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What's in Your Gifted Education Online Teacher Professional Development? Incorporating Theory- and Practice-Based Elements of Instructional Learning Design

Matthew J. Edinger
University of Richmond, medinger@richmond.edu

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The University of Richmond

Author Note

Matthew J. Edinger, School of Professional and Continuing Studies, University of Richmond.

Correspondence concerning this article should be addressed to Matthew J. Edinger, School of

Professional and Continuing Studies, 28 Westhampton Way, University of Richmond, VA

23173. Email: medinger@richmond.edu

Abstract

This paper examined six theory- and practice-based elements of instructional learning design in online teacher professional development (oTPD), how these elements were implemented into Edinger's (2017) PACKaGE model of gifted education oTPD, and how teachers evaluated each element. Elements were based on Berge's (1995) instructor roles model theory and gifted education research. Each element was evaluated by teachers (N=184) who completed oTPD designed from the PACKaGE model. Self-report survey findings suggest that teachers considered most elements, such as asynchronous discussion board and article review assignments, to be useful to a great extent to their gifted education learning and pedagogy. However, teachers reported less usefulness for the online group project element. This finding directly contrasts with researchers' suggestions for oTPD. These findings may encourage teachers to choose theory- and research-based oTPD. PD designers can investigate and implement oTPD elements that satisfy instructional design model needs for optimal teacher learning and gifted education pedagogy.

What's in Your Gifted Education Online Teacher Professional Development?

Incorporating Theory- and Practice-Based Elements of Instructional Learning Design

The National Education Association (NEA), a U.S. interest group that advocates for educational professionals, suggests that online courses provide "a powerful way to enhance teachers' opportunities for quality professional development. Some teachers will take online courses or modules to fill in the gaps in their certification requirements; others to address key topics for their continuing growth" (n.d., pg. 6). Online teacher professional development (oTPD) for gifted and talented education is growing at a substantial rate. A spring 2020 search on a popular search engine, using the key words 'online gifted education course', revealed over 100 courses for the online study of gifted and talented education. Beyond 'filling in gaps' and 'addressing key concepts', teachers participating in oTPD may find opportunities to increase their knowledge of theory, research, and best practices for the education of students identified as gifted and talented. However, with the abundance of online courses found on the Internet, teachers need to know which oTPD elements found within courses are most conducive for optimal learning. Certainly, completing oTPD in gifted education can prepare educators to work effectively with academically advanced, twice exceptional, and colleagues within teaching, administrative, and instructional design roles, but how can teachers in need of gifted education oTPD decide which courses are worth their time, energy, and money?

Before teachers chose, they should be aware that appropriate oTPD for gifted education includes suitable practice-based (Ball & Cohen, 1999) and theory-based elements (Cercone, 2008; Khalil & Elkhider, 2016; Tempelman-Kluit, 2006) of instructional learning design. Additionally, oTPD should follow standards (Little & Housand, 2011), such as those offered by the National Association for Gifted Children (NAGC) and the Council for Exceptional Children

(CEC). The NAGC and CEC (2013) standards suggest that teachers should "participate in professional development that is sustained over time . . . that seeks evidence of impact on teacher practice and . . . use[s] . . . modes of professional development delivery including online courses" (p. 8). Furthermore, after conducting a review of online learning and pedagogical research, Tallent-Runnels et al. (2006) challenged designers of oTPD to create professional development (PD) in accordance with sound educational theories and further investigate the features of online learning that can most benefit learners. It makes sense that teachers, Gifted Education Coordinators, and Directors of PD should seek out oTPD for gifted education that has been created with online learning theory and instructional learning design from gifted education's PD best practices.

Unfortunately, there is a lack of research that supports any type of online models of teaching and learning design for gifted education oTPD. Edinger's (2017) empirical study of the PACKaGE Model of oTPD for Gifted Education was the first model to include features of both online learning theory and gifted education's PD best practice research within its instructional learning design. Other online PD models for teachers, such as the Sharable Content Object Reference Model (SCORM, 2019) and the Holmes et al. (2011) distance learning model exist, but they do not appear to have been designed with educational theories and are potentially less conducive for optimal teacher learning.

A 2017 pilot study found that the PACKaGE Model of oTPD for Gifted Education encouraged positive pedagogical change within gifted education teachers' practice, attitude, collaboration, content knowledge, and goal effectiveness (Edinger). Beginning in 2008, the PACKaGE model was used to design six oTPD courses in gifted education with topics including gifted education perspectives, curriculum, social/emotional needs, differentiation, special

populations, and an introduction to the gifted education field. Completion of four oTPD courses allowed teachers to earn an endorsement in gifted education that was recognized by the state's Department of Education. Each oTPD was offered in 8- or 15-week long sessions and led by the same instructor who had a PhD in gifted education.

To create the PACKaGE model, pedagogical design features from gifted education's teacher professional development (TPD) literature were selected. The design focused on gifted education teachers' practice (P) from Dettmer (1998), attitude (A) from Little and Housand (2011), collaboration (C) from Dettmer (1986), content knowledge (K) from Smith-Westberry and Job (1986), and goal effectiveness (aGE) from Little and Housand (2011). The model was based in learning theory, specifically the HPL (how people learn) theory from Harris et al. (2002).

Additionally, the specific learning design elements within the PACKaGE model, such as the use of think time, asynchronous discussion boards, article review assignments, individual culminating assignments, gifted education standards, and online group projects, were chosen from a variety of gifted education's TPD literature, as seen in Table 1 (page 32). These model elements were chosen because they seem to be theoretically based in online learning theory, specifically Berge's (1995) instructor roles model.

To continue the PACKaGE model's progression toward wider adoption, the strength of its theory- and practice-based elements of instructional learning design should be examined for their usefulness to teachers' online learning of gifted education pedagogy. Powell and Bodur (2018) state that "Usefulness is key in online learning because the experience should have value by helping to meet the needs of adult learners and their students" (p. 21). Therefore, this paper examined theory- and practice-based elements of instructional learning design, how these

elements were implemented into the PACKaGE model, and how teachers evaluated the elements

after they experienced them within oTPD via the PACKaGE model.

Instructional Learning Design

Researchers in the field of gifted education have examined many facets of online learning

through literature reviews and empirical studies. These facets include the principles and

development of gifted education oTPD (Hull et al., 2000), oTPD best practice for teachers of

gifted education (Siegle, 2002), the curriculum and active engagement in appropriate oTPD for

gifted education (Little & Housand, 2011), and the applicability and accountability of oTPD for

gifted education teachers (Eriksson et al., 2012). As mentioned above, Edinger (2017) developed

and evaluated the PACKaGE model, a theoretical model of oTPD for gifted education.

Establishing an appropriate instructional learning design such as was used within the

PACKaGE model may provide multiple benefits for gifted education teachers participating in

oTPD. First, using gifted education theory- and research-based elements creates a framework for

participating teachers that is specific to their field of study. Second, an instructional learning

design may provide common language and communication tools for participating teachers. These

benefits are important when establishing gifted education instructional design. Siegle's (2002)

literature review noted that "An interactive online course develops a community of learners

where students often get to know each other better than students do in a campus course" (p. 32).

Third, an instructional learning design may offer valid and reliable structures for creating oTPD

that are grounded in learning theory. For example, in a literature review, Molenda et al. (1996)

theorized that the core structure of a high-quality instructional learning design should include

analysis, design, development, implementation, and evaluation. An evaluation has occurred

within this study while the PACKaGE Model was created with Berge's (1995) instructor roles

model in its design, development, and implementation.

Berge's (1995) Instructor Roles Model Theory

The mid-1990s provided rapid growth period of online education with the arrival of the

Internet and the World Wide Web (Harasim, 2000). During this time, Berge (1995) developed

the instructor roles model that provided a useful framework for understanding design roles for

instructors as they transitioned from face to face classrooms to teaching online. His model

suggested that, when creating online instruction, designer knowledge of the what, how, and

where of the PD's learning objectives and technology should be most important. Specifically,

Berge (1995) believed that pedagogical, social, managerial, and technical roles were needed to

guide the creation of successful online instructional learning environments.

First, Berge (1995) suggested that a pedagogical role for online design should assist the

designer when choosing learning activities. Pedagogy is the method and practice of teaching. He

delineates that online pedagogy should, for example, include the use of questioning and probes

for student responses that focus discussions toward the topic's critical concepts, principles, and

skills.

Next, Berge (1995) proposed that the social role created by the online instructional

learning designer should offer a friendly, community-based virtual learning environment (VLE)

where scholarship is promoted and properly managed. Collins and Berge's (1996) literature

review suggested that "promoting human relationships, developing group cohesiveness,

maintaining the group as a unit, and in other ways helping members to work together in a mutual

cause" (p. 7) is critical to the success of any online learning design.

Also, Berge (1995) suggested that the managerial role of online instructional design should include, for example, organizational, procedural, and administrative tasks that involve setting the online learning agenda. An appropriate agenda may include the objectives of the discussions, the timetable for the PD, and procedural rules. Berge (1995) believed that managing interactions with strong leadership and direction is a prerequisite role when designing online learning.

Finally, Berge (1995) recommended that through the technical role, designers should offer online participants time to become comfortable with the VLE system and software. It could be argued that the ultimate technical goal for instructional designers is to create oTPD that is technologically transparent to teachers. When technological transparency exists, Berge (1995) suggested that online learners may concentrate on oTPD readings, learning activities, and assignments. Thus, it is the combination of the pedagogical, social, managerial, and technical roles that ultimately creates an instructional learning design for an appropriate oTPD environment.

Berge's (1995) instructor roles model was instrumental in the design of the PACKaGE model. For example, cooperative teacher products, as well as provocative gifted education readings and discussion starters were supported by the outline of Berge's (1995) pedagogical role. Also, teacher-friendly schedules, grading requirements, and instructional learning elements that create student participation guidelines were backed by Berge's (1995) managerial role of online instructional design. Next, the instructional learning elements of ensuring gifted education teachers were connected to the university's library and creating online/offline teacher requirements were underscored by Berge's (1995) technical role. Finally, the instructional learning elements of creating and including supportive social aspects, such as the discussion

board and collaborative online group projects, were also supported by Berge's (1995) social role. Table 1 (page 32) summarizes Berge's (1995) roles, their connection to elements in the PACKaGE model design, and oTPD/TPD design research from gifted education's empirical, theoretical and review literature.

Berge's (1995) theory was used as a lens to reveal practices recommended by gifted education scholars that have the potential to enhance oTPD. In the following section, the specific instructional design elements from practice that were implemented into the PACKaGE model are described and related back to Berge's (1995) theory.

Instructional Learning Design Elements from Practice in Edinger's (2017) PACKaGE Model of oTPD for Gifted Education

The following section examines gifted education's practice-based elements of instructional learning design as they pertain to the instructional learning design in Edinger's (2017) PACKaGE model. The following oTPD elements, evaluated by teachers for usefulness and increased understanding of elements of instructional learning design for gifted education, are described below. They include the asynchronous discussion board and think time, the article review assignment, the individual culminating assignment, local and national gifted education standards, and the online group project. The section ends with an outline of the oTPD follow-on element. In the survey, teachers were asked to provide suggestions for appropriate oTPD follow-on activities for their personal gifted education learning and pedagogy.

The Asynchronous Discussion Board and Think Time Elements

Discussion boards in an oTPD VLE setting can be synchronous or asynchronous. Synchronous discussions occur at the same time and teachers and the instructor should be available to be online at specific times during the oTPD. On the other hand, asynchronous

discussions occur during a specific time frame and allow teachers to add their thoughts and reflections to the discussion board when they can within the time frame. Siegle (2002) suggested that "a major advantage of asynchronous communication is timing. Participants may attend to class activities when it is convenient for them" (p. 31). Asynchronous discussions offer teachers and the instructor opportunities for deeper reflection on gifted education materials, prompts, and responses or what Siegle (2002) referred to as *think time*. Siegle suggested that the discussion board activity creates opportunity for valuable think time in oTPD "because time usually passes between when participants read material and when they respond, [thus] more reflective thinking occurs" (2002, p. 31). Teachers can respond to gifted education material prompts and other teacher and instructor comments when the time is appropriate for them in asynchronous discussions.

Additionally, in a literature review article, Siegle (2011) suggested that the "instructor can provide provocative articles for participants to read and discuss through electronic discussion boards" (p. 32). In the PACKaGE model, the VLE discussion board can lose its initial freshness and excitement many weeks into the PD. Thought-provoking and highly relevant weekly gifted education readings from peer-reviewed journals, informative websites (Eriksson et al., 2012), case studies, and book chapters written by leading gifted education experts may lessen a lack of focus and retain teacher focus. Siegle (2002) added "Designers can facilitate instruction by posting challenging questions for discussion" (p. 32). Following this recommendation, each discussion board potentially allowed teachers to make connections between the readings and their experience and/or workplace, agree with or dispute the reading based on experience, and delineate how the information within the reading is, can, or should be incorporated into their daily teaching. It was important for the discussion of weekly gifted education readings to

produce takeaway ideas or activities that gifted education teachers may immediately use in their

classroom (Dettmer, 1986; Little & Housand, 2011).

Finally, in the PACKaGE model, the final weekly discussion thread that teachers may

choose to answer was titled 'Miscellaneous' and it prompted teachers to respond to aspects of the

gifted education readings or other online discussions that were not yet discussed. For example,

these aspects usually included an idea, a response, or an observation that caused teachers to have

an Aha! or Uh-oh! thought as they read and reflected on TPD materials. Also, the discussion

board topic was summarized by the instructor or a pre-chosen teacher after the end of each

discussion week and shared with all teachers in the weekly morning PD email. Incidentally, all

discussion boards were kept open and accessible for teachers throughout the length of the gifted

education oTPD.

The Article Review Assignment Element

In the PACKaGE model, teachers were encouraged to search for gifted education

assignment and supplemental materials through online academic databases. The article review

assignment, or "reflection paper" (Siegle, 2011, p. 60), required teachers to find, read, and reflect

on current peer-reviewed, gifted education journal articles that have direct impact to their

individual workplace environments. Teachers usually filled a knowledge gap (Hull et al., 2000)

in their gifted education learning when completing this assignment. When discussing learning

methods, Gibbs (1988) suggested that "it is not sufficient to have an experience in order to learn.

Without reflecting on this experience, it may quickly be forgotten, or its learning potential lost"

(p. 9). The article review assignment may encourage teachers to continue to reflect on and learn

to support their own gifted education learning and pedagogy long after the oTPD has ended.

The Individual Culminating Assignment Element

In a literature review article, Smith-Westberry and Job (1986) suggested that time given for independent study is a valuable element for school district's gifted education inservice and staff development. In the PACKaGE model, teachers were required to complete an individual end-of-PD culminating gifted education topic assignment. For example, teachers were given a choice of course work to create, such as an essay, a slide presentation or an interview with a fellow gifted education educator concerning gifted education topics and objectives. Eriksson et al.'s (2012) guiding principles and strategies for online courses included teacher products that "bridge higher level research that would stimulate advanced study" and turn "critical issues into creative and critical assignment outcomes of relevance to each teacher's context" (p. 50). As an open-ended project, the culminating assignment allowed teachers to tackle gifted education issues that were directly related to their classroom environment and seek authentic, gifted education, literature-based solutions for them. Individual assignments, such as the culminating activity, were used in the PACKaGE model, along with collaborative gifted education teacher scholarship, such as the group project assignment described below.

The Local and National Gifted Education Standards Element

Educational standards should be clear, precise, and based in academic disciplines to create core TPD curriculum. NAGC (2010) Pre-K-Grade 12 Programming Standards and NAGC-CEC (2013) Gifted Education Teacher Preparation Standards were used in the PACKaGE model to offer an examination of gifted education standards at the national level. Additionally, at the state level, online pdfs such as the Virginia Department of Education's Reference Guide for the Development and Review of Local Plans for the Education of the Gifted (2011) and Understanding the Virginia Regulations Governing Educational Services for Gifted Students (2012) were also used as well as school district and other websites (Eriksson et al.,

2012). Little and Housand's (2011) literature review suggested that "standards may serve as the

starting place for considering plans for professional learning" (p. 32) and using gifted education

standards ensured that the PACKaGE model aligned with appropriate PD content and supported

gifted education learning and pedagogy.

The Online Group Project Element

Another instructional learning design element from Siegle (2002) was the idea that

"participants can work on cooperative projects" (p. 32). In the PACKaGE model, teachers

interacted with each other while engaging in weekly gifted education-based discussion board

conversations and collaborating on a gifted education group project assignment. The group

project assignment occurred near the end of the oTPD due to its culminating aspect and it

allowed teachers to manage time within their personal schedules to virtually collaborate with

other teachers to create gifted education oTPD-based products. Teachers collaborated in groups

of five or more for the creation of a culminating ten-slide presentation and a nine-page essay that

focused on pertinent gifted education issues that may have arisen during the oTPD. Groups

communicated through their individual discussion boards and each group's VLE area had

attachment and sharing capabilities for the assignment.

The oTPD Follow-On Element

A TPD element deemed important by many gifted education researchers' literature

reviews (Dettmer, 1986, 1998; Eriksson et al., 2012; Smith-Westberry & Job, 1986; VanTassel-

Baska, 1986) was a follow-on activity. Also known as sustained attention (Little & Housand,

2011), a follow-on activity may occur individually or in groups after the conclusion of the gifted

education oTPD through online, face to face, and hybrid settings. Follow-on activities may offer

continued learning and engagement over a longer duration. Little and Housand (2011) suggested

that teachers "can also return to earlier discussions throughout an implementation period to

revisit key points" (p. 22). Eriksson et al. (2012) suggested that "teachers should design their

own follow-on option based upon their personal professional development needs" (p. 48) and

Dettmer (1986) believed that teachers could "specify the kinds of assistance they would like in

meeting their professional goals for gifted students" (p. 132). School districts can offer specific

gifted education tasks designed as follow-on oTPD activities and ask teachers to express which

follow-on activity may potentially meet their individual gifted education learning needs and/or

workplace goals. Thus, the teachers in this study were the appropriate population to delineate

their own follow-on needs because they completed a gifted education oTPD.

The PACKaGE model did not incorporate follow-on activities due to multiple

constraints. For example, teachers lost electronic connectedness after the completion of the

oTPD once access to the VLE and/or their university email account ended. Additionally, since

teachers did not become alumni, the university did not track non matriculating student contact

information.

Summary

Due to the lack of research that supports online models of teaching and learning design

for gifted education, this paper examined theory- and practice-based elements of instructional

learning design, how these elements were implemented into the PACKaGE model, and how

teachers evaluated the elements as they experienced them within the online PACKaGE model.

This study's research questions are:

RQ1: To what extent do teachers report the usefulness of the instructional learning design

elements used within Edinger's (2017) PACKaGE Model of oTPD for Gifted Education

to their gifted education learning and pedagogy?

RQ2: To what extent do teachers report an increased understanding of the oTPD

instructional learning design element of local and national gifted education standards

used within Edinger's (2017) PACKaGE Model of oTPD for Gifted Education to their

gifted education learning and pedagogy?

RQ3: What do teachers self-report as appropriate oTPD follow-on instructional learning

design element to be added to be used within Edinger's (2017) PACKaGE Model of

oTPD for Gifted Education for their personal gifted education learning and pedagogy?

Methods

Study Participants

Study participants ($N = 184$) were elementary and secondary education teachers in rural,

urban, and suburban school districts in the south-eastern United States who successfully

completed at least one of 48 oTPD courses for gifted education designed by the PACKaGE

model. Each teacher was contacted via email to complete the survey approximately six months

after the PD ended. Email and completion data were provided through university records.

Teachers taught students across subject areas including math, English, art, and library in grade

levels ranging from kindergarten (age 4 years 7 months) to 12th grade (age 18). Successful

completion of an oTPD was defined as earning a summative assessment grade of 83% through

100%. Even though the oTPD program had a total enrollment of 656 from 2008 to 2017, 171

teachers were not able to be surveyed because their emails were returned as invalid or

undeliverable. Therefore, 184 teachers from 485 whose emails were not automatically returned

completed the survey that provided a response rate of 38%. Research of online surveys

demonstrate that response rates from online surveys were generally lower than face-to-face

survey response rates. Nulty (2008) compiled data from multiple research articles, published in

peer-reviewed journals, that used online surveys. These articles had response rates ranging from 20%-47%. A 38% response rate is consistent with the response rates of previously published studies (Fan & Yan, 2010; Fryrear, 2015). Nulty also suggests that multiple methods are available for boosting online survey response rates (2008). These methods include several approaches that were utilized in this research. As outlined in the Methods section above, the survey's Uniform Resource Locator (URL), or specific address on the World Wide Web, was emailed directly to teachers, two follow-up reminder emails were sent, the survey link was sent via email from a personal email, and sharing the results of the study to respondents was offered.

Study participants were 89% female, 91% Caucasian, 4% African American, 1% Hispanic, and 1% Asian. Additionally, 51% of the teachers had earned a master's degree (as highest degree earned), 46% had earned a bachelor's degree and 54% reported teaching identified gifted education students before attending oTPD. For oTPD gifted education courses completed, 35% completed one, 32% completed two, 9% completed three, 18% completed four, and 3.8% of the teachers completed more than four. Teachers who had not earned a gifted and talented teaching endorsement before they completed gifted education oTPD was 62%. The average teacher was 34 years old when she completed her first oTPD and the average years of teaching was 9.67 with more than one year (10%), 1-4 years (20%), 5-12 years (37%), and more than 13 years (33%). The average years of teaching one or more students identified as gifted and talented was 5.01 with more than one year (24%), 1-4 years (41%), 5-12 years (24%), and more than 13 years (11%).

Instrument and Procedure

After the university IRB approved the study, the survey instrument was entered into a secured online survey software. The study used a mixed-methods design and the survey was a

self-report measure that collected teacher data on oTPD instructional learning design elements.

Teachers were sent an email from the instructor's email account and asked to complete an

embedded link to the online survey that included 17 closed- and open-ended questions. Teachers

received the initial request-to-participate email six months after the conclusion of the PD and

were reminded to complete the survey by two additional emails in the following 2 weeks. In a

theoretical article, Desimone (2009) emphasized that research would be more robust with

elapsed time. She believed this elapsed time could determine the retention of the material and

skills more accurately. Next, teachers also were told that the findings of the survey would be

shared with them at the end of the survey collection period if they wanted. The survey questions

were designed specifically for the study based on the above literature review of instructional

learning design elements. The close-ended questions via a 5-anchor Likert-like scale assessed the

extent of teacher-reported usefulness of specific oTPD instructional learning design elements

implemented within the PACKaGE model. For example, teachers were asked to respond to

questions such as, "To what extent were the weekly discussion board assignments useful to your

gifted education learning and pedagogy?" by indicating *very slightly or not at all* (1), *a little* (2),

moderately (3), *to a great extent* (4), or *to a very great extent* (5). Table 4 (page 35) provides a

complete listing of the survey questions, response percentages, and raw scores for the

instructional learning design elements.

     Additionally, to increase content validity, two gifted education content experts were

asked to evaluate the cogency of the survey questions. They independently reviewed a draft of

the survey and offered suitability and validity feedback. Some of the survey questions were

modified based on the feedback and later returned to the content experts for continued

evaluation. This iterative process continued until the content experts and the author were satisfied that the survey was appropriate and valid for the current study.

Data Analysis

The teacher self-report quantitative data from the survey were analyzed to determine inferred values, attitudes, and beliefs the teachers had concerning the extent of usefulness and increased understanding received from oTPD instructional learning design elements for gifted education learning and pedagogy. Analyses of these quantitative data were conducted in SPSS and included descriptive statistics, frequency analysis, bivariate correlations, independent samples, t-tests, and one-way analysis of variance (ANOVA). The outcomes of these analyses are provided in the Results section and Table 2 (page 33).

Within the survey, teachers were asked, "Do you want to add a comment?" after each quantitative question. Analysis of these qualitative data included coding by investigator-generated interpretive themes obtained from the teacher self-report responses to the study's survey questions. The coding conducted in this study followed the guidance of Bryman and Cramer (2009) and Patton (2002), who suggest that researchers should inductively derive a set of coding categories that are comprehensive, offer intra-coder reliability, and are mutually exclusive so a code may only apply to one category. These qualitative data were comprised of open-ended, self-report teacher responses to survey questions rather than derived from interviews or ethnographic work as commonly seen in qualitative work. Consistent with IRB guidelines, responses to these questions were not required from respondents. Thus, the volume of qualitative data was lower, and the number of emergent themes that could be derived was reduced. Given (2008) suggests that emergent themes are a "basic building block of inductive approaches to qualitative social science research and are derived from the lifeworlds of research participants

through the process of coding" (para. 4). After careful analysis and consultation with a second

coder, values coding was utilized. This type of coding attempts to "exhibit the inferred values,

attitudes and beliefs of participants. In doing so, the research may discern patterns in world

views" (Treadwell, 2009, From fieldnotes to 'An ethnographic study of . . . ', para. 7). Themes

from teachers' self-report responses are listed on Table 3 (page 34). The findings from this study

were not derived exclusively from qualitative data. Rather, extracts from these data were used to

complement the quantitative findings in the following Results section.

Results

The survey was designed to measure the extent of usefulness and increased understanding

teachers found in specific online instructional learning design elements six months after the

completion of their oTPD. The descriptive and correlation statistics of teacher responses to the

survey by element are presented in Table 2 (page 33).

Significant correlations were positive and ranged from 0.16 to 0.60. These low to

moderate correlation levels suggested discriminant validity in the survey items which suggests

that each item measures something different. Additionally, the correlational range suggested no

common response bias in the data, which suggests that the survey responses were more truthful

than not. Also, differences across instructors or courses was not controlled. There were no

instructor differences because the same instructor taught all courses. While there are content

differences between the courses, such as a course focused on social/emotion needs versus a

course focused on differentiation, the elements were applied by the single instructor in each

course in the same way.

The self-report, open-ended written responses revealed emergent themes for the

usefulness and increased understanding of elements of instructional learning design for gifted

education. Of the 184 teachers who completed the survey, 27% ($N = 50$) responded to the open-ended section. Brief descriptions of the themes or meanings, called codes, were developed. Similar codes were grouped together to form categories and can be viewed in Table 3 (page 34).

Positive-Themed Responses to the Model

Positive Response to the Model as a category encompassed positive codes of learning situations and climates that shaped the teachers' oTPD learning and pedagogy for gifted education. When asked to add comments to the quantitative survey questions concerning the theory- and practice-based elements, 56% of teachers ($N = 28$) wrote responses such as 'most effective', 'very beneficial', and 'valuable'.

Negative-Themed Responses to the Model

Negative Response to the Model as a category encompassed negative codes of learning situations and climates that shaped the teachers' oTPD learning and pedagogy for gifted education. When asked to add comments to the quantitative survey questions concerning the theory- and practice-based elements, 28% of teachers ($N = 14$) wrote responses such as 'extremely difficult', 'very frustrating', and 'very challenging'. The eight remaining responses were categorized as non-answers or unusable responses. The frequency results of teacher responses to the survey questions by element are presented in Table 4 (page 35) and described in the text below.

Research Question 1 asked, "To what extent do teachers report the usefulness of the instructional learning design elements used within Edinger's (2017) PACKaGE Model of oTPD for Gifted Education to their gifted education learning and pedagogy?" Data analyzed to answer this research question were gathered from survey questions and open-ended responses. In the following section, the specific elements of instruction design are analysed individually.

oTPD Element: Think Time

Table 4 (page 35) shows teacher responses to the survey question related to the think time element. Teachers reported that the think time oTPD element within the discussion board activity was useful to their gifted education learning and pedagogy. Findings show that 41% of teachers responded *to a great extent* and 26% responded *to a very great extent* for a total of 67%, to the question, "To what extent did the online gifted course encourage you to increase your think time, or time taken for reflective thought before responding to a Blackboard prompt?" Additionally, qualitative data suggest that teachers found usefulness for their gifted education learning and pedagogy as a result of the PACKaGE model. Teacher #97 stated, "Reflection was the most effective means of learning through online education" (Survey Response, June 1, 2016). Teacher # 31 wrote:

> I'm trying to be more mindful of Wait Time 1 and Wait Time 2 (1 is waiting longer after posing a question to the class; 2 is waiting longer after a response to the question, thus soliciting more comments from students and deeper thinking). But when I read this question, I realized that I'm guilty of not using the same techniques myself. I read quickly, and I respond quickly. I am going to work on that. (Survey Response, December 1, 2014)

These findings suggest that think time element of oTPD increases teachers' gifted education learning and pedagogical knowledge.

oTPD Element: Asynchronous Discussion Board

Of the 184 teachers who responded, 37% indicated *to a great extent* and 32% responded *to a very great extent*, for a total of 69% to the question, "To what extent was the weekly discussion board assignment activity useful to your gifted education learning and pedagogy?" Table 4 (page 35) also contains teacher responses to the survey question related to the asynchronous discussion board. Qualitative data from teachers offered evidence of the usefulness

to teachers' learning and pedagogy as a result of the PACKaGE model. For example, Teacher

#161 stated:

> Very interesting, and very beneficial to hear from other educators. Whether they
> had similar teaching environments or different, it was good to walk a bit in their
> shoes. I think we educators often get wrapped up in our own experiences and
> realities. It's nice to hear that someone else has the same challenges. Conversely,
> it is interesting to learn that someone else has completely different issues. (Survey
> Response, December 1, 2017)

Additionally, Teacher #121 wrote:

> I felt for those that really took time and wrote some incredible responses to the
> questions ask[ed], the information I took away from this exercise was very
> beneficial. It was great hearing the experiences of others in all facets of education
> from all over the state. (Survey Response, December 1, 2016)

These findings suggest that the asynchronous discussion board element of oTPD is useful

to teachers' gifted education learning and pedagogy.

oTPD Element: Article Review

Table 4 (page 35) contains teacher responses to the survey question related to the article

review element. The survey asked teachers, "To what extent was the article review assignment

useful to your gifted education learning and pedagogy?" The data show that 32% of teachers

indicated *to a great extent* and 35% indicated *to a very great extent*, for a total of 67%. Teacher

#119 stated, "The articles were extremely helpful to my understanding of the needs of gifted

students and the various approaches to gifted education definitely improved my teaching"

(Survey Response, December 1, 2016). Teacher #44 replied, "Really liked this assignment. It

kept me up to date on current topics and trends with gifted education" (Survey Response, June 1,

2015). Finally, Teacher #140 responded, "It is the information from articles that has stayed with

me the most. I enjoyed having access to the library" (Survey Response, June 1, 2017). These

findings suggest that the article review element of oTPD was useful and increases teachers'

gifted education learning and pedagogical knowledge.

oTPD Element: Individual Culminating Assignment

Next, a survey question asked teachers, "To what extent was the individual culminating

assignment useful to your gifted education learning and pedagogy?" The data show that 36% of

teachers indicated *to a great extent* and 27% indicated *to a very great extent*, for a total of 63%.

Table 4 (page 35) contains teacher responses to the survey question related to the individual

culminating assignment. Teacher #89 wrote, "Loved this too. To me, this was putting everything

together we learned about, read about, etc. It gave you perspective on how everything fit

together" (Survey Response, June 1, 2016). Teacher #110 stated, "I have not used the annotated

bibliography I made; however, reviewing all of the articles pushed me to learn/do more and if I

choose to move more into a gifted and talented teacher role I can see myself using it more"

(Survey Response, December 1, 2016). These responses suggest that teachers valued the

synthesizing effect of the oTPD element of individual culminating assignment, and it was,

therefore, useful to their gifted education learning and pedagogy.

oTPD Element: Gifted Education Standards

Research Question 2 asked, "To what extent do teachers report an increased

understanding of the oTPD instructional learning design element of local and national gifted

education standards used within Edinger's (2017) PACKaGE Model of oTPD for Gifted

Education to their gifted education learning and pedagogy?" To answer the question, teachers

were asked, "To what extent did the oTPD create positive change in your knowledge of the

standards that guide curriculum and instruction?" As many as 36% of teachers indicated *to a*

great extent and 14% indicated *to a very great extent* for a total of 50%. Additionally, when

asked, "To what extent did the oTPD create positive change in your knowledge of the National

Association for Gifted Children's Pre-K-Grade 12 Gifted Education Programming Standards?",

34.2% of teachers indicated *to a great extent* and 20.1% indicated *to a very great extent* for a

total of 54.3%. Table 4 (page 35) contains teacher responses to the survey question related to

gifted education standards. Teacher #43 responded, "I knew about my county program but was

interested in learning about national views and programs. I discovered that [my] County is

actually very proactive in gifted learning" (Survey Response, June 1, 2015). Teacher #113 stated,

"I had looked at this a bit, but I am more familiar now" (Survey Response, December 1, 2016).

These findings suggest that the standards element of oTPD offer an increased understanding of

gifted education standards that may increase teachers' gifted education learning and pedagogical

knowledge.

oTPD Element: Online Group Project

The survey asked teachers to respond to the question, "To what extent was the Group

Project assignment useful to your gifted education learning and pedagogy?" Only 124 teachers

responded to this question indicating a 25% response rate, 15% responded useful *to a great*

extent and 9% responded useful *to a very great extent.* Table 4 (page 35) contains teacher

responses to the survey question related to online group project. Teacher #144 stated:

> I HATED this! I felt [th]is was a lot more stressful than worthwhile. It would be
> different if I was presently a full time college student. However, as a full time
> teacher I felt that I did not need to learn how to work in a group. I was very
> frustrated by those that did not give their all and I had to fix their work because
> they did not present their best. I only had one [PD] out of three with a group
> project and hope I do not get any more. (Survey Response, June 1, 2017)

Additionally, Teacher #24 stated:

> I found the group project to be very challenging online. Most people were taking
> online classes because it allowed them to complete their work on their time. When
> it came to group projects online, it was very difficult to hold everyone

accountable and to be available when others needed you to be. (Survey Response, December 1, 2014)

Finally, Teacher #165 responded:

After this project, I prefer not to be assigned to a group. I would rather pick my own team to work with next time. I don't like getting stuck with slackers who don't contribute. This process did help me to sympathize with my students who complain about teacher chosen groups. I can wholeheartedly relate to some of the dilemmas they face doing group work as well. I don't think a group project is fair for one, or even two people to take on a majority of the workload. This group project stressed me out to a degree that I was not comfortable with, and I did not enjoy it. (Survey Response, December 1, 2017)

However, teachers also offered positive reflections for the online group project element.

Teacher #167 responded, "I was very skeptical [sic] about how an online group project would work, but the organization made the assignment approachable and successful. I now use the same group grading survey that [the instructor] provided" (Survey Response, December 1, 2017). Teacher #51 wrote, "It taught me what things to consider when I'm assigning group work and how flexible I need to be when putting students together who may not be familiar with one another" (Survey Response, June 1, 2015). These findings suggest that the online group project element of oTPD might need modification to positively increase teachers' gifted education learning and pedagogical knowledge.

oTPD Element: Follow-on Activities

Research Question 3 asked, "What do teachers self-report as appropriate oTPD follow-on instructional learning design element to be added to be used within Edinger's (2017) PACKaGE Model of oTPD for Gifted Education for their personal gifted education learning and pedagogy?" Therefore, the survey posed the following open-ended question, "After the completion of an online course, what type of follow-on activity, either through the University or elsewhere, would be appropriate for your continued gifted education professional development?" Responses

indicate 20% of teachers ($N = 184$) reported conferences/workshops for gifted education, 16%

listed in school practice-related activities, 15% offered some type of continued online group

presence, and 14% suggested a social network group (Table 5 page 36). Teacher #102 stated:

> Sending out updated research (like journal articles) or best practices in gifted
> education, or perhaps having an Edmondo [sic] or Facebook group dedicated to
> teachers where they can share ideas and tips for teaching gifted students. (Survey
> Response, December 1, 2016)

> Teacher #127 replied that he or she would like "The opportunity to engage in follow-up

online discussions with classmates during the school year about how their applications of the

acquired gifted content has progressed in their classrooms" (Survey Response, December 1,

2016). Teacher #148 stated:

> It would be nice to have seminars that discuss current gifted trends in education.
> Being at a school where there are very few identified gifted students, there is very
> little access to that sort of information. When teaching exceptionally low students,
> you find that all of your time is spent trying to have students pass standardized
> tests. It would be nice to have readily available access to current events in gifted
> education so that when I do apply to a gifted position, I am up to date on said
> trends. (Survey Response, June 1, 2017)

> The number and breadth of teacher responses suggest that the follow-on activity oTPD

element may be a positive way to promote continued learning and pedagogical knowledge after

the end of the oTPD. Details of these results are in Table 5 (page 36).

Demographic Analysis

Additional quantitative analyses were conducted post hoc to determine how the

demographics of the teacher sample related to the elements of instructional learning design. The

relationship between age, gender, ethnicity, highest degree level completed, years teaching gifted

education students, years teaching overall, number of prior oTPD courses taken were tested

against whether oTPD teachers held a gifted education teaching endorsement. The following

significant relationships were revealed.

Independent samples t-tests revealed that teachers with a gifted education teaching endorsement found the article review assignment to be more useful ($M = 4.28$, $SD = .86$) to their gifted education learning and pedagogy than the teachers without a gifted education teaching endorsement ($M = 3.77$, $SD = .99$), $t(182) = -3.49$, $p = 0.00$. The t-test also revealed that teachers with a gifted education teaching endorsement found the culminating assignment to be more useful ($M = 4.20$, $SD = .99$) to their gifted education learning and pedagogy than the teachers without a gifted education teaching endorsement ($M = 3.86$, $SD = 1.01$), $t(182) = -2.12$, $p = 0.04$. Teachers with a gifted education endorsement may have felt they received more value in the learning design elements due to their experience with gifted education PD. These educators may have realized the value of searching for and finding peer-reviewed articles that may fill a gap in their gifted education knowledge. The article review and culminating assignment elements may also offer more opportunities for creativity than other elements because teachers have choice to choose their own final product.

A one-way ANOVA found a statistically significant difference between teacher groups based on the number of prior oTPD courses taken, $F(4, 179) = 1.13$, $p = .003$. A Tukey post hoc test revealed that teachers who completed additional oTPD courses experienced more positive change in their knowledge of the standards that guide gifted education curriculum and instruction. Specifically, teachers completing two ($M = 3.55$, $SD = .89$), three ($M = 3.88$, $SD = .99$), or four ($M = 3.59$, $SD = 1.02$) courses reported significantly more change in their gifted education knowledge than those taking one ($M = 3.03$, $SD = 1.07$) oTPD course. There were no significant differences between those taking two and three courses, two and four courses, or three and four courses. Also, once teachers master classroom and lesson planning needs, they might find more value in the local and national gifted education element. The use of standards may

begin to play a larger role in teachers' experience as it grows over time. Teachers who are highly inexperienced in gifted education oTPD may not be ready to work closely with and absorb gifted education standards.

Finally, correlations between the continuous demographic variables and the instructional learning design elements were investigated. First, interesting associations were revealed between age and the elements. As teachers' age increased, their assessment of the usefulness of the article review assignment ($r = 0.29$) and the discussion board assignment ($r = 0.23$) increased. Also, as teachers' age increased, their assessment of their change in knowledge regarding both local ($r = 0.17$) and national ($r = 0.17$) gifted education standards increased. Second, associations between years of teaching experience and the elements were found. As years teaching gifted education students increased, the teachers' assessment of their change in knowledge regarding local and national gifted education standards decreased ($r = -0.16$). Also, as years of teaching overall increased, teachers' assessment of the usefulness of the article review element increased ($r = 0.17$). Some of these findings parallel the findings described in the previous two sections. Uniquely, older-aged teachers found more value in working creatively and in collaborating with others than their younger-aged colleagues. Older teachers may use the discussion board element to discuss and find new approaches to problems that may strengthen their learning and pedagogy. Also, teachers with more years of teaching gifted education students reported less change in their knowledge of gifted education standards than did teachers with fewer years teaching gifted education students. These reports may be due to highly experienced teachers of identified gifted education students having more knowledge of the standards when starting the oTPD.

Discussion

This paper examined theory- and practice-based elements of instructional learning design, how these elements were implemented into the PACKaGE Model of oTPD for Gifted Education, and how teachers evaluated the elements as they experienced them within the online PACKaGE model. With the exception of the survey question concerning the online group project element, the majority of teachers reported a usefulness *to a great extent* to their gifted education learning and pedagogy as a result of participating in the PACKaGE model. These results suggest that the majority of PACKaGE model elements are useful and therefore increase teachers' gifted education learning and pedagogy. Qualitative evidence from the teacher participants offered additional support for the quantitative survey findings. Surprisingly, the results provided evidence that the online group project element offered less usefulness to teachers' learning and pedagogy than the other learning design elements.

Theoretical Implications

Advanced standards in gifted education teacher preparation (NAGC & CEC, 2013) encourage teachers to take part in online PD that evaluates its impact on teachers' practice. However, Tallent-Runnels et al. (2006) suggested that, after a review of the online learning and pedagogical literature, integrating and assessing appropriate educational theories and features of instructional learning design is needed to generate student benefits from online learning and pedagogy.

Berge's (1995) instructor roles model of online instruction defined the pedagogical, managerial, technical, and social roles needed for online learning and pedagogy. Additionally, TPD and oTPD research from literature reviews and empirical studies suggest that defined specific elements of learning design (Dettmer, 1986; Eriksson et al., 2012; Hull et al., 2000; Kaplan, 1986; Little & Housand, 2011; Siegle, 2002; Smith-Westberry & Job, 1986; VanTassel-

Baska, 1986) may be supported by Berge's (1995) theory. Because the results of this study

suggest that many of the PACKaGE model's instruction learning design elements are appropriate

for gifted education oTPD, the theoretical connection between Berge and gifted education

researchers' best practices form a solid foundation on which teachers seeking gifted education

PD can rely and future designers may build. Therefore, the use of selected elements of

instructional learning design within the PACKaGE model, found in Table 1 (page 32), may

provide teachers, schools, and universities with theory- and research-based guidance for suitable

oTPD. Teachers seeking appropriate oTPD for gifted education may choose a model that has not

been available previously. Additionally, beginner and expert instructional designers can follow

an online design process that shows positive effects on its learners.

Practical Implications

The findings from the study's data offer many practical implications for oTPD gifted

education (Table 5 page 36). First, teachers can use the findings to search for appropriate gifted

education oTPD. The findings support the use of a theoretical framework and research-based

elements in the oTPD's learning design. Teachers can search for and attend oTPD that

incorporates research- and best practice-based elements like those listed in Table 1 (page 32).

Second, beginner and expert designers of oTPD for gifted education can use the online learning

design roles created by Berge (1995) and the evaluated learning design elements found in the

PACKaGE model as a template for their own online teaching model designs. Third,

administrators and PD leaders within school districts can encourage their teachers to participate

in oTPD that has been designed with theory- and research-based best practices for online

learning design. Fourth, the extent of teacher usefulness found when using the learning design

elements within Edinger's (2017) PACKaGE model suggests that it may increase oTPD model effectiveness.

Teachers in this study identified follow-on activities that may provide guidance for oTPD designers and school administrators to encourage continued development of such courses. oTPD designers and school administration may be encouraged by the study's findings to offer support for gifted education oTPD and create workplace-appropriate follow-on activities for their teachers. It is interesting to note that the teachers' first preference was a 'Conference / Workshop for Gifted Education' and the second choice was 'In school practice-related activities such as application, observation, curriculum development, and assessment'. It could be argued that it makes sense how more face to face follow-on activities were listed by teachers after the completion of an oTPD. After discussing gifted education topics in a completely online environment, it seems natural that teachers would want to connect in person to observe gifted education lessons, network, and build relationships.

Finally, the low percentage of *to a great extent* and *to a very great extent* responses to the online group project element suggests that the assignment should be modified. In a perfect world, this element should create a solid opportunity for learning within the online environment since collaborative projects were strongly proposed by researchers for online gifted education TPD (Eriksson et al., 2012; Hull et al., 2000; Little & Housand, 2011; Siegle, 2002). Perhaps teachers did not enjoy relying on other teachers to complete online tasks. Communication in a virtual space may be challenging, so it makes sense that teachers may not want to rely on peers that do not return emails or respond to discussion board posts in a timely manner. Also, Johnson et al. (2018) state that "teachers may resist expectations for the interdependence that serious collaboration calls for because it runs counter to professional norms of autonomy and privacy,

which have long defined teachers' work (Huberman, 1993; Little, 1990; Lortie, 1975)" (p. 2).

Teachers may become accustomed to creating work individually, which does not support the

element of online group projects in oTPD.

Areas of Further Research

Further data should be collected from teachers who have completed previous oTPD to

investigate the long-term effectiveness of the oTPD. In this investigation, researchers could

examine the differences between teachers with an entire classroom of identified gifted education

students and those who teach clusters of identified gifted education students. Additionally,

researchers can examine the academic outcomes of teachers in districts with low numbers of

students identified as gifted and talented. This examination may allow researchers to determine if

the PACKaGE model is universally effective or varies in its effect when used by differing

populations of teachers.

Given the strength of the findings within the study, further research should examine the

student achievement of teachers who complete one or more gifted education oTPD based on the

PACKaGE model. An examination of student achievement may begin to validate the

transformation of the teacher-deemed usefulness of oTPD instructional learning design elements

to student grades and performance. Lesson observation, student-created artifact examination, and

student achievement review may reveal potential connections between teacher's oTPD

completion and student academic outcomes. Alternatively, interviewing supervising

administrators and/or gifted education personnel on pre and post oTPD teacher pedagogical

behaviors may shed further light on oTPD teacher outcomes.

Additionally, findings from the survey suggest that, even though many researchers have

argued that collaborative assignments could be an important element in TPD and oTPD, the most

frequent response to the online group project element question was only a *moderately* usefulness

rating toward teachers' gifted education learning and pedagogy. This finding is surprising

because teachers mostly rated the other learning design elements as useful *to a great extent*, and

more teachers responded to the online group project element in the survey than others when

asked if they wanted to add a comment. Nearly twice as many teachers chose to respond, which

suggests they had a strong response or a strongest reaction to the online group project element.

Further study could investigate how or why the oTPD online group project element lessens

feelings of usefulness for teachers as well as how to adapt this element to offer improved

outcomes for teacher's gifted education learning and pedagogy.

Finally, further research could be conducted on specific oTPD follow-on strategies that

were listed by teachers in Table 5 (page 36). As discussed above, many researchers of TPD and

oTPD have suggested that the follow-on activity adds value to TPD and oTPD, so a study of

specific oTPD follow-on activities could benefit teachers, PD planners, and, ultimately, students.

Researchers may conduct a variety of follow-on activities to examine which offers the most

usefulness for teachers to continue their gifted education learning and pedagogy after the end of

the oTPD.

Study Limitations

Study data collected from the survey were self-reported and could be a limitation. While

surveying teachers about the usefulness of oTPD learning design elements is warranted,

triangulation of the results will strengthen the validity of the findings. Using additional tools of

qualitative research such as teacher interview, observation, and focus groups may enhance the

study's findings.

Additionally, teacher demographics for the study limit the generalizability of the findings. While most of the participating teachers were female and Caucasian, which reflects the U.S. teaching core in general (Taie & Goldring, 2017), the majority were from a specific state in the south-east and reported having one to four years of teaching experience. It could be argued that these new/newer teachers may not have the proper teaching and/or PD experience to give appropriate value to the subjective term of 'usefulness' to the examined elements of oTPD instructional learning design. Another age limitation could be that some teachers may have more online experience than other teachers. Many new/newer educators may have participated in online activities in their secondary and/or higher education experience. To increase the validity of the findings, the study could be replicated with an equal number of male minority teachers from various regions of the U.S. who have four or more years of teaching experience and equitable online experience.

Conclusion

Currently, there is a growing technological trend that allows teachers to access gifted education training through oTPD. However, for the oTPD to be optimal, the learning design model should include theory- and practice-based elements of instructional learning design that provide appropriate PD outcomes. Findings in this study suggest that teacher perceptions of the use of specific instructional learning design elements support the model for oTPD that may guide online instructional designers and administrators toward choosing effective oTPD elements for teachers' gifted education learning and pedagogy. The PACKaGE model design used Berge's (1995) instructor roles model's learning theory as well as research-based instructional design elements to create oTPD that appears to be appropriate for teachers who want to learn about and enhance their gifted education learning and pedagogy.

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Table 1

Connections from Berge's Model to Edinger's Model and oTPD/TPD Literature Support

Berge's (1995) Instructors Roles Model	oTPD/TPD Elements Implemented in Edinger's (2017) PACKaGE Model of oTPD for Gifted Education	Gifted Education oTPD/TPD Element Literature Source
Pedagogical	Asynchronous Discussion Board	Hull et al., 2000; Siegle, 2002
	Collaborative Teacher Product	Hull et al., 2000; Little & Housand, 2011; Siegle, 2002
	Individual Teacher Product	Eriksson et al., 2012; Smith-Westberry & Job, 1986
	Discussion Board Activity	Hull et al., 2000; Siegle, 2011
	Provocative Readings and Discussion Board Questions	Hull et al., 2000; Siegle, 2011
	Article Review Assignments	Siegle, 2011
	Video and Websites	Dettmer, 1986; Eriksson et al., 2012; Siegle, 2002
	Local and National Gifted Education Standards	Little & Housand, 2011
Managerial	Organized, Procedural and Administrative Tasked Syllabus that includes Participation Guidelines	Hull et al., 2000; Siegle, 2011
	Teacher Friendly Schedule and Due Dates	Siegle, 2002
	Rubric for Asynchronous Blackboard Discussion Participation	Eriksson et al., 2012
Technical	Connected to a Library Online/offline Teacher Requirements, Time to Adapt	Siegle, 2002

Social	Friendly, Social Aspects in Discussion Board, Collaborative Group Projects	Dettmer, 1986; Kaplan, 1986; Little & Housand, 2011; Siegle, 2002

Table 2

Descriptive Statistics and Correlation Matrix

To what extent were oTPD elements useful to your gifted education learning and teaching?	Mean	SD	1	2	3	4	5	6
1. Curriculum and instruction standards element	3.41	1.031	--					
2. NAGC's Pre-K-Grade 12 Gifted Education Programming Standards element	3.54	1.076	.597*	--				
3. Article Review assignment	3.96	.972	.267*	.313**	--			
4. Culminating Activity assignment	3.99	1.071	.251*	.351**	.435**	--		
5. Weekly Discussion Board assignment	3.97	1.011	.325*	.396**	.478**	.333**	--	
6. Online Group Project assignment	3.90	1.696	.045	.110	.356**	.351**	.161*	--

Note. N = 184. *p <.05. **p <.01

Table 3

Qualitative Response Statements and Codes: Positive/Negative/n

Element/Theme	Significant Statement	Codes: Positive/Negative/n
Think Time/ Effective, Liked	"Who wants to sound like a moron? I felt many of the participants had a lot more experience than I did..so I thought a lot before I posted anything!"	5/0/5
Asynchronous Discussion Board/ Beneficial, Enjoyed	"I felt for those that really took time and wrote some incredible responses to the questions ask[ed], the information I took away from this exercise was very beneficial. It was great hearing the experiences of others in all facets of education from all over the state."	8/3/11 8/1/9
Article Review/ Helpful, Enjoyed	"Really liked this assignment. It kept me up to date on current topics and trends with gifted education."	3/1/4
Individual Culminating Assignment/ Loved, Enjoyed	"Loved this too. To me, this was putting everything together we learned about, read about, etc. It gave you perspective on how everything fit together."	2/0/4
Gifted Education Standards/ Interested, More familiar	"I knew about my county program but was interested in learning about national views and programs. I discovered that [my] County is actually very proactive in gifted learning"	2/9/17
Online Group Project/ Hated, Very challenging	"I found the group project to be very challenging online. Most people were taking online classes because it allowed them to complete their work on their time. When it came to group projects online, it was very difficult to hold everyone accountable and to be available when others needed you to be."	

Table 4

oTPD Design Element Response Frequency – Extent of Reported Change, Usefulness, and Increased Knowledge

	Very slightly or not at all	A little	Moderately	To a great extent	To a very great extent
	Encourage you to increase your think time before responding to a Blackboard prompt				
Think Time	3.3% (6)	7.6% (14)	21.7% (40)	40.2% (74)	27.2% (50)
	Useful to your gifted education learning and pedagogy				
Asynchronous Discussion Board	2.2% (4)	4.9% (9)	22.3% (41)	37.0% (68)	31.5% (58)
Article Review	0.5% (1)	7.1% (13)	23.9% (44)	33.2% (61)	34.8% (64)
Culminating Assignment	1.6% (3)	6.0% (11)	26.1% (48)	28.3% (52)	34.2% (63)
Online Group Project*	8.2% (15)	15.2% (28)	23.4% (43)	15.2% (28)	7.6% (14)
	Increase knowledge of standards that guide curriculum & instruction				
	3.3% (6)	16.8% (31)	29.3% (54)	36.4% (67)	14.1% (26)
	Increase knowledge of NAGC Pre-K-Grade 12 Gifted Education Programming Standards				
Gifted Education Standards	4.3% (8)	12.0% (22)	29.3% (54)	34.2% (63)	20.1% (37)

Note. Raw scores in parentheses. *N* = 184 except **n* = 128.

Table 5

Open-Ended Teacher-Reported oTPD Follow-Up Activities for Gifted Education

After the completion of an online course, what type of follow-up or follow-on activity, either through the University or elsewhere, would be appropriate for your continued gifted education professional development?	*n*
Conference / Workshop for Gifted Education	37
In school practice-related activities (application, observation, curriculum development, assessment)	29
Additional oTPD	27
Social Network Group	25
Don't know	16
Access to Resources	13
None	12
N/A	7
Teacher Presentations of PD Knowledge	4
Face to face meet up	2

Note. N = 184