revealed 5 themes: environment, assessment, curricula, instruction, and behavior management. The 33 statements on the Round 1 Delphi instrument came directly from the most commonly used strategies for each of those themes (Ward, 1986; VanTassel-Baska, 2004; Tomlinson, 2014; NAGC, 2020).

The criteria for panel selection were outlined as requiring participants to be certified teachers with a minimum of 5 years' experience in education. Teachers needed to have either a gifted certification or a minimum of 3 years working directly with online gifted students.

The use of Qualtrics as a means of calculating the interquartile deviation to determine consensus was addressed as a primary factor of the Delphi study (Okoli & Pawlowski, 2004). Issues of trustworthiness, including my personal interest in the information being gathered, were discussed with ethical considerations ending the chapter. The results will be explored in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this qualitative Delphi study was to determine the perceived best strategies for differentiating the curriculum for online gifted students in middle school and high school. The online gifted student needs to have the same attention provided to their peers in the traditional setting. There has been a considerable amount of research and studies completed for determining the best strategies to use in the traditional classroom for gifted learners. However, little attention has been paid to the needs of the online gifted student for teachers to use for differentiating online curricula. During the literature review phase of this study, I determined that there are five general categories (differentiating curricula, assessment, methods of instruction, management, and physical learning environment) of typical strategies used in a traditional setting for meeting the needs of gifted learners. These categories resulted in 33 strategies of differentiation in the Delphi instrument commonly used in a physical classroom, which were identified from the literature review.

A panel of expert teachers who had at least 3 years working in the field of online gifted education rated each strategy on a 4-point Likert scale where a rating of 1 was *not essential* and a rating of 4 was *very essential* for implementation to differentiate curriculum for online gifted learners. I sought to answer the following research question: What, according to a panel of online and gifted education experts, are the best perceived strategies for teachers of online gifted students to use in differentiating the curricula for online gifted students?

In Chapter 4, I describe the research process and summarize the results of the data collection. The mean of each statement was calculated by Qualtrics, and consensus was determined using the interquartile derivative after Round 3. In each round, the existing statements were rated by the participating panelists. They were able to provide clarification for each strategy and suggest new strategies for differentiating the curricula. Any new statements were rated in subsequent rounds.

Setting

Panelists were recruited from online schools located across the United States. Emails or phone calls were sent or made to the principals or chief executive officers (CEOs) of these organizations. For those principals/CEOs interested in participating in the study, a letter of interest was provided to share with the teachers of that organization. Those teachers then contacted me, and I provided them with the approved consent form. It took over 2 months to recruit a sufficient number of panelists for the study to move forward. Most of the organizations contacted took 1 to 2 weeks to respond via email, and many wanted to schedule a phone call to discuss the particulars of the study. If the principal/CEO did want their organization to participate, it generally took a week or longer for the teachers in that organization to respond to the email sent around. When organizations declined to participate, more time was spent researching additional organizations targeting online gifted students when some of the larger, more, well-known programs declined. Approximately 150 organizations were contacted, with only nine organizations, ultimately, providing active participation.

Snowball sampling was used, and each participant was encouraged to share my contact information and the letter of explanation with other experts they felt might be qualified and interested in participating in the Delphi study.

Qualtrics was used to create and deliver the Delphi instruments for each round. Qualtrics is an online survey platform that enables the participants the ease of being able to complete the instruments when it is convenient for them. This platform was convenient to access, presented the results immediately, and tracked who had participated in each round. One of the basic premises of the Delphi study is confidentiality, which was easily maintained through the online platform because the panelists never met with one another. Communication via email was always done using blind carbon copyto prevent panelists from seeing any of the email addresses and to protect anonymity. Comments and other strategy suggestions by the panelists were provided directly in the Delphi instrument. However, panelists never had access to see each other's responses or information in Qualtrics. Any clarifications or suggested strategies were carefully crafted to ensure no information would identify a particular individual.

Demographics

Female panelists far outnumbered male panelists. This is not surprising given the larger number of female educators in K-12 education. Of the 35 panelists, 27 were female while the other eight panelists were male, accounting for only 22% of the total number of panelists. The ratios are fairly close to typical percentages of male to female teachers. According to NCES (2021), 76% of public-school teachers are female and 24% are male.

There are currently no available statistics of the representation of online educators along these same lines.

All of the panelists met the criteria outlined in Chapter 3. Information regarding age, location, content area, educational level, and total number of years teaching experience were not collected in this study. Panelists had a minimum number of 3 years teaching experience with a gifted certification or a minimum of 5 years teaching experience working online with the online gifted population. No other demographic information was collected from the panelists.

Data Collection

Invitations to participate in the study, in each round, were sent to the expert panelists via email. Thirty-five individuals accepted the invitation to participate. Snowball sampling resulted in the recruitment of 15 additional panelists. The consent form was sent to all 35 panelists. Thirty-three of the participants responded with "I Consent" to my Walden University email account. One panelist responded, "I Consent" via Skype, and one panelist did not respond with "I Consent." Thirty-three of the original 35 panelists participated in Round 1. Data collection began on May 15, 2022, and concluded on June 21, 2022. After Rounds 1 and 2, a new Delphi instrument was created to show the results from the round, and to add in any new strategies based on the comments provided by the expert panelists. The new instruments were submitted to IRB to approve before sending each round's instrument to the panelists for rating.

Round 1

The Round 1 Delphi instrument (Appendix G) contained 33 statements. There was a total of 422 comments provided by the panelists. Most of the comments were statements of agreement with the strategy. Almost all comments were single sentence statements with two or three being just short phrases. There was confusion expressed over the wording of Questions 15, 16, 17, 18, and 33 (Appendix G). A statement of clarification was added after the citation for each of these items. A total of 11 new statements were added based on the comments provided by the expert panelists. These were indicated as [NEW] in the Round 2 instrument (Appendix H). Any panelist who had not completed the Round 1 instrument by Thursday, May 19 was sent a reminder email (Appendix I) to complete the instrument. Two of the original 35 panelists did not complete the Round 1 instrument and were removed from the list of panelists. One of the expert panelists who did complete the Round 1 instrument contacted me after completion and indicated she would not be able to participate in the other rounds and was subsequently removed from the contact list.

Round 2

After receiving IRB approval for the Round 2 instrument and accompanying emails, the link to the instrument was sent to the 32 remaining panelists. Round 2 began on Friday, June 3, 2022 and concluded on Thursday, June 9, 2022. If a panelist had not participated by Wednesday, June 8, 2022, a reminder email was sent. There was 100% participation of the 32 panelists in Round 2. Comments in Round 2 echoed many of the comments from Round 1, especially in the category of differentiating the curriculum

where the panelists reiterated that online gifted students should not be given more work. Instead, they need assignments that are designed to allow them to go into greater depth in their learning. For assessments, the expert panelists agreed that a variety of assessments need to be used to determine mastery of content standards and prior knowledge in a particular subject area, especially if that area is of particular interest to the online gifted learner. There were four panelists who consistently indicated that all of the strategies in Section 1 would be beneficial for the average learner and should be made available for all students, not just gifted learners. However, there was an emphasis from the panelists that it is more critical to ensure online gifted students are appropriately challenged in their courses. There were no new strategies added after Round 2 as the comments from the panelists were either in approval/agreement with the strategies with no new suggestions for additional strategies to be added.

Round 3

Once IRB approval was obtained for the Round 3 instrument, the letter (Appendix J) with the link for the Round 3 instrument was sent to participants. Round 2 did not result in any additional statements. Round 3 was primarily about achieving consensus for the statements from the Round 2 instrument. Round 3 began on Wednesday, June 15, 2022 and concluded on Tuesday, June 21, 2022. The instrument was sent to the 32 panelists who participated in Round 2. Of those 32 panelists, 30 completed Round 3. The reminder email to participate (Appendix I) was sent to 10 panelists on Sunday, June 19, 2022. While there were a few comments for some of the statements in Round 3, they did not generate any new strategies to be added and consensus was achieved for each

statement. The study concluded, and the closing email (Appendix K) was sent to panelists on Tuesday, June 21, 2022. The majority of the comments for Round 3 provided agreement/disagreement with the statement and/or provided a refinement to help clarify the statement further. However, none of the comments were extensive enough to warrant a new strategy or another round.

The results of Round 3 were downloaded as both a Word document to share the results with the panelists and as an Excel document to calculate the interquartile deviation (IQD) to determine consensus. Once the IQD was calculated, it was clear consensus had been achieved, which meant there was no further need for additional rounds for this Delphi study.

Data Analysis

The data were downloaded from Qualtrics after each round, revealing the mean and standard deviation for each of the statements, and as well as the commentary from the expert panelists. Selecting the Portable Document Format (PDF) facilitated the sharing of the results of each round with the expert panelists so they could see the mean for each response and the comments provided by other panelists to help them reach consensus for each statement. I went on to use an Excel spreadsheet to calculate the IQD at the conclusion of Round 3. I calculated the IQD for each round for my own practice as this was my first time dealing with this mathematical formula and to see how far from consensus the panelists were in each round. The interquartile deviation was calculated using the first and third quartile and dividing by two *[Q3 – Q1/2 = IQD]* (Humphrey-Murto, et. al., 2017). The first quartile was subtracted from the third quartile and that

number was divided by 2. In Excel, the formula used for determining Quartile 1 and 3 was *=QUARTILE (range,1)* and *=QUARTILE (range,3)*. To determine the IQD, the formula used was *=(Q1-Q2)/2*. The IQD was used to determine whether consensus had been achieved after the third round. The results are shown in Tables 1 to 5.

Evidence of Trustworthiness

Credibility

Credibility is a crucial factor in any academic study, and great lengths must be taken to ensure the information provided, collected, and analyzed does not reflect more than the barest of bias. In this study, credibility was ensured by the expert panelists' experience in working with the online gifted population. Each of the panelists had a minimum of 3 years online teaching experience in which they were working with gifted students based on identification of practices commensurate with the state and/or school requirements. Twenty-seven of the original 35 panelists had more than 5 years of experience working with online gifted students. The remainder of the panelists held a gifted education certification and had been working with online gifted students for at least 3 years. Because all of the responses were anonymous, panelists had the freedom to share their true opinions without fear of intimidation. The multiple rounds of the Delphi study provided panelists with the opportunities to change their responses based on the mean of each statement and the new information that was provided in each round. IRB approval was obtained for each round of this study. The exact same calculations were used to analyze each Delphi round to ensure the data were treated equally at each stage.

Transferability

Transferability was maintained throughout this study by providing very exacting details for every single step taken from beginning to end. Participant selection criteria was carefully described and explained. The methods of obtaining participants were detailed, and notes were kept in a researcher's journal of the organizations that were invited to participate and of those organizations who elected to have members provide their expert opinions. The process for collecting the information from the expert panelists was carefully explained, and it followed the requirements for a Delphi study. Future researchers who wish to replicate this study in order to generate their own results have enough information to do so.

Dependability

Dependability is another vital factor for any study. Any other researcher who follows the steps outlined in this study would be able to complete these exact steps and obtain their results, which would likely mirror those of this study. The data have been presented as accurately as possible and with complete transparency. There is no step that was taken that has not been documented in this study. The results of each round were always downloaded and saved as a PDF and/or in an Excel spreadsheet. The mean and standard deviation were calculated with 100% accuracy as guaranteed by the Qualtrics metrics. The interquartile deviation was also calculated with 100% accuracy after the third round in keeping with Delphi study standards. There were no modifications made to the design of this study at any point, and IRB approval was always obtained at each step, regardless of how large or small a change may have occurred.

Confirmability

The results of this study are based entirely on the opinions of the expert panelists. None of the panelists had any knowledge of my own opinions relating to online gifted education. Any new statements added in Rounds 2 and 3 came from the comments provided by the panelists. Explanations for each decision made during data collection, analysis, and interpretation have been thoroughly clarified. The results have been reported in a neutral and unbiased manner. All parameters of a Delphi study have been followed to maintain consistency and rigor. Qualtrics is a secure, password-protected website that provides anonymity of participants and provides secure protection for all data collected. The mean and standard deviation were determined in the results of each round by Qualtrics, and the interquartile deviation was calculated using Excel after Round 3 was completed.

Results

The Delphi instrument was divided into five categories based on the literature review: curricula differentiation, assessment, methods of instruction, management, and physical learning environment. The Round 1 instrument contained 33 statements. Eleven statements were added after Round 1 concluded. No new strategies were added after Round 2. The commentary from the expert panelists in Round 2 did not yield any new strategies for the panel to consider in Round 3. The total number of statements at the end of the Delphi study was 44. The combined instrument, including the statements added in Rounds 2 and 3 is shown in Tables 1 to 5. Statements added in each round were prefaced with NEW and labeled A., B., and C. directly below the original statement. The mean of

each statement in Round 1 (R1), Round 2 (R2), and Round 3 (R3) including the IQD and whether consensus was reached are listed in Tables 1 to 5.

Table 1 shows the results of Section 1 of the Delphi instrument focuses on accepted methods for differentiating curricula in the traditional classroom. Panelists indicated whether they agreed these same strategies are applicable in the online platform.

Table 1

Section 1: Curricula Differentiation

Delphi statements	R1 Mean	R2 Mean	R3 Mean	IQD	Consensus
1. Curricula should be modified for gifted students so it is different from that of regular students (Ward, 1986; Tomlinson, 2014; NAGC, 2021).	3.25	3.26	3.31	0.5	*yes*
1A. [NEW] Curricula should be modified to be different but should not result in more work to be completed than that of regular students.		3.70	3.70	0	*yes*
1B. [NEW] Curricula should be modified to allow gifted students to develop greater depth and breadth of a subject.		3.85	3.89	0	*yes*
2. Online gifted learners should be provided with opportunities for curriculum compacting when appropriate (Ward, 1986; Tomlinson, 2014; NAGC, 2021).	3.50	3.63	3.67	0.5	*yes*
3. Online gifted teachers should use pre-assessments to determine the online gifted learners' needs for each concept taught to ensure material is appropriately challenging (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	3.09	2.89	2.89	0.5	*yes*
3A. [NEW] Pre-assessments should be varied I format, not just multiple choice.		3.52	3.59	0.5	*yes*
3B. [NEW] Pre-assessments should be used for specific concepts only.		2.65	2.63	0.5	*yes*

Delphi statements	R1 Mean	R2 Mean	R3 Mean	IQD	Consensus
4. Online gifted students should be allowed flexibility in the curricula (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	3.32	3.52	3.48	0.5	*Yes*
4A. [NEW] Flexibility must allow students to demonstrate mastery of requisite standards.		3.67	3.70	0.5	*yes*
5. Online gifted students should be provided with alternate projects/assignments when appropriate (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	3.59	3.41	3.59	0.5	*yes*
6. Online gifted students should be provided with multiple project options to enable them to select a project that appeals to them (Gagne, 2009; Tomlinson, 2014).	3.31	3.26	3.37	0.5	*yes*
7. Online gifted students should be provided with the opportunity to design their own projects (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	3.34	3.19	3.44	0.5	*yes*
8. Online gifted students should be given the opportunity to accelerate the pacing of their courses (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	3.47	3.41	3.56	0.5	*yes*
8A. [NEW] Online gifted students should be given the opportunity to accelerate the pacing of their courses based on mastery of standard(s).		3.52	3.70	0.5	*yes*

Section 1 of the Delphi instrument focused on the specific strategies that are widely recognized for implementation in the traditional classroom. Experts agreed that these strategies are necessary for use with online gifted students as well. Six new statements were added in this section after Round 1. Statements 1A and 1B were generated because nearly 100% of the expert panelists indicated there needed to be additional clarification to what "modified" should entail. The comments from the experts emphasized the need for a different curriculum for the online gifted learner with an emphasis that different does not mean more. Twenty of the expert panelists commented on Statement 1. Eighteen of those comments focused on ensuring curriculum is modified in some capacity for the online gifted learner. Their comments pointed out the need to ensure students are meeting the requisite state standards for the content areas before being allowed to accelerate or modify the curriculum.

Statement 3, relating to pre-assessments resulted in statements being added after Round 1. Of the 17 expert panelists who provided commentary for this statement, 13 panelists indicated pre-assessments need to be varied in format and should be for specific concepts rather than trying to cover broad spectrum topics. Two of the panelists clarified they felt math and science might be a better fit for pre-testing than would humanities courses because of the scaffolding nature of those subjects.

Statement 4 resulted in a new statement being added for the Round 2 instrument. Sixteen of the 17 comments from the expert panelists indicated flexibility is a vital component of differentiating the curriculum for the online gifted learner. Seven of those comments indicated this flexibility must be justified and must be carefully implemented

to ensure the gifted student is not missing/skipping important concepts and that mastery has to remain of primary importance for the student.

Finally, Statement 8 generated a new statement into next round. Thirteen expert panelists commented on this statement with 17 of them pointing out that acceleration cannot mean students are mastering the concepts within the subject. Five of the panelists asserted that acceleration has to be used with careful consideration and is very case-dependent.

Overall, the expert panelists indicated each of the statements, including the additions indicated from the Round 1 commentary, are necessary for implementation with the online gifted student to differentiate their curriculum from that of the average student. They reached consensus on all statements at 0.5 IQD and as well as a 0 IQD for Statements 1A and 1B.

Table 2

Section 2: Assessment

Delphi statements	R1 Mean	R2 Mean	R3 Mean	IQD	Consensus
9. Gifted students' knowledge and skills should be assessed through different methods than that of the typical learner (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	2.59	2.23	2.48	0.5	*yes*
10. Online gifted students should be provided with summative assessments rather than formative assessments (Gagne, 2009; Tomlinson, 2014).	1.84	1.73	1.59	0.5	*yes*
10A. [NEW] Online gifted students should be provided with both summative and formative assessments.		3.73	3.70	0.25	*yes*
11. Assessments for online gifted learners should be tailored for each individual student (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	2.16	1.93	1.89	0.5	*yes*
12. Assessments for online gifted learners should be flexible (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	2.94	2.89	2.74	0.5	*yes*
13. Assessments for online gifted students should contain options other than multiple choice for students to demonstrate their abilities (Ward, 1986; Gagne, 2009; Tomlinson, 2014).	3.41	3.63	3.63	0.5	*yes*

Section 2 of the Delphi instrument focused on the methods online teachers could be using to assess the skills online gifted learners are gathering through their courses. This section had one new statement added after Round 1. Statement 10A was added as 18 of the 19 comments indicated both formative and summative assessments should be used for assessing student understanding of a concept. However, Statement 10 is also a statement where 48% of the panelists felt this statement was not necessary for implementation with the online gifted student. Therefore, Statement 10 is one that would be removed from the list of recommended strategies for differentiating the curriculum. Statement 11 had a similar result with 44% of the panelists indicating assessments should be tailored for each individual student is not very necessary for implementation.

Of the 14 comments provided by the expert panelists, 12 indicated providing a tailored assessment for every single online gifted student in a particular program would not be feasible because of the amount of time and work it would take for the teacher, especially if that teacher has a significant number of students. Experts agreed there is no single means of assessing students' knowledge and that a variety of methods, both summative and formative, should be utilized as students' progress in any course to ensure they are being appropriately challenged and are mastering the standards being covered. Frequent assessments should be made to ensure the online gifted learner is being appropriately challenged. Statement 13 was the only statement in Section 2 which the expert panelists agreed is necessary for implementation with the online gifted student. All of the other statements achieved a consensus of 0.25-0.5 IQD in the "not essential" range

from the expert panelists and were removed from the recommended strategies for differentiation.

Table 3

Section 3: Methods of Instruction

Delphi statements	R1 Mean	R2 Mean	R3 Mean	IQD	Consensus
14. Methods of instruction should be tailored to meet the individual needs of gifted learners (Loeser, 2018).	3.09	3.07	3.00	0.5	*yes*
15. Students should be provided with flexible grouping opportunities in order to interact with peers with similar abilities and/or skills (Loeser, 2018).	3.38	3.41	3.58	0.5	*yes*
16. Students should be provided with flexible grouping opportunities in order to work with peers with similar skills and abilities (Loeser, 2018).	3.40	3.37	3.70	0.25	*yes*
17. Students should be provided with respectful tasks based on readiness (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.	3.17	3.23	3.44	0.5	*yes*
18. Students should be provided with respectful tasks based on interests (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.	2.93	3.23	3.30	0.5	*yes*
19. Students should be provided with respectful tasks based on their learning profile (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.	2.73	3.00	2.89	0	*yes*

Delphi statements	R1 Mean	R2 Mean	R3 Mean	IQD	Consensus
21. Teachers should encourage gifted students to go from concrete thinking/analysis to more abstract thinking/analysis (Tomlinson & Strickland, 2005).	3.74	3.73	3.67	0.25	*yes*
22. Teachers should encourage creative thinking strategies such as open-mindedness of multiple perspectives (Loeser, 2018).	3.72	3.85	3.74	0.25	*yes*
23. Teachers should encourage the application of diverse ideas (Loeser, 2018).	3.72	3.70	3.81	0	*yes*
23A. [NEW] Teachers should encourage the application of content knowledge to solve problems.		3.78	3.92	0	*yes*
24. Teachers should encourage elaboration of ideas (Loeser, 2018).	3.88	3.85	3.92	0	*yes*

Section 3 of the Delphi instrument focused on the teaching methods used by teachers in a traditional setting for instruction. The Round 1 instrument had 11 statements, and one statement was added after seeing the comments from the expert panelists. Statement 23A was added because seven out of eight comments provided by the expert panelists indicated there needed to be clarification of what constitutes “diverse idea(s).” Two of these comments indicated encouraging diverse thinking is a concept that applies to all learners, not just the gifted population. The experts agreed that these strategies apply to the online gifted student who often needs to be encouraged to step outside their comfort zones and may need some guidance learning to work with other students of varied abilities.

Statement 19 was the only one to fall in the ranking of *not essential* for implementation by the expert panelists. This statement dealt with providing tasks based on a learning profile which the majority of the panelists indicated is not a viable issue as learning profiles have been debunked in recent years. Of the 11 comments generated for this statement, 9 expressed uncertainty as to what a "respectful task" might entail, and 2 of the comments questioned the validity of a learning profile. In Round 3, the panelists reached consensus of 0 IQD for this statement so it will be removed from the suggested strategies listed. All of the other strategies were indicated as necessary for implementation with an IQD between 0-0.5.

Table 4

Section 4: Management

Delphi statements	R1 Mean	R2 Mean	R3 Mean	IQD	Consensus
25. Online gifted learners need to have clearly established rules of conduct (Loeser, 2018).	3.47	3.70	3.69	0.5	*yes*
25A. [NEW] Online learners need to have clearly established rules of appropriate interaction with peers in the online platform.		3.78	3.77	0.25	*yes*
25B. [NEW] Online gifted learners need to have clearly established rules of appropriate interaction with teachers in the online platform.		3.63	3.73	0.25	*yes*
26. Online gifted learners need emotional support (NAGC, 2019).	3.63	3.63	3.73	0.25	*yes*
27. Online gifted learners need social support (NAGC, 2019).	3.50	3.63	3.77	0	*yes*
28. Online gifted learners should have a role in determining behavioral expectations (Loeser, 2018).	2.72	2.67	2.65	0.5	*yes*
29. Teachers of online gifted students need to closely monitor student behavior (Loeser, 2018).	2.69	2.85	2.96	0	*yes*

Section 4 of the instrument focused on behavioral concerns that often arise when working with all students. Two statements were added to the original five after the results of Round 1. Both of the new statements, 25A and 25B, were created because the expert panelists indicated it needed the clarification of applying to an online meeting platform which many students moving to the online learning environment would not have been exposed to previously. The experts agreed that online gifted students will often struggle in many of these areas such as appropriate behavior in live class meetings using an online platform such as Zoom, just like their traditional setting peers and will need to have boundaries set for expectations in chatrooms, live meetings, discussion boards, and other forums for communication.

The expert panelists determined that providing students with a role in determining behavioral expectations such as allowing students to have input on how they feel they should behave in an online class setting, Statement 28, is not very necessary for implementation with the online gifted student. Of the thirteen comments provided, ten of the comments indicated it is the job of the teacher, institution, or parents to provide guidelines for behavior, even if the student is going to be allowed a limited degree of input. Statement 29, relating to closely monitoring behavior, had a similar result with one panelist pointing out that if Statement 28 is implemented, Statement 29 becomes a moot point. Ultimately, by Round 3, both of these statements reached consensus by IQD of not being very necessary for implementation and will be removed from the suggested strategies list. The remaining four statements from this section were marked as necessary for implementation by the expert panelists with an IQD of 0-0.5.

Table 5

Section 5: Physical Learning Environment

Delphi statements	R1 Mean	R2 Mean	R3 Mean	IQD	Consensus
30. Online gifted learners' physical environment is an important factor for their success (Morgan, 2014).	3.19	3.41	3.31	0.5	*yes*
31. Online gifted learners will need to work in an environment that is conducive to learning which is dependent on the individual student's preferences (Loeser, 2019).	3.19	3.26	3.23	0.5	*yes*
31A. [NEW] Online gifted learners need guidance to determine what is an environment that is conducive to learning.		3.41	3.23	0.25	*yes*
32. Online gifted learners will need to work in an environment conducive to learning which is dependent on the individual student's needs (Loeser, 2019).	3.57	3.48	3.35	0.5	*yes*
33. Varied lighting will be an important factor for the online gifted student (Seaver, 2019).	2.34	2.63	2.58	0.5	*yes*

The fifth section of the Delphi instrument focused on the online learner's physical environment. The Round 1 instrument contained four statements with one new statement being added after reviewing the comments from this section. Statement 31A was added because four of the seven statements indicated students would need some help in determining what an environment that is conducive to learning might look like. While this is something that is not a controllable factor for the online teacher, the expert

panelists did agree that online gifted students do also need to pay attention to their physical learning environment and may need some guidance from parents and even teachers to help them determine what really works best for them to ensure they're not distracted by their environment.

Only Statement 33, related to lighting, was not indicated as necessary for implementation for the online gifted student. In a traditional setting, it is not uncommon for teachers to bring in alternate light sources instead of relying on the fluorescent lighting that is typical in many classrooms, especially in older buildings. In the online learning environment, students would likely have the ability to manipulate the lighting in their home and/or filter the light from the computer screen. All of the other statements were approved by the expert panelists with an IQD of 0.25-0.5, meaning consensus was reached.

Summary

A panel of 35 experts in online gifted education began this study to determine the best strategies for differentiating curriculum for the online gifted student. The study concluded in Round 3 with a total of 30 expert panelists participating. 32 of the original 35 panelists participated in Round 1. 32 of those panelists participated in Round 2 for 100% participation in that round. Round 3 only saw the loss of 2 panelists, both of whom had notified me after Round 2 they would not be able to continue into Round 3. The expert panelists rated 33 statements in Round 1 using a Likert scale of 1-4 with a rating of 1 being *not necessary* and a rating of 4 being *very necessary* for implementation. Round 1 resulted in 11 statements being added to the Delphi instrument. The study ended

with a total of 44 statements since no new strategies were generated in Round 2. Consensus was determined if the IQD for a statement was less than or equal to 1. None of the statements had an IQD greater than 0.5. The mean for each round and the final IQD is provided in Tables 1-5.

This chapter focused on providing the exact steps that were taken in the data gathering portion of the Delphi study. The results were reported, and issues of credibility, transferability, dependability, and confirmability have been addressed. Chapter 5 will summarize the results of the Delphi rounds in comparison to the literature available regarding online gifted education and gifted education practices in the traditional setting. Chapter 5 further presents the limitations, recommendations, and the importance of this study for implementing social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this Delphi study was to examine the best practices for teachers of online gifted students to use for differentiating the curriculum and meeting the needs of this unique group of students. Experts in the field of online and gifted education rated statements on a Likert scale of 1 to 4 where a rating of 1 was *not necessary* and a rating of 4 was *very necessary*. While there has been considerable work done in the field of gifted education in the traditional classroom, there has been very little attention given to the blooming online learning environment. The literature has highlighted that gifted students need to have curricula that is different from that of the average student to ensure they are being appropriately challenged. The results of the Delphi study in which a panel of expert teachers in the field of online gifted education supports this assertion.

In Chapter 5, I review the purpose and nature of this study, why the study was conducted, and a concise summary of the primary findings. The literature supports the interpretation of the results of the expert panelists' opinions on which strategies are necessary for implementing with the online gifted student. The theoretical framework used is analyzed following the results of this study. This chapter also addresses the limitations of the study and provides recommendation for future research.

Interpretation of Findings

The findings of this study mirror the research conducted in the traditional setting for gifted students, which was covered in Chapter 2. There were some new strategies that are specific to the online gifted learner that were generated by the expert panelists.

According to Ward (1985) and Tomlinson (2014), gifted students need a curriculum that is different from that provided to the regular student. As online education becomes more accepted and acknowledged, students are moving to this venue for various reasons, including the flexibility of being able to work when, where, and how it is most convenient for them. Online gifted students need to be appropriately challenged to ensure they are reaching their potential. In this study, the expert panelists agreed that the majority of the strategies that are implemented in the traditional classroom are also viable for the online gifted learner.

The theoretical framework for this study was the theory of differentiated education for the gifted (Ward, 1986) and Tomlinson's DI model (Tomlinson & Moon, 2013). Ward's (1986) work began in the 1950s where he posited that gifted students need a curriculum that is different from that provided to the average student. This theory has impacted all aspects of gifted education and has led to such models as the Renzulli three-ringed conception of giftedness (Renzulli & Reis, 2018), VanTassel-Baska's curricula model (VanTassel-Baska, 2004), Tomlinson's DI model (Tomlinson & Moon, 2013), and many others as these all stand on the basic concept of modifying (differentiating) a "regular" curriculum to better meet the needs of the gifted learner. However, in all of these cases, it is emphasized that differentiating curricula is not a means of segregating a population of students; it is a method for ensuring the needs of each individual student are met within the classroom setting, regardless of whether that setting is a physical location or the internet (Wu, 2013).

The expert panelists also agreed that all but two of the strategies provided for differentiation of the curriculum should be implemented with the online gifted students. They agreed that online gifted learners need a curriculum that is different from that of the regular online student but were insistent that a different curriculum should not equal more work which is in keeping with the literature on gifted education (see Dai, 2017; NAGC, 2019; Tomlinson & Moon, 2014). The work should be different, allowing and encouraging students to develop a greater depth and breadth of a subject (Statement 1B. See the Delphi statements for curriculum differentiation:

1. Curricula should be modified for gifted students so it is different from that of regular students (NAGC, 2021; Tomlinson, 2014; Ward, 1986).

    1A. [NEW] Curricula should be modified to be different but should not result in more work to be completed than that of regular students.

    1B. [NEW] Curricula should be modified to allow gifted students to develop greater depth and breadth of a subject.

2. Online gifted learners should be provided with opportunities for curriculum compacting when appropriate (NAGC, 2021; Tomlinson, 2014; Ward, 1986).

3. Online gifted teachers should use preassessments to determine the online gifted learners' needs for each concept taught to ensure material is appropriately challenging (Gagne, 2009; Tomlinson, 2014; Ward, 1986).

    3A. [NEW] Preassessments should be varied in format, not just multiple choice.

    3B. [NEW] Preassessments should be used for specific concepts only.

4. Online gifted students should be allowed flexibility in the curricula (Gagne, 2009; Tomlinson, 2014; Ward, 1986).

4A. [NEW] Flexibility must allow students to demonstrate mastery of requisite standards.

5. Online gifted students should be provided with alternate projects/assignments when appropriate (Gagne, 2009; Tomlinson, 2014; Ward, 1986).

6. Online gifted students should be provided with multiple project options to enable them to select a project that appeals to them (Gagne, 2009; Tomlinson, 2014).

7. Online gifted students should be provided with the opportunity to design their own projects (Gagne, 2009; Tomlinson, 2014; Ward, 1986).

8. Online gifted students should be given the opportunity to accelerate the pacing of their courses (Gagne, 2009; Tomlinson, 2014; Ward, 1986).

8A. [NEW] Online gifted students should be given the opportunity to accelerate the pacing of their courses based on mastery of standard(s).

Online gifted students should be allowed to compact the curricula but only when appropriate. The panelists were clear that gifted students are not generally universally gifted in every subject, so care must be taken to ensure it is that subject(s) where giftedness is demonstrated that should be differentiated. For example, it is rare for a student do be gifted in both mathematics and English. Differentiating math curricula for a student who is struggling in math will not have positive results and would likely frustrate that student. The expert panelists emphasized that flexibility is key because gifted

students may need differentiation in a particular subject up to a point, but they also need to be held accountable for ensuring they are mastering all of the concepts covered in a particular course. The panelists determined that using preassessments is not always appropriate, so that statement was removed from the list. The commentary indicated that preassessments do not work in many subjects, and that creating a preassessment for every concept covered in a course would be incredibly time-consuming for the teacher. The expert panelists' comments indicated that pr-assessments should be used sparingly and should be varied in format rather than relying on one type such as multiple-choice. Three of the expert panelists pointed out that Statements 3A: Preassessments should be varied in format, 4: Online gifted students should be allowed flexibility in the curricula, 5: Online gifted students should be provided with alternate projects/assignments when appropriate, 6: Online gifted students should be provided with multiple project options, and 7: Online gifted students should be provided with the opportunity to design their own projects are strategies that should be applicable to all learners, not just online gifted students.

The expert panelists also agreed that assessing the knowledge and skills of the online gifted student should be varied and allow for a degree of flexibility. For example, providing the student with a few options for projects and assignments so they can select a task that is of interest for them while allowing the demonstration of their mastery. In an English course, students could be allowed to create a newsletter, write an essay, or create their own project to complete, which helps give them a variety of means to showcase their knowledge and skills. Panelists pointed out that assessments should be used with

care and created to assess the specific skill in a subject, and that assessment should not be the sole driving factor for determining the online gifted student's progress. Formative assessment appears to be more preferred in the online environment but requires "careful design, monitoring, and the communication of feedback" (Perera-Diltz, Dilani ,& Moe, 2014). Formative assessment may be preferred because it can be used to assess smaller chunks of knowledge and allows students to fail an assignment and learn from mistakes without having the penalty of a poor final grade (Oosterhof et al., 2008). This type of assessment does require constant and on-going evaluation on the part of the teacher, which is why it is not always feasible for the teacher to implement on a whole group basis. See the Delphi statements on Section 2: Assessment:

> 10A. (NEW] Online gifted students should be provided with both summative and formative assessments.
>
> 13. Assessments for online gifted students should contain options other than multiple choice for students to demonstrate their abilities (Gagne, 2009; Tomlinson, 2014; Ward, 1986).

In terms of assessments, the expert panelists agreed that four of the statements needed to be removed, which only left statements 10A and 13 as essential for implementation with online gifted students. Through consensus, the expert panelists determined Statements 9, 10, 11, and 12 should be removed; each of these statements focused on the assessment of online gifted students. The panelists indicated that using a variety of assessments should be standard in all areas of education, not just gifted, and

that using the same assessments as their "regular" peers is not problematic. Statement 9 indicated that gifted students should be assessed through different means than those of their "regular" peers. However, the expert panelists felt that it was acceptable to use the same forms and types of assessments with online gifted students, but there should be a variety of assessments used throughout a course rather than relying solely on testing as a means of determining whether a student has mastered a concept. They also determined that tailoring assessments for each gifted student in a program would be too time-consuming for the teacher, unless there was a very small number of online gifted students in the program, but, even in that situation, the commentary from more than half of the expert panelists indicated they felt assessments did not necessarily need to be tailored. The expert panelists determined only one of the original five statements from Round 1 and the single statement added for Round 2 would be applicable in the online setting. Both of these statements indicate there should be formative and summative assessments used to determine mastery of a concept and that assessments should be varied in nature. Using assessments that are typically found in the traditional classroom such as observation, random questioning/interacting with a student, and so on are not as reasonable in an online setting, which is often asynchronous in nature (Perera-Diltz & Moe, 2012). However, online technology means teachers can use discussion boards, model answers, reflections, and other methods that can be used as both formative and summative assessment, which corroborates with the results of the portion of this Delphi study. See the Delphi statements for the methods of instruction:

14. Methods of instruction should be tailored to meet the individual needs of gifted learners (Loeser, 2018).

15. Students should be provided with flexible grouping opportunities in order to interact with peers with similar abilities and/or skills (Loeser, 2018).

16. Students should be provided with flexible grouping opportunities in order to work with peers with similar skills and abilities (Loeser, 2018).

17. Students should be provided with respectful tasks based on readiness (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

18. Students should be provided with respectful tasks based on interests (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

20. Teachers should employ evidence-based strategies to encourage higher level thinking (Tomlinson & Strickland, 2005).

21. Teachers should encourage gifted students to go from concrete thinking/analysis to more abstract thinking/analysis (Tomlinson & Strickland, 2005).

22. Teachers should encourage creative thinking strategies such as open-mindedness of multiple perspectives (Loeser, 2018).

23. Teachers should encourage the application of diverse ideas (Loeser, 2018).

23A. [NEW] Teachers should encourage the application of content knowledge to solve problems.

24. Teachers should encourage elaboration of ideas (Loeser, 2018).

In the area of methods of instruction, there was only one statement that was removed, Statement 19, which covered providing students with respectful tasks, according to age and grade, based on a learning profile. Five of the expert panelists referred to the fact that studies on learning profiles have indicated these profiles are unreliable and subject to extreme change as a student grows and matures. In this section again, nearly half of the expert panelists pointed out that many of the strategies that are accepted and implemented for the traditional gifted learner are strategies that should be employed with the online learner and could be beneficial for the average student as well. Most of these strategies revolved around flexible grouping, providing instruction that is tailored to meet the needs of individuals regardless of gifted status, and ensuring teachers are trained in how to appropriately instruct gifted students and also trained in how to effectively differentiate curriculum. Gifted students learn in ways that are different from those of the typical student so they need to be constantly challenged which can come through the form of flexible grouping (Adams, 2014). This could mean allowing a 6th grader who is advanced in the study of history to participate in an 8th grade social studies project exploring the battles of the Civil War in more depth. The new statement 23A (Table 7) was added in Round 2 based on the commentary of the expert panelists to indicate online gifted students should be encouraged to apply the knowledge gained in a course to solve problems. The commentary indicated sometimes gifted students want to

try to find new and unique methods for trying problems rather than seeing how they could take the knowledge they've learned and use that in new and creative ways.

25. Online gifted learners need to have clearly established rules of conduct (Loeser, 2018).

25A. [NEW] Online learners need to have clearly established rules of appropriate interaction with peers in the online platform.

25B. [NEW] Online gifted learners need to have clearly established rules of appropriate interaction with teachers in the online platform.

26. Online gifted learners need emotional support (NAGC, 2019).

27. Online gifted learners need social support (NAGC, 2019).

In the area of management, two new statements, 25A and 25B (Table 9) were added in Round 2 because the commentary from the expert wanted clarification that online gifted students need to have clearly established rules of appropriate interactions with teachers and other students in an online platform. The online learning environment with live sessions is often very new and confusing for students first entering this setting.

The expert panelists agreed that online gifted students need guidance in appropriate behavior in a live iClass setting for interacting with teachers and other students. They also agreed that paying close attention to the online gifted students' emotional status is equally as important as it would be in the traditional classroom; although this may be a more difficult element to assess in the online environment when the teacher may not always be able to see the student. The panelists also agreed that allowing students a role in determining behavioral expectations is not necessary for implementation with the online gifted student. The commentary indicated many schools already have rules set for how students are expected to behave in an online live session.

The expert panelists also determined monitoring student behavior is not as important in the online setting when expectations have been clearly established in advance.

30. Online gifted learners' physical environment is an important factor for their success (Morgan, 2014).

31. Online gifted learners will need to work in an environment that is conducive to learning which is dependent on the individual student's preferences (Loeser, 2019).

31A. [NEW] Online gifted learners need guidance to determine what is an environment that is conducive to learning.

32. Online gifted learners will need to work in an environment conducive to learning which is dependent on the individual student's needs (Loeser, 2019).

Finally, the expert panelists agreed that a student's physical learning environment (Table 10) is as important in the online setting as it is in the traditional classroom, but the panelists also pointed out that this is not something the online teacher would be able to control. They felt that online gifted students may need direction and guidance in determining what an environment that is conducive to learning might look like because they are not always in the best position to make this determination for themselves. However, the expert panelists, universally, agreed that the online gifted student has considerably more flexibility in the physical learning environment than the traditional student typically has. The expert panelists agreed through consensus that having varied lighting is not necessary for implementation with the online gifted student, but the commentary indicated this is because lighting is not a factor that an online teacher can control in any fashion and may not even have any awareness of what kind of lighting is available for the online gifted student.

Ultimately, the results of this study indicate that what is good for differentiating the curriculum for the traditional student should also be applied for ensuring the online student is also being appropriately challenged. Nothing in this study contradicted the information that was gathered in the literature review.

Limitations of the Study

In a Delphi study, the length of time between rounds is considered to be a limitation because it is linked to participate degradation. This study began on May 15, 2022, and ended on June 21, 2022. The study lasted a total of 28 days. It began with 35 expert panelists and ended with a total of 30 expert panelists participating. The largest amount of degradation was in Round 1, since only 32 of the 35 expert panelists participated in Round 1. Round 2 had 100% participation and all 32 expert panelists participated in that round. Following the second round, only two experts couldn't continue on to Round 3, leaving the remaining 30 for the final round.

The amount of time recruiting participants was a limitation to this study as well. It took two months to recruit 35 expert panelists. I began recruiting panelists in February 2022 and did not obtain a sufficient number of panelists to begin the study until May. Because of this time frame, there were some additional members who dropped out because of changes in their personal lives, the close proximity to the end of the school year and summer vacation beginning, and other, not reported, reasons.

The timing of the start of the study was also a significant limitation as the study did not begin until the end of the school year and most of the expert panelists participating in this study were dealing with end-of-year tests, activities, school closings,

etc. and were also gearing up for summer vacations. Because of these types of distractions on the expert's attention, this has to be considered a major limitation for this study.

Recommendations

It is recommended that further research be conducted into the more specific strategies to use for differentiating the curriculum for the online gifted student be conducted to further refine the strategies online teachers can use. The immediate focus of this study was to look at the generally accepted strategies used in a traditional classroom to determine which of those should also be used for differentiating the curriculum for the online gifted student. The strategies included in this study (Tables 1-5) were fairly broad and did not provide the specifics for how to differentiate the curriculum. For example, Statement 1 says "curricula should be modified for gifted students so it is different from that of regular students," but there is nothing that says what that would look like. While this study indicates the same strategies used in the traditional classroom should be applied, this study did not address how that would work nor how teachers could modify curricula. Further research into the different types of online modules such as a synchronous or asynchronous program needs to be conducted as does researching how to modify a vendor created curriculum compared with a teacher created curriculum. In my study, the focus was on strategies that could be used to differentiate the curriculum for the online gifted student in any learning module (i.e., synchronous or asynchronous) rather than in targeting a specific platform. However, it would be very useful for teachers to know how to modify curriculum for students who are moving at their own paces and

for students who are in a more traditional platform or who are working in cohorts. In many cases, a vendor created curriculum has much more stringent restrictions on what can and cannot be modified in the actual course.

Further research into the needs of the online gifted learner is most definitely warranted as the literature review revealed there is a dearth of information available to help teachers of this unique population. There have been numerous studies conducted and books written about meeting the needs of the gifted student in a traditional setting. Because of the increasing growth of online learning, this same attention needs to be given to the online gifted population.

It is also recommended that the timing of the study be in the middle of a semester rather than at the end of a school year. Teachers have a lot of paperwork, deadlines, state requirements, and other issues that must be taken care of and resolved in a short period of time at the end of a school year. Conducting this type of study earlier in a school year might help to reduce the amount of work teachers are having to give their attention to and enable them to better focus on the various items in the Delphi instruments.

Implications

Implications for positive social change are indicated in a number of ways based on this study. First, by beginning the process of bringing attention to the needs of the online gifted population, this study will help open the doors for further research into how to help the growing online gifted population, particularly in how teachers would modify online curriculum when they are usually not programmers and cannot reprogram or rewrite entire content. While there have been studies looking at very specific models of

online learning, very little attention has been paid to how to meet the needs of the online gifted learner or on how to prepare online teachers for differentiating the curriculum for this population. These students need the same attention paid to them as their traditional setting peers.

Second, teachers of online gifted students will be able to advocate for providing their students with a curriculum that is differentiated from the regular curriculum provided to other students in their school system. This will help to better meet the needs of individual students and to ensure they are being appropriately challenged. While there has not yet been research showing which strategies demonstrate the best use in differentiating the curriculum for the online gifted learner, teachers do now have a group of strategies they can use and implement for this purpose. These strategies have already been proven to work in the traditional setting. They just need to be implemented and studied in the online educational environment.

Recommendations for Practice

Differentiating curriculum has been a well-established practice for working with gifted students in the traditional setting (Ward, 1986; Tomlinson & Moon, 2014). As online learning becomes more widely accepted and recognized as a valid alternative to the bricks and mortar classroom, it is important that online teachers are trained in meeting the needs of all students moving to this environment, including the online gifted learner.

I would recommend, based on the commentary from the expert panelists, all online programs should require teachers who will be working with an online gifted population receive some degree of training in how to differentiate curricula. This training

could be provided by the school, or it could be required as a form of professional development where the individual teacher seeks out opportunities for training. This is an easy recommendation for implementation as there are multiple opportunities available for the online teacher to receive training such as the NAGC's yearly conference which teachers can attend and select the specific sessions which most apply to their situation. Most colleges and universities in the U.S. have gifted education programs and/or individual courses where teachers can receive this type of training although it will be geared for the application in a traditional setting because not much attention has been given to the online gifted community. This needs to change.

Organizational commitment to providing the best teachers for the online gifted community will be a key factor for improving the education for this group of students (NAGC, 2019). It took over two months just to find teachers who met the minimum criteria of three years teaching experience and a gifted education survey or having a minimum of five years online teaching experience working with an online population of gifted learners to complete this study. This indicates there are a lot of online teachers working with a population for whom they have no training and less experience. This means our brightest minds are being taught by educators who are not trained and have no educational background in how to appropriately differentiate the curricula. The cost of attending conferences or taking college courses can be very costly for teachers, especially teachers who are in the earliest stages of their educational careers. However, a stipend or some form of compensation could be made available for teachers in these organizations to help offset the expenses of obtaining the requisite training. There are some virtual

options that organizations can pay a license fee which then makes those training courses available to teachers in an organization for a specific time period which would enable a larger group of teachers to receive training in differentiating curriculum and meeting the needs of the online gifted population.

Conclusion

The purpose of this Delphi study was to determine the perceived best strategies for differentiating curriculum for the online gifted student. Expert panelists rated a total of 44 strategies using a Delphi instrument created in Qualtrics. The research question addressed in this study was: What, according to a panel of online and gifted education experts, are the best perceived strategies for teachers of online gifted students to use in differentiating the curricula for online gifted students?

The expert panelists reached consensus on every strategy based on the calculation of the IQD. They determined the strategies used for differentiating curriculum in a traditional setting would also be appropriate and should be implemented with the online gifted population. This study provides an understanding that differentiating curriculum is equally important for the gifted student regardless of the learning environment and venue.

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Appendix A: Email for Background Survey

Hello [Insert Name],

Thank you for your willingness to participate in this study. Here is the link to the background questionnaire that will be used to help determine your knowledge of and experience with differentiating the curricula: Questionnaire 1: Background Information.

When you have completed this questionnaire, I will review the responses. These responses will only be used to provide background information for this study and do not pertain to the actual data collection process at this stage.

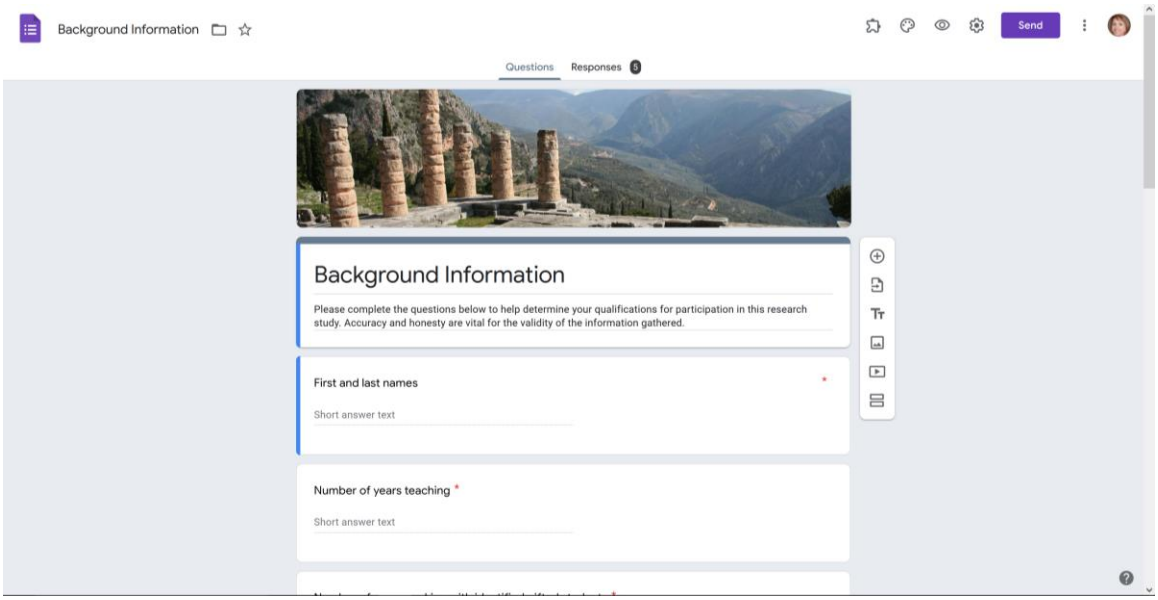
You will receive another email from me within 24 hours. That will contain the link to the second questionnaire, which will be used to gather your opinion regarding the best strategies teachers should use for differentiating the curricula for online gifted students.

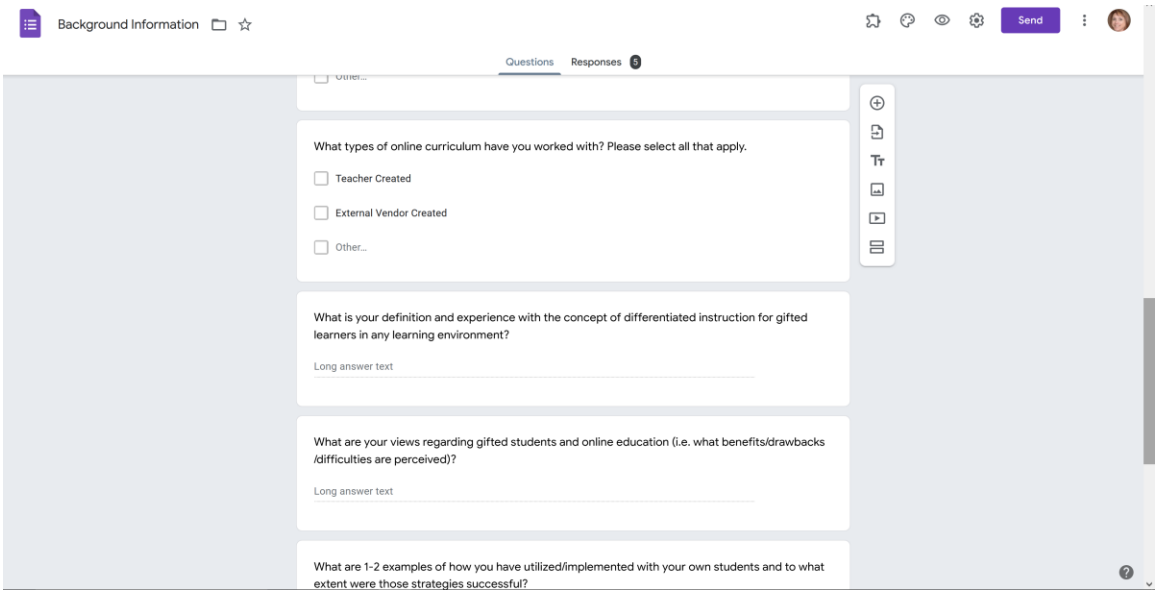
I appreciate your time and input.

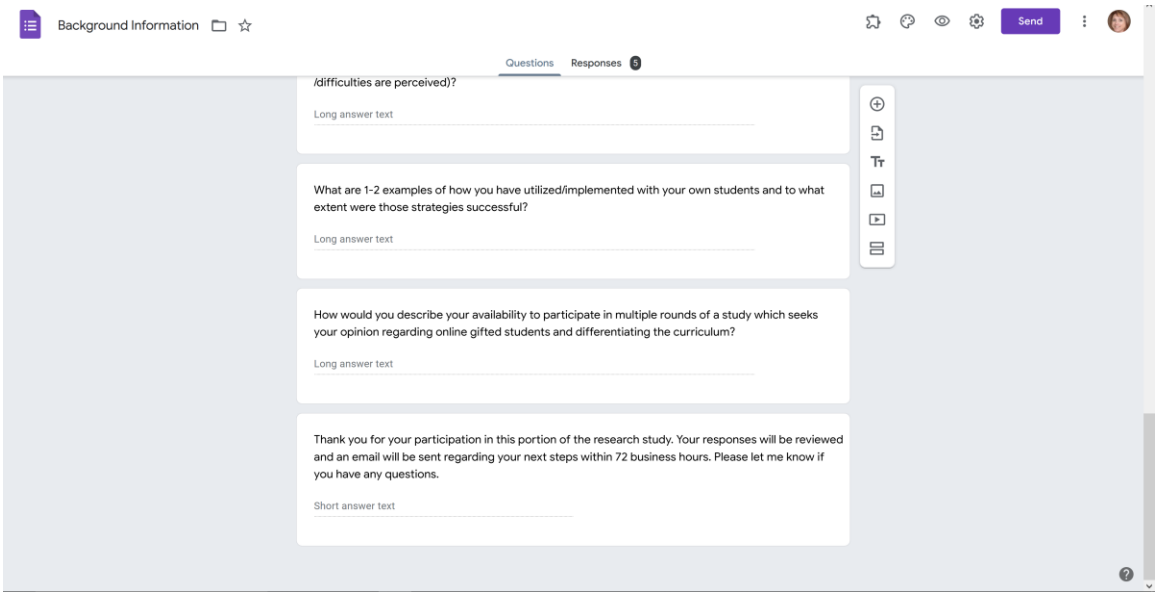
Cheers,

Joy Nehr

Appendix B: Background Survey (Screenshots)






Background Information
Send
Questions
Responses 5
/difficulties are perceived)?
Long answer text
What are 1-2 examples of how you have utilized/implemented with your own students and to what extent were those strategies successful?
Long answer text
How would you describe your availability to participate in multiple rounds of a study which seeks your opinion regarding online gifted students and differentiating the curriculum?
Long answer text
Thank you for your participation in this portion of the research study. Your responses will be reviewed and an email will be sent regarding your next steps within 72 business hours. Please let me know if you have any questions.
Short answer text

Appendix C: Walden University Consent Form

Hello [Insert Name],

My name is Joy Nehr. I am a doctoral student at Walden University, currently working on my dissertation research study.

You are invited to take part in a Delphi study designed to provide online teachers of online gifted students a range of strategies to help differentiate the curriculum for this unique population. If you choose to participate, your input will help fill a gap in the literature as there is currently little information on how to differentiate curriculum for the online gifted student. I am attempting to include a panel of at least 30 experts in the field of online gifted education. To be considered an expert for this study, you must have a minimum of five years online teaching experience with a minimum of three years working with online gifted students or have a gifted education certificate with at least three years working with online gifted students.

Additionally, if you know any other teachers who would be interesting and qualified to participate in this study, please, feel free to forward this note.

This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

Participation Procedures:

This study will involve you completing the following steps:

- Click the link to the Round 1 Delphi Instrument and enter the password that will be provided.
- Rank each strategy on a 1-4 scale:
    - 1 = not essential
    - 2 = somewhat essential
    - 3 = essential
    - 4 = very essential
- If you would like to provide additional information about a particular strategy, or if you feel a strategy should be included, please add this to the "comment" box after each strategy.
- To complete the Round 1 Delphi Instrument, click the "submit" button on the very last page.

The results will be compiled into the Round 2 Delphi Instrument and a password-protected link will be provided for you to repeat the above process. The Delphi rounds will continue until there is consensus among the panelists of the strategies that are best implemented for differentiating the curriculum. It is anticipated this will take 3-4 rounds. Each Delphi round will take approximately 30 minutes to complete. In most Delphi studies, the final rounds take less time to complete and are expected to take only about 15 minutes.

Voluntary Nature of Participation:

Completing these questionnaires is voluntary. If you decide to take part now, you can still change your mind later.

Risks and Benefits of Participation:

Being part of this practice would not pose any risk beyond those of typical daily life. You will be helping to provide online teachers of online gifted students with strategies they can implement to differentiate the curriculum to help ensure gifted learners are appropriately challenged.

If the research procedures reveal or create an acute psychological state that necessitates a referral, Mental Health America offers a 24-hour crisis center, call 1-800-273-TALK (8255), or text MHA to 741741 at the Crisis Text Line.

Payment:

There is no form of payment being provided for participation in this study.

Privacy:

The researcher is required to protect your privacy. Your identity will be kept private, within the limits of the law. The researcher is only allowed to share your identity or contact info as needed with Walden University supervisors (who are also required to protect your privacy) or with authorities if court-ordered (very rare). The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. If the researcher were to share this dataset with another researcher in the future, the dataset would contain no identifiers so this would not involve another round of obtaining informed consent. Data will be kept secure by password protection.

Data will be kept for a period of at least 5 years, as required by the university. Individual names and information will not be shared at any point during this study, either in the results or to other participants. Details that might identify participations, such as email, will not be shared.

Overall results to the Delphi instruments will be shared with each participant upon completion of the survey. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

Please feel free to contact me now or at any time with questions about participation in the study via email at: XXX@waldenu.edu.

If you want to talk privately about your rights as a participant or any negative parts of the study, you can call Walden University's Research Participant Advocate at 612-312-1210. Walden University's approval number for this study is 02-17-22-0380173. It expires on February 16, 2023.

Please share any questions or concerns you might have at this time. If you understand the study and wish to volunteer, please reply to this email with the words "I consent."

Please print or save this consent form for your records.

Regards,

Joy Nehr

Appendix D: Invitation Letter for Potential Panelists

Hello [Insert Name],

Thank you for your interest and willingness to participate in this research study. This study aims to investigate strategies recommended by a panel of gifted and online education experts for differentiating the curricula for online gifted students. While considerable attention has been directed to providing various strategies for challenging and engaging gifted learners in the traditional setting, little to no information is available to address the issue for the online gifted population. It is important to ensure that online teachers have the proper tools and training to fulfil the needs of this group of learners, which has not been the case in most situations. The approach will be a Delphi study, and data collection and analysis will be primarily qualitative to address this gap in the literature for differentiating the curricula for online gifted students.

To be considered an expert for this study, you must have a gifted education teaching certificate and have worked with online gifted students for a minimum of three years. Please let me know if you feel you meet this criterion and would be willing to participate in this study by filling a series of questionnaires. Each questionnaire should take between 20–30 minutes of your time to complete. With the Delphi study, the rounds continue until a consensus has been reached by a panel of experts, so I cannot predict, at this time, how many rounds this study will take.

If you are interested and willing to participate, please respond to this email indicating your interest.

Regards,

Appendix E: Email With Link to Round 1 Questionnaire

Hello [Insert Name],

Thank you for your willingness to participate in this study. This next link asks you to rate 33 statements in the Round 1 Delphi instrument using a 4-point Likert style system in which 1 = not essential, 2 = somewhat essential, 3 = essential, and 4 = very essential. There is a comment box after each statement in which you may choose to provide clarification of the statement, suggest alternate wording, and/or provide an additional strategy you feel would be appropriate for online teachers working with online gifted students to implement. Questionnaire 2: First Round Questions.

Please be as detailed and thorough as possible in your responses—imagine you are providing this information for a teacher who has had no training or experience in gifted education in any setting.

Time is always a factor in any study, so please try to send in your responses within the next week. Once all the panelists have responded, I will compile the suggestions, create a new questionnaire, and send it back to you. I plan to complete this task within a week of receiving the final response(s). I appreciate your patience and understanding.

Again, thank you for participating in this research study. Your input is appreciated.

Regards,

Joy Nehr

Appendix F: Email Declining Participant

Hello [Insert Name],

Thank you for your interest in participating in this research study. At this time, you do not meet the criteria for being an expert in the field of gifted and online education.

If you are interested in seeing the results of this survey, they will be made available upon request once the study is completed.

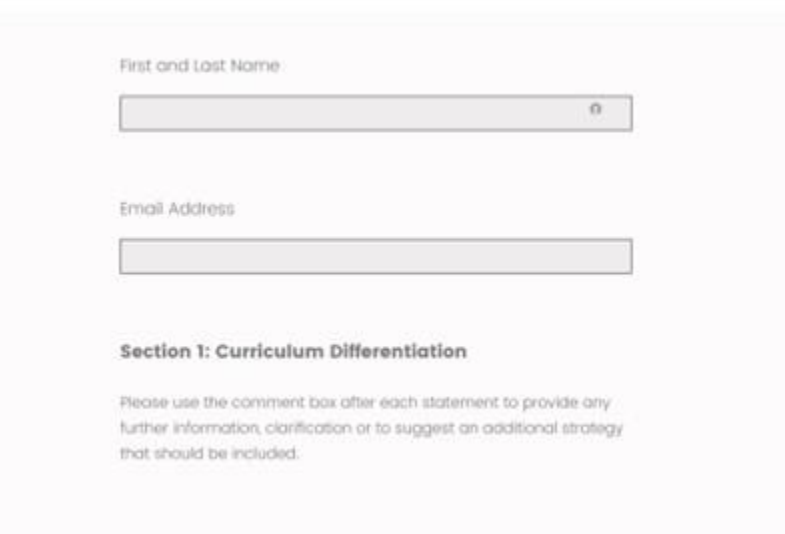
Regards,

Joy Nehr

Appendix G: Round 1 Delphi Instrument (screenshots)

Link to survey:

https://uarizona.co1.qualtrics.com/jfe/form/SV_8JpCppNf6dMHQCa



1. Curricula should be modified for gifted students so it is different from that of regular students (Ward, 1986; Tomlinson, 2014; NAGC, 2021).

1	2	3	4
○	○	○	○

Comments

2. Online gifted learners should be provided with opportunities for curriculum compacting when appropriate (Ward, 1986; Tomlinson, 2014; NAGC, 2021).

1	2	3	4
○	○	○	○

Comments

3. Online gifted teachers should use pre-assessments to determine the online gifted learners' needs for each concept taught to ensure material is appropriately challenging (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

4. Online gifted students should be allowed flexibility in the curricula (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

5. Online gifted students should be provided with alternate projects/assignments when appropriate (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

6. Online gifted students should be provided with multiple project options to enable them to select a project that appeals to them (Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

7. Online gifted students should be provided with the opportunity to design their own projects (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

8. Online gifted students should be given the opportunity to accelerate the pacing of their courses (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

Section 2: Assessment

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

9. Gifted students' knowledge and skills should be assessed through different methods than that of the typical learner (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

10. Online gifted students should be provided with summative assessments rather than formative assessments (Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

11. Assessments for online gifted learners should be tailored for each individual student (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

12. Assessments for online gifted learners should be flexible (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

13. Assessments for online gifted students should contain options other than multiple choice for students to demonstrate their abilities (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comment

Section 3: Methods of Instruction

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

14. Methods of instruction should be tailored to meet the individual needs of gifted learners (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

15. Students should be provided with flexible grouping opportunities in order to interact with peers with similar abilities and/or skills (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

16. Students should be provided with flexible grouping opportunities in order to work with peers with similar skills and abilities (Loeser, 2018).,

1	2	3	4
○	○	○	○

Comments

17. Students should be provided with respectful tasks based on readiness (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

18. Students should be provided with respectful tasks based on interests (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

19. Students should be provided with respect tasks based on their learning profile (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

20. Teachers should employ evidence-based strategies to encourage higher level thinking (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

21. Teachers should encourage gifted students to go from concrete thinking/analysis to more abstract thinking/analysis (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

22. Teachers should encourage creative thinking strategies such as open-mindedness of multiple perspectives (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

23. Teachers should encourage the application of diverse ideas (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

24. Teachers should encourage elaboration of ideas (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

Section 4: Management

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

25. Online gifted learners need to have clearly established rules of conduct (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

26. Online gifted learners need emotional support (NAGC, 2019).

1	2	3	4
○	○	○	○

Comments

27. Online gifted learners need social support (NAGC, 2019).

1	2	3	4
○	○	○	○

Comments

28. Online gifted learners should have a role in determining behavioral expectations (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

29. Teachers of online gifted students need to closely monitor student behavior (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

Section 5: Physical Learning Environment

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

30. Online gifted learners' physical environment is an important factor for their success (Morgan, 2014).

1	2	3	4
○	○	○	○

Comments

31. Online gifted learners will need to work in an environment that is conducive to learning which is dependent on the individual student's preferences (Loeser, 2019).

1	2	3	4
○	○	○	○

Comments

32. Online gifted learners will to work in an environment conducive to learning which is dependent on the individual student's needs (Loeser, 2019).

1	2	3	4
○	○	○	○

Comments

33. Varied lighting will be an important factor for the online gifted student (Seaver, 2019).

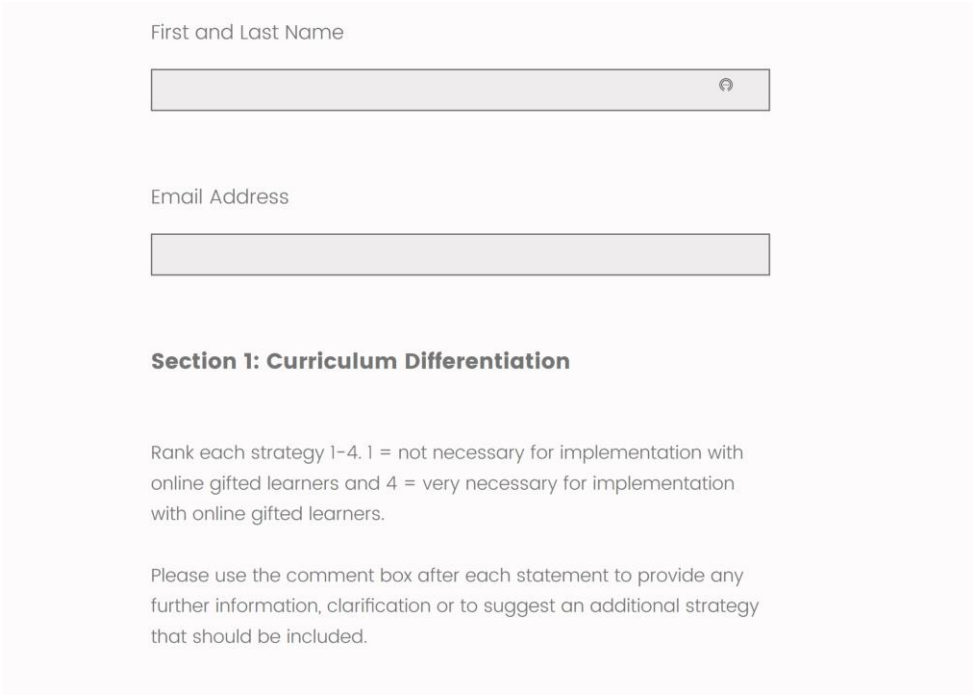
1	2	3	4
○	○	○	○

Comments

Appendix H: Round 2 Delphi Instrument (screenshots)

Link to Round 2 Instrument:

https://uarizona.co1.qualtrics.com/jfe/form/SV_cCsTNShX2XLLHdY



First and Last Name

Email Address

Section 1: Curriculum Differentiation

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

1. Round 1:
Mean: 3.25
Standard Deviation: 0.79
IQR: 1

Curricula should be modified for gifted students so it is different from that of regular students (Ward, 1986; Tomlinson, 2014; NAGC, 2021).

1	2	3	4
○	○	○	○

Comment

[NEW] 1A. Curricula should be modified to be different but should not result in more work to be completed than that of regular students.

1	2	3	4
○	○	○	○

Comment

[NEW] 1B. Curricula should be modified to allow gifted students to develop greater depth and breadth of a subject.

1	2	3	4
○	○	○	○

Comments

2. Round 1:
Mean: 3.50
Standard Deviation: 0.87
IQR: 1

Online gifted learners should be provided with opportunities for curriculum compacting when appropriate (Ward, 1986; Tomlinson, 2014; NAGC, 2021).

1	12	3	4
○	○	○	○

Comments

3. Round 1:
Mean: 3.09
Standard Deviation: 0.91
IQR: 1.25

Online gifted teachers should use pre-assessments to determine the online gifted learners' needs for each concept taught to ensure material is appropriately challenging (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

[NEW] 3A. Pre-assessments should be varied in format, not just multiple choice.

1	2	3	4
○	○	○	○

Comments

[NEW] 3B. Pre-assessments should be used for specific concepts only.

1	2	3	4
○	○	○	○

Comments

4. Round 1:
Mean: 3.32
Standard Deviation: 0.69
IQR: 1

Online gifted students should be allowed flexibility in the curricula (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

[NEW] 4A. Flexibility must allow students to demonstrate mastery of the requisite standards.

1	2	3	4
○	○	○	○

Comments

5. Round 1:
Mean: 3.59
Standard Deviation: 0.82
IQR: 0.25

Online gifted students should be provided with alternate projects/assignments when appropriate (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

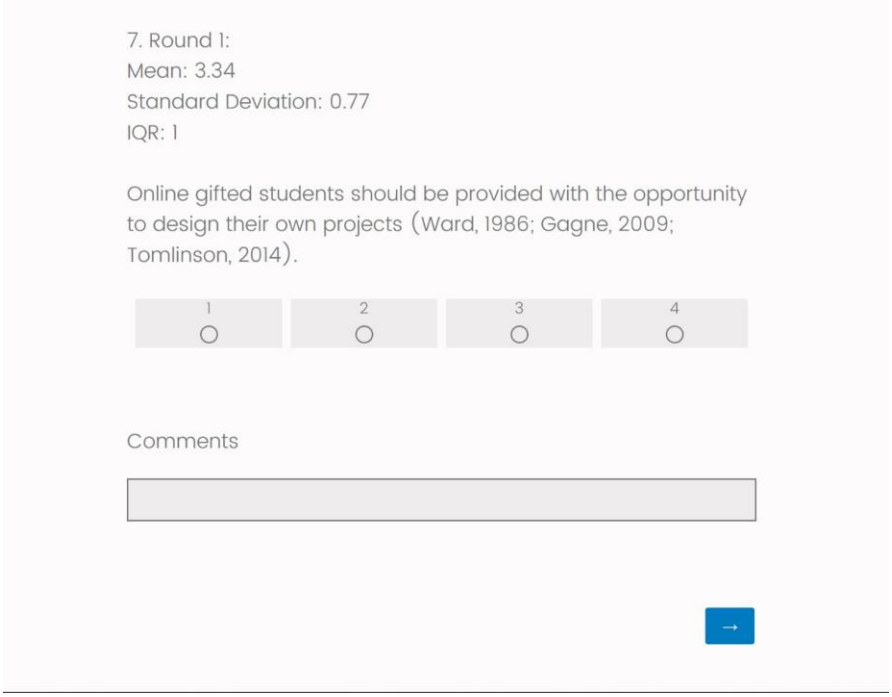
Comments

6. Round 1:
Mean: 3.31
Standard Deviation: 0.92
IQR: 1

Online gifted students should be provided with multiple project options to enable them to select a project that appeals to them (Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments


7. Round 1:
Mean: 3.34
Standard Deviation: 0.77
IQR: 1
Online gifted students should be provided with the opportunity to design their own projects (Ward, 1986; Gagne, 2009; Tomlinson, 2014).
1
2
3
4
Comments
→

8. Round 1:
Mean: 3.47
Standard Deviation: 0.75
IQR: 1

Online gifted students should be given the opportunity to accelerate the pacing of their courses (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

[NEW] 8A. Online gifted students should be given the opportunity to accelerate the pacing of their courses based on mastery of standard(s).

1	2	3	4
○	○	○	○

Comments

Section 2: Assessment

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

9. Round 1:
Mean: 2.59
Standard Deviation: 0.96
IQR: 1

Gifted students' knowledge and skills should be assessed through different methods than that of the typical learner (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

10. Round 1:
Mean: 1.84
Standard Deviation: 0.95
IQR: 1.5

Online gifted students should be provided with summative assessments rather than formative assessments (Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

[NEW] 10A. Online gifted students should be provided with both summative and formative assessments.

1	2	3	4
○	○	○	○

Comments

11. Round 1:
Mean: 2.16
Standard Deviation: 0.91
IQR: 1.25

Assessments for online gifted learners should be tailored for each individual student (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

12. Round 1:
Mean: 2.94
Standard Deviation: 0.97
IQR: 1.25

Assessments for online gifted learners should be flexible (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

13. Round 1:
Mean: 3.41
Standard Deviation: 0.86
IQR: 1

Assessments for online gifted students should contain options other than multiple choice for students to demonstrate their abilities (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comment

→

Section 3: Methods of Instruction

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

14. Round 1:
Mean: 3.09
Standard Deviation: 0.88
IQR: 1

Methods of instruction should be tailored to meet the individual needs of gifted learners (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

15. Round 1:
Mean: 3.38
Standard Deviation: 0.89
IQR: 1

Students should be provided with flexible grouping opportunities in order to interact with peers with similar abilities and/or skills (Loeser, 2018). To clarify, this is a social interaction between students.

1	2	3	4
○	○	○	○

Comments

16. Round 1:
Mean: 3.40
Standard Deviation: 0.88
IQR: 1

Students should be provided with flexible grouping opportunities in order to work with peers with similar skills and abilities (Loeser, 2018). To clarify, this is a content task interaction between students.

1	2	3	4
○	○	○	○

Comments

17. Round 1:
Mean: 3.17
Standard Deviation: 0.93
IQR: 1

Students should be provided with respectful tasks based on readiness (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

1	2	3	4
○	○	○	○

Comments

18. Round 1:
Mean: 2.93
Standard Deviation: 1.00
IQR:v2

Students should be provided with respectful tasks based on interests (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

1	2	3	4
○	○	○	○

Comments

19. Round 1:
Mean: 2.73
Standard Deviation: 1.03
IQR: 1.75

Students should be provided with respectful tasks based on their learning profile (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

1	2	3	4
○	○	○	○

Comments

20. Round 1:
Mean: 3.84
Standard Deviation: 0.36
IQR: 0

Teachers should employ evidence-based strategies to encourage higher level thinking (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

21. Round 1:
Mean: 3.74
Standard Deviation: 0.62
IQR: 0

Teachers should encourage gifted students to go from concrete thinking/analysis to more abstract thinking/analysis (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

22. Round 1:
Mean: 3.72
Standard Deviation: 0.62
IQR: 0

Teachers should encourage creative thinking strategies such as open-mindedness of multiple perspectives (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

23. Round 1:
Mean: 3.72
Standard Deviation: 0.62
IQR: o

Teachers should encourage the application of diverse ideas (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

[NEW] 23A. Teachers should encourage the application of content knowledge to solve problems.

1	2	3	4
○	○	○	○

Comments

24. Round 1:
Mean: 3.88
Standard Deviation: 0.33
IQR: 0

Teachers should encourage elaboration of ideas (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

Section 4: Management

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

25. Round 1:
Mean: 3.47
Standard Deviation: 0.79
IQR: 1

Online gifted learners need to have clearly established rules of conduct (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

[NEW] 25A. Online gifted learners need to have clearly established rules of appropriate interaction with peers in the online platform.

1	2	3	4
○	○	○	○

Comments

[NEW] 25B. Online gifted learners need to have clearly established rules of appropriate interaction with teachers in the online platform

1	2	3	4
○	○	○	○

Comments

26. Round 1:
Mean: 3.63
Standard Deviation: 0.78
IQR: 0.25

Online gifted learners need emotional support (NAGC, 2019).

1	2	3	4
○	○	○	○

Comments

27. Round 1:
Mean: 3.59
Standard Deviation: 0.65
IQR: 1

Online gifted learners need social support (NAGC, 2019).

1	2	3	4
○	○	○	○

Comments

28. Round 1:
Mean: 2.72
Standard Deviation: 0.94
IQR: 1

Online gifted learners should have a role in determining behavioral expectations (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

29. Round 1:
Mean: 2.69
Standard Deviation: 0.95
IQR: 1

Teachers of online gifted students need to closely monitor student behavior (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

29. Round 1:
Mean: 2.69
Standard Deviation: 0.95
IQR: 1

Teachers of online gifted students need to closely monitor student behavior (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

Section 5: Physical Learning Environment

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

30. Round 1:
Mean: 3.19
Standard Deviation: .98
IQR: 2

Online gifted learners' physical environment is an important factor for their success (Morgan, 2014).

1	2	3	4
○	○	○	○

Comments

31. Round 1:
Mean: 3.19
Standard Deviation: 0.88
IQR: 1

Online gifted learners will need to work in an environment that is conducive to learning which is dependent on the individual student's preferences (Loeser, 2019).

1	2	3	4
○	○	○	○

Comments

[NEW] 31A. Online gifted learners need guidance to determine what is an environment that is conducive to learning.

1	2	3	4
○	○	○	○

Comments

32. Round 1:
Mean: 3.57
Standard Deviation: 0.72
IQR: 1

Online gifted learners will to work in an environment conducive to learning which is dependent on the individual student's needs (Loeser, 2019).

1	2	3	5
○	○	○	○

Comments

33. Round 1:
Mean: 2.34
Standard Deviation: 1.03
IQR: 1

Varied lighting will be an important factor for the online gifted student (Seaver, 2019). To clarify, varied lighting refers to the brightness in the room.

1	2	3	4
○	○	○	○

Comments

Appendix I: Reminder Email to Complete Round 1 Instrument

Hello [Insert Name],

Thank you again for volunteering to participate in this Delphi Student to provide strategies for teachers of online gifted students. I would like to encourage to you please complete the Round 1 instrument as soon as you are able. Your input is invaluable for this study and for helping to provide other online teachers of online gifted students with some strategies they can implement for helping to ensure the needs of their students are being met. Here is the link to that instrument: Round 1 Delphi Instrument.

I'll look forward to seeing your completed instrument and your insights.

Regards,

Joy

Appendix J: Email With Link to Round 3

Hello Esteemed Experts,

It is with great pleasure I am able to announce the beginning of the third and final round of our study. Here is the link to the Round 3 instrument: Nehr Round 3.

There are no new statements in Round 3. The incredible comments you provided in Round 2 did not result in a need to add in any new strategies. The results from Round 2 are attached. At this point, we have achieved consensus for most of the strategies. You will, likely, find the Round 3 instrument much easier and faster to complete as a result.

We will begin Round 3 on Wednesday, June 15 and will conclude the round on Monday, June 20. After that time, I will compile the final results which will be shared with you upon completion of this task.

I cannot express how very grateful I am for your participation in this study. You have provided a wealth of information on how online teachers should be differentiating curriculum and interacting with their online gifted students. Thank you so much for all of your hard work in this study.

Cheers,

Joy

Appendix K: Concluding Email

Hello,

Thank you for participating in this research study which aims to provide online teachers of gifted students strategies to implement to meet the needs of this unique population.

Your input has been invaluable and is greatly appreciated.

Final results for the research will be made available upon completion of the calculations and analysis.

Regards,

Joy Nehr

Appendix L: Note to Post to the Forums Section of Aurora Learning and NAGC

Hello Fellow [Aurora Institute/NAGC] Members,

I am conducting a research study seeking 3–5 strategies for differentiating the curricula for online gifted students from a panel of experts in the fields of gifted and online education. If you are a certified gifted education teacher with at least three years of experience working with gifted learners in an online program, I would greatly appreciate your insights and input to this study.

If you are interested in participating and feel you meet the criteria of an expert in this endeavor, please contact me at XXX@waldenu.edu. I look forward to hearing from you soon.

Regards,

Joy Nehr

Appendix M: Email to Gifted Education Program Director

Hello [Insert Name],

I am conducting a research study seeking 3–5 strategies for differentiating the curricula for online gifted students from a panel of experts in the fields of gifted and online education. The criteria for an expert in this study is an educator who is certified in gifted education with at least three years of experience working with gifted learners in an online program. If you have any faculty members on your staff who would be willing and interested in participating, please share my contact information with them: XXX@waldenu.edu.

I greatly appreciate your assistance in this matter and look forward to hearing from you and/or your faculty member(s) as soon as possible.

Regards,

Joy Nehr

Appendix N: Script for Following-Up on Email to CTD Director

Hello [insert director name],

I'm Joy Nehr. I'm a doctoral candidate at Walden University. How are you today? Do you have a few minutes to talk with me? I believe you can help me with my final study on determining the best strategies for online teachers to implement when differentiating the curriculum for their online gifted students. I send you an email on [insert date] regarding this topic. Were you able to read through that?

What questions do you have for me regarding this study? What information do you need from me to be able to send the note (Appendix A) to your faculty?

Thank you for your time and assistance. It's greatly appreciated. Please don't hesitate to contact me if you have further questions.

Have a great day! Bye.

Appendix O: Script for Calling a CTD Director to Get Permission to Send Email to Share With Faculty

Hi [insert name of director],

My name is Joy Nehr. I'm a doctoral candidate at Walden University and am working on the final study for my dissertation. I believe you may be able to help me with this process. Do you have a few moments to talk with me about this right now?

I'm conducting a Delphi study in which I need a panel of gifted education experts who have at least five years of online teaching experience working with online gifted learners. Because your program is an online program I believe many of your faculty would qualify as experts for this study. I am hoping you'll be willing to send an email to your teachers that explains what the study is, the purpose, and invites them to participate in the study. Participation is strictly voluntary and teachers can withdraw from the study at any time. This study is not tied to your organization nor affiliated or endorsed by the organization is any capacity.

Panelists will rate a series of strategies that have been determined through my research and will rate the strategies according to whether the teachers feel the strategy is necessary to implement or not necessary. Teachers will also be provided an opportunity to provide further suggestions for strategies they feel should be added to the list.

Would you be willing to send an email note prepared by me and approved by the Walden University's IRB to your teachers? (If no): What other steps or information do you need from me in order to be able to send out this note?

Thank you very much for taking the time to speak with me. Have a great day!

Bye.

Appendix P: Round 1 Concluding Email

Hello Incredible Experts!

Thank you all so much for completing the round 1 instrument in such a timely manner and with so many suggestions and feedback. I am absolutely blown-away by your input and ideas.

I am working to compile the results and create the round 2 instrument to send back to you. In round 2, you will see the percentages for each question so you can see what the other experts felt were necessary strategies to implement with the online gifted student. You will also see some new strategies included based on your comments. You will, again, have the chance to provide further clarification/feedback where needed. I will also revise the instrument's original rating stems to make those much more clear and understandable.

I will do my very best to get everything compiled, tweaked, approved and returned to you for round 2, asap.

Have a phenomenal weekend!

Cheers,

Joy

Appendix Q: Email With Link to Round 2

Dear Panelists,

Thank you again for your participation in Round 1 of this Delphi study. Your comments and input have been phenomenal. This work would not be possible without you.

Here is the link for the Round 2 instrument: Delphi Study Round 2. I have also attached a summary of the results of the Round 1 instrument with your commentary and feedback. I have used those notes to compile the Round 2 instrument. You will see that the original questions are now prefaced with the mean. Having this information will enable you to compare your original rating with the other panelists' results. Eight new questions have been added, per your commentary, and are noted with [NEW]. A few of the original questions have a clarification statement added to reduce the ambiguity, again, as pointed out by your commentary.

Please try to complete the Round 2 instrument by Wednesday, June 8. I know this is a short turn-around, but Rounds 2 and 3 shouldn't take you nearly as much time to complete because you most likely have far fewer comments. However, if you would like more time, just let me know. At that time, I will, again, work to compile your results as quickly as I'm able.

I look forward to seeing the results of this 2nd round. Please don't hesitate to contact me if you have any questions.

Cheers,

Appendix R: Round 2 Concluding Email

Hello Panelists,

Thank you so much for taking time to complete the Round 2 instrument. You have been just amazing for participating in both rounds so far! I'm looking forward to compiling the results and seeing where we are in this process.

I will do my best to compile the results and get approval for Round 3 as quickly as I'm able.

Thank you, again, for your time and dedication!

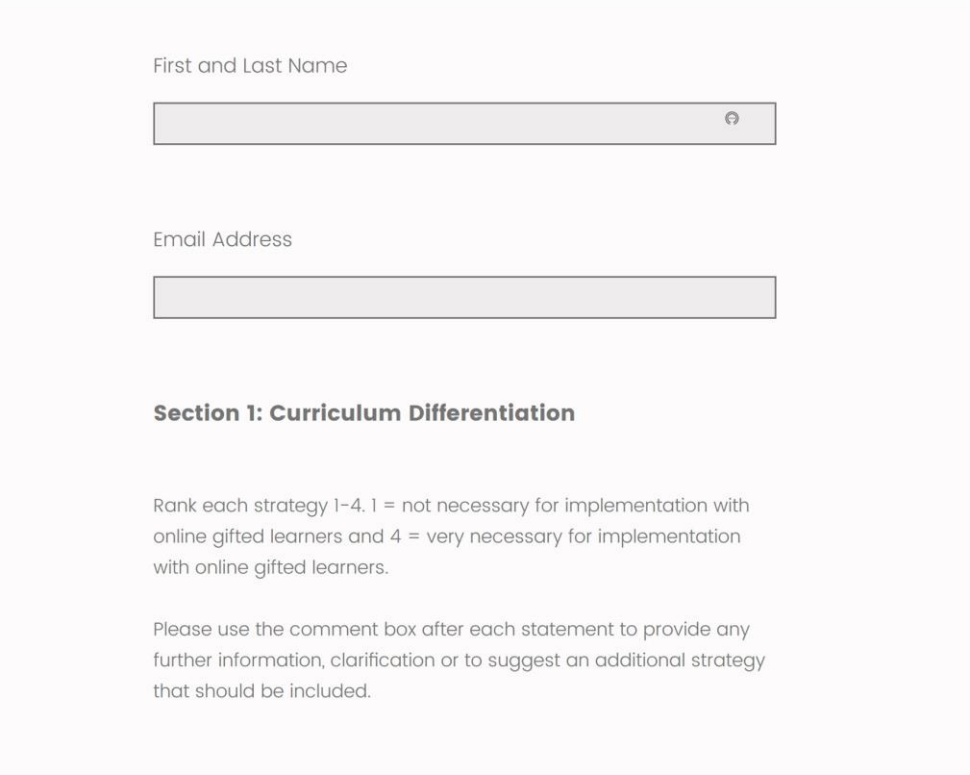
Cheers,

Joy

Appendix S: Round 3 Delphi Instrument (Screenshots)

Link to Round 3 Instrument:

https://uarizona.co1.qualtrics.com/jfe/form/SV_3lWTKRdV0KRoDhs



First and Last Name

Email Address

Section 1: Curriculum Differentiation

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

1. Round 2:
Mean: 3.26

Curricula should be modified for gifted students so it is different from that of regular students (Ward, 1986; Tomlinson, 2014; NAGC, 2021).

1	2	3	4
○	○	○	○

Comment

1A. Round 2:
Mean: 3.70

[NEW] 1A. Curricula should be modified to be different but should not result in more work to be completed than that of regular students.

1	2	3	4
○	○	○	○

Comment

1B. Round 2:
Mean: 3.85

[NEW] 1B. Curricula should be modified to allow gifted students to develop greater depth and breadth of a subject.

1	2	3	4
○	○	○	○

Comments

2. Round 2:
Mean: 3.63

Online gifted learners should be provided with opportunities for curriculum compacting when appropriate (Ward, 1986; Tomlinson, 2014; NAGC, 2021).

1	2	3	4
○	○	○	○

Comments

3. Round 2:
Mean: 2.89

Online gifted teachers should use pre-assessments to determine the online gifted learners' needs for each concept taught to ensure material is appropriately challenging (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

3A. Round 2:
Mean: 3.52

[NEW] 3A. Pre-assessments should be varied in format, not just multiple choice.

1	2	3	4
○	○	○	○

Comments

3B. Round 2:
Mean: 2.65

[NEW] 3B. Pre-assessments should be used for specific concepts only.

1	2	3	4
○	○	○	○

Comments

4. Round 2:
Mean: 3.52

Online gifted students should be allowed flexibility in the curricula (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

4A. Round 2:
Mean: 3.67

[NEW] 4A. Flexibility must allow students to demonstrate mastery of the requisite standards.

1	2	3	4
○	○	○	○

Comments

5. Round 2:
Mean: 3.41

Online gifted students should be provided with alternate projects/assignments when appropriate (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

6. Round 2:
Mean: 3.26

Online gifted students should be provided with multiple project options to enable them to select a project that appeals to them (Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

7. Round 2:
Mean: 3.19

Online gifted students should be provided with the opportunity to design their own projects (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

8. Round 2:
Mean: 3.41

Online gifted students should be given the opportunity to accelerate the pacing of their courses (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

8A. Round 2:
Mean: 3.52

[NEW] 8A. Online gifted students should be given the opportunity to accelerate the pacing of their courses based on mastery of standard(s).

1	2	3	4
○	○	○	○

Comments

Section 2: Assessment

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

9. Round 2:
Mean: 2.23

Gifted students' knowledge and skills should be assessed through different methods than that of the typical learner (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

10. Round 2:
Mean: 1.73

Online gifted students should be provided with summative assessments rather than formative assessments (Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

10A. Round 2:
Mean: 3.73

[NEW] 10A. Online gifted students should be provided with both summative and formative assessments.

1	2	3	4
○	○	○	○

Comments

11. Round :
Mean: 1.93

Assessments for online gifted learners should be tailored for each individual student (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

12. Round :
Mean: 2.89

Assessments for online gifted learners should be flexible (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comments

13. Round :
Mean: 3.63

Assessments for online gifted students should contain options other than multiple choice for students to demonstrate their abilities (Ward, 1986; Gagne, 2009; Tomlinson, 2014).

1	2	3	4
○	○	○	○

Comment

Section 3: Methods of Instruction

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

14. Round :
Mean: 3.07

Methods of instruction should be tailored to meet the individual needs of gifted learners (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

15. Round 2:
Mean: 3.41

Students should be provided with flexible grouping opportunities in order to interact with peers with similar abilities and/or skills (Loeser, 2018). To clarify, this is a social interaction between students.

1	2	3	4
○	○	○	○

Comments

16. Round 2:
Mean: 3.37

Students should be provided with flexible grouping opportunities in order to work with peers with similar skills and abilities (Loeser, 2018). To clarify, this is a content task interaction between students.

1	2	3	4
○	○	○	○

Comments

17. Round 2:
Mean: 3.23

Students should be provided with respectful tasks based on readiness (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

1	2	3	4
○	○	○	○

Comments

18. Round 2:
Mean: 3.23

Students should be provided with respectful tasks based on interests (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

1	2	3	4
○	○	○	○

Comments

Mean: 3.00

Students should be provided with respectful tasks based on their learning profile (Tomlinson & Strickland, 2005). To clarify, respectful means as the tasks relate to age and grade.

1	2	3	4
○	○	○	○

Comments

20. Round 2:
Mean: 3.92

Teachers should employ evidence-based strategies to encourage higher level thinking (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

21. Round 2:
Mean: 3.73

Teachers should encourage gifted students to go from concrete thinking/analysis to more abstract thinking/analysis (Tomlinson & Strickland, 2005).

1	2	3	4
○	○	○	○

Comments

22. Round 2:
Mean: 3.85

Teachers should encourage creative thinking strategies such as open-mindedness of multiple perspectives (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

23. Round 2:
Mean: 3.70

Teachers should encourage the application of diverse ideas (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

23A. Round 2:
Mean: 3.78

[NEW] 23A. Teachers should encourage the application of content knowledge to solve problems.

1	2	3	4
○	○	○	○

Comments

24. Round 2:
Mean: 3.85

Teachers should encourage elaboration of ideas (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

Section 4: Management

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

25. Round 2:
Mean: 3.70

Online gifted learners need to have clearly established rules of conduct (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

25A. Round 2:
Mean: 3.78

[NEW] 25A. Online gifted learners need to have clearly established rules of appropriate interaction with peers in the online platform.

1	2	3	4
○	○	○	○

Comments

25B. Round 2:
Mean: 3.63

[NEW] 25B. Online gifted learners need to have clearly established rules of appropriate interaction with teachers in the online platform

1	2	3	4
○	○	○	○

Comments

26. Round 2:
Mean: 3.63

Online gifted learners need emotional support (NAGC, 2019).

1	2	3	4
○	○	○	○

Comments

27. Round 2:
Mean: 3.63

Online gifted learners need social support (NAGC, 2019).

1	2	3	4
○	○	○	○

Comments

28. Round 2:
Mean: 2.67

Online gifted learners should have a role in determining behavioral expectations (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

29. Round 2:
Mean: 2.85

Teachers of online gifted students need to closely monitor student behavior (Loeser, 2018).

1	2	3	4
○	○	○	○

Comments

Section 5: Physical Learning Environment

Rank each strategy 1-4. 1 = not necessary for implementation with online gifted learners and 4 = very necessary for implementation with online gifted learners.

Please use the comment box after each statement to provide any further information, clarification or to suggest an additional strategy that should be included.

30. Round 2:
Mean: 3.41

Online gifted learners' physical environment is an important factor for their success (Morgan, 2014).

1	2	3	4
○	○	○	○

Comments

31. Round 2:
Mean: 3.26

Online gifted learners will need to work in an environment that is conducive to learning which is dependent on the individual student's preferences (Loeser, 2019).

1	2	3	4
○	○	○	○

Comments

31A. Round 2:
Mean: 3.41

[NEW] 31A. Online gifted learners need guidance to determine what is an environment that is conducive to learning.

1	2	3	4
○	○	○	○

Comments

32. Round 2:
Mean: 3.48

Online gifted learners will to work in an environment conducive to learning which is dependent on the individual student's needs (Loeser, 2019).

1	2	3	5
○	○	○	○

Comments

33. Round 2:
Mean: 2.63

Varied lighting will be an important factor for the online gifted student (Seaver, 2019). To clarify, varied lighting refers to the brightness in the room.

1	2	3	4
○	○	○	○

Comments