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PROFESSIONAL DEVELOPMENT NEEDS OF ONLINE TEACHERS

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Keeping in mind the rising rate of K-12 enrollment, and the increased demand for online teachers, the need for professional development of online teachers is keenly felt. The skills needed for teaching in face-to-face environments are not always transferable to online settings. There is a pointed change in the way teaching takes place in an online format, which calls for an understanding of teacher roles and the competencies prompted by this paradigm shift. A lack of understanding of the pedagogical transformations required by online teaching could lead to teacher stress. The purpose of this study was to understand the extent to which educators teaching in K-12 online settings in Ohio are equipped to work in such environments by relying on specific competencies and skill sets. This understanding would then enable the development of programs designed to address their professional development needs.

PROFESSIONAL DEVELOPMENT NEEDS OF ONLINE TEACHERS

There has been a steady increase in online K-12 student enrollment over the past decade. In 2001, there were 40,000 to 50,000 students enrolled in both full-time and part-time online programs (Clark, 2001). Picciano and Seaman (2009) reported that, in the academic year 2007-2008, 1.3 million K-12 students enrolled in online classes, which represents a 47% increase from the previous two years. Queen and Lewis (2011), in their report for the National Center for Education Statistics, reported 1,816,400 enrollments in distance-education courses, most of which were online, in K-12 school districts for the 2009 – 2010 academic year. High school enrollment in online courses amounted to 74% of the total online enrollment. The Florida Virtual School (FLVS), a pioneer in the field, reported 220,000 course enrollments, half of the total number in all of the state schools (Watson, Murin, Vashaw, Gemin, & Rapp, 2010).

Professional development for online teachers

Keeping in mind the rising rate of K-12 online enrollments and the increased demand for online teachers, the need for professional development of online teachers is keenly felt. As noted by Patrick and Dawley (2009), "very few teacher programs in the U.S. offer a curriculum for online teaching, leaving districts, states, and virtual schools to train online teachers. This approach creates inconsistencies in training outcomes across programs" (p.1). As a result of this disconnect, many teachers who are hired may not have the requisite competencies and skill sets needed to teach in an online environment (Bennett & Lockyer, 2004; Savery, 2005; Sieber, 2005). Areas where adequate knowledge will affect online teachers in terms of their competencies and skill sets include the following: online pedagogy, instructional strategies and tools; online learning psychology/theories, facilitation skills and issues of technology, and technological pedagogical content knowledge (Kennedy & Archambault, 2012). Picciano and Seaman (2009) also state that "the keys to the future of online options are well-trained online instructors, high quality online offerings that align with state standards, effective strategies for maintaining connections with students, [and] cost effective options for districts" (p.15).

There are certain misconceptions associated with online instruction. One of them is that 'teaching is teaching,' meaning that the skill sets needed in the face-to-face environment are transferable to online teaching without any adjustments. However, this is far from the truth (Davis & Rose, 2007). Online pedagogy requires different competencies and skill sets (Bennett & Lockyer, 2004; Jaffee, 2003; and Sieber, 2005). The challenge of teaching online without being equipped with appropriate effective teaching strategies and pedagogical foundations is very frustrating to virtual teachers (Brennan, 2003).

Another important consideration to follow up on professional development sessions is reinforcement as a way to measure the effectiveness of such training. While designing professional development, it is not only important to customize it according to teacher needs, but also to give opportunities for teachers to reinforce what has been taught, as this is crucial to further growth and increased efficacy.

Educational research, reforms, policies, and expectations from all sections of society have set high academic standards for students and teachers, especially in terms of 21st-century skills. Along with core knowledge instruction, students must also learn the essential skills required for success, such as critical thinking, problem solving, communication, and collaboration in the context of local, national, and global needs. Experts have recommended strong support systems to sustain these educational needs in terms of standards, assessments, curriculum, instructional strategies, and student-centered learning environments. The onus of responsibility in terms of achieving these goals cannot solely be placed on teachers as a way to encourage them to become effective agents of change with support and guidance from school leadership. As online learning is still developing as a field of practice and study, there is a dearth of research in the area of K-12 online teaching and learning compared to higher education, so there is a need for the former sector to develop its own body of research that will identify the best practices in online teaching and learning. As K-12 settings are unique and learners are different from adult learners in post-secondary environments, professional development should result in the creation of a cadre of "teachers who understand learning as well as teaching, who can address students' needs as well as demand of their disciplines and who can create bridges between students' experiences and curriculum goals" (Darling-Hammond & McLaughlin, 1995, p.5). Professional development in an online setting would mean that:

- Teachers understand what it means to teach online, the associated competencies and skill sets, as well as the rewards and challenges of instruction in virtual learning environments.
- Teachers have to be proactively involved in their own learning process so that they are equipped with the competencies and skill sets and expected to facilitate student learning by being able to understand learning from the students' perspective.
- The design and purpose of professional development is to support and empower online teachers as well as raise the performance levels of both the educators and their students.

This proactive, continuous professional development practice is even more pertinent to the online learning environment because of its novel and unique nature, where traditional teaching and problem-solving skills already

mastered by the teacher may turn out not to be as effective. There is a need to equip online teachers with an understanding of the nature of online student-teacher interaction and challenges that arise due to the characteristics of the medium of instruction. Moreover, the competencies needed in this field are different from those needed in face-to-face environments; therefore, online teaching requires specialized professional development.

Professional development of online teachers: Reasons

The first reason for providing specialized professional development to virtual teachers has to do with the fact that most of them have the skills needed for face-to-face instruction, based on which they possess state-issued teaching licenses. However, DiPietro, Ferdig, Black, and Preston (2009) point out that the skills needed for teaching in face-to-face environments are not always transferable to online settings. There is a pointed change in the way teaching takes place in an online format, which calls for an understanding of teacher roles and the competencies prompted by this paradigm shift. A lack of understanding of the pedagogical transformations required by online teaching could lead to teacher stress (Briggs, 2005). The same author also points out that a teacher's "role is at the heart of conflict and ambiguity in organizations and it is suggested that online roles and competencies are different from those required in the traditional learning environment" (p.258). Furthermore, Meloncon (2007) observed that "[if] educators are changing teaching places, they need to redefine themselves in light of the change in landscape" (pp.37-38). The process of re-defining teacher roles and the associated competencies takes time and persistent effort.

Consequently, teachers without appropriate professional development support may simply replicate the skills they have acquired in presentation settings with minimal change, thus not living up to the challenges and subsequent rewards of being online teachers. Failing to recognize the presence of an interactive audience, even if no longer immediately visible, to transform their presentation style "from one of disseminating information to one of creating learning environments where students co-construct knowledge through interactions" (Vaughan, 2010, p. 61) may prove detrimental to students. For example, one of the most important aspects of online teaching is the necessity of being cognizant that building online learning communities, equivalent to the offline classroom social environment, is essential to achieving successful learning outcomes. It is in these spaces that student-student and student-teacher interactions take place, and these interactions create a "web of learning" (Palloff & Pratt, 2007, p. 5).

The second reason for the need for professional development for online instructors deals with the ever-changing nature of both teaching and virtual environments. The former demands certain teacher competencies and skill sets, some of which are required in face-to-face instruction as well, but are more pertinent to the nature of online learning. All communication in online settings is technology-based, so any related technical literacy skills would have to be developed. As online communication must also be closely monitored, instructors have to have control over the finer aspects of communication. To that effect, "although all teachers should possess good communication skills, this is particularly critical in online environments where much of the communication occurs without the visual cues associated with face-to-face communications" (Davis & Rose, 2007, p. 9). Unclear messages can potentially create conflict among students, as well as between students and teachers, especially if the meaning of actual words used is altered by the absence of visual and auditory cues, which could impede the learning process.

Teachers are unable to see the moment when students begin to zone out because of learning saturation, as they cannot physically observe them. Online students also have fewer opportunities to bond socially when they do not share a physical environment. The period of time before and after class sessions when students in face-to-face environments can interact freely is missing from virtual settings, unless instructors are specific about providing such opportunities. This can potentially result in less camaraderie among students, which can reduce cooperation and participation in group work. It can be difficult to encourage the development of trust and camaraderie due to the inherent characteristics of virtual settings. Students may be less forthcoming about personal information with each other if they expect their posts and comments to be recorded. Therefore, instructors must develop strategies that allow students to interact and share common experiences that build bonds of trust among them.

One of the common problems marring online interactions is a sense of unreality about the people one interacts with. Several factors may lead to easily forgetting social courtesies, including having too many Web browsers open simultaneously and dealing with other people they encounter online who they never meet in person, thus being no more than shadowy ghosts. These factors may lead to unrealistic, meaningless encounters, which replace real social interactions that lead to adequate socialization. Students may also potentially focus on interacting with the instructor alone, ignoring their classmates and preventing the construction of a dynamic virtual classroom, especially if instructors do not set student-student interactions as a priority, allowing students to develop a strong sense of one another as real rather than virtual individuals. Online environments can be highly isolating

if social elements are not carefully constructed within them. Tying the social dynamic requirement into the community-centered learning framework, as defined by Bransford et al. (1999), is yet another concept that sets online education apart. Professional development for online teachers needs to ensure that all of these issues are addressed.

The third reason why professional development is important to online instructors is the lack of pre-service opportunities for learning to teach in virtual learning settings. Highlighting the importance of this aspect, the National Education Association's *Guide to Teaching Online Courses* (2007) recommends training for pre-service teachers in the following areas: "a) facilitating online discussions and community building strategies inclusive of small-group collaborative assignments; b) designing and delivering virtual course content; c) creating original online lessons for teams of peers; d) providing feedback to students; and e) completing online student teaching experiences based on feedback from teacher educators" (p.12-13). As these are non-mandatory directives, one cannot be assured that pre-service teachers will have developed the necessary online competencies and skills sets. Therefore, it is important that online teachers are supported through relevant professional development programs.

The fourth reason for which professional development is critical to online instruction is the recent development and implementation of the Common Core State Standards in the context of 21st-century skills. Whether it is a secondary mathematics course or a language arts class, technology is blended into some aspect of the class. Teachers and students have to be competent in information and communication technologies (ICT) skills, as stated on the Common Core Standards website:

> To be ready for college, workforce training, and life in a technological society, students need the ability to gather, comprehend, evaluate, synthesize, and report on information and ideas, to conduct original research…and to produce and consume media is embedded into every aspect of today's curriculum. In like fashion, research and media skills and understandings are embedded throughout the Standards rather than treated in a separate section. (Common Core State Standards Initiative, 2016)

The fifth and final reason for the need of professional development for virtual teachers is captured by Patrick and Dawley's (2009) statement: "the World Future Society predicts that virtual learning is one of the top ten breakthroughs that will transform life around the world in the next 20-30 years (changing which populations have access to the highest-quality education and teachers worldwide)" (p. 12). Many countries in the world have

adopted online schooling and are training their teachers to develop the necessary online competencies. For example, in Singapore, teachers are aided in learning how to use ICT, as the Ministry of Education provides professional development through an online learning website – VITAL.org. Every pre-service instructor is trained to teach online, as 100% of the secondary schools employ online learning. Educational systems around the world must emulate these measures or risk a loss of competitive position in the global market, both for their teaching institutions and for the students they serve.

Purpose of the Study

The purpose of this study was to understand the extent to which educators teaching in K-12 online settings are equipped to work in such environments by relying on specific competencies and skill sets. This understanding would then enable the development of programs designed to address their professional development needs. This study sought to explore the professional development needs of teachers in K-12 online schools in Ohio. The overarching research questions formulated for this study were:

1. What do participating teachers report are the ways to prepare and support online teachers?
2. What elements should be included in the design of a professional development program for K-12 online teachers?

The qualitative data for this interpretative study were gathered by these two questions as they provided an insight into the professional development needs of the online teachers:

1. List the most important recommendations you have for online teacher preparation, both pre-service and in-service.
2. Yet again, based on all the information you shared, please describe some of the ways in which professional development sessions you participated in were reinforced by follow-up and continuous feedback.

METHOD

The researcher used basic interpretive qualitative methods to "uncover and interpret" (Merriam, 2002, p. 39) the experiences of online teachers. This research project was conducted as a basic interpretive qualitative study that focused on the professional development needs of K-12 online teachers in Ohio, and the design of professional development program based on their recommendations. In qualitative research, one "seeks to discover and understand a phenomenon, a process, the perspectives and world views of the people involved, or a combination of these" (Merriam, 2009, p. 6).

This was accomplished through collecting online K-12 teacher responses with the help of two qualitative questions for the design of professional development and reinforcement of what was learned in these sessions. Denzin and Lincoln (2005) point out that qualitative research focuses on the interpretation of phenomena in their natural settings in terms of the meanings people bring to them. Qualitative data were collected with a set of open-ended questions by which teachers reported their lived experiences, transformative processes, and learned teaching practice along with their areas of needs that should be addressed through professional development.

Participants and Data Collection Procedures

The participants for this study were teachers in fully online K-12 schools in the state of Ohio found on the state Department of Education website. The contact information of potential participating teachers was obtained either from school Web pages or coordinated by school officials upon acceptance of the request for access to their teaching staff members. The letter of access covered all the details of the study as well as the information about the IRB process, while ensuring that anonymity of the respondents and their respective institutions were maintained. A total of 98 (n=98) K-12 online teachers from Ohio participated in this study. The respondents completed an online survey that featured qualitative research questions, two of which were pertinently based on the professional development needs of the K-12 online teachers in Ohio and the proposed design of such training.

Data Analysis & Coding

For qualitative analysis purposes, data were gathered through two open-ended questions pertinent to the professional development needs of K-12 online teachers, which addressed how their understanding of competencies and skill sets of virtual instruction developed to inform their professional development needs and also the design of professional development programs. When using open-ended questions, respondents answered by using their own words (Bradburn & Sudman, 1988). Reja et al. (2003) support the use of open-ended questions as "one is to discover the responses that individuals give spontaneously; the other is to avoid the bias that may result from suggesting responses to individuals" (p.159). Bradburn and Sudman (1988) also believe that responses obtained from closed questions are "more relevant and compatible" (p. 147) whereas open-ended questions produce "fuller and deeper responses" (p.147) that are very useful because they allow respondents to explain information that is otherwise simply quantified. The open-ended questions allowed the researcher to develop an in-depth understanding about participants' perceptions regarding specific competencies, skill sets, and professional development needs.

The two open-ended questions pertaining to online teacher need for professional development and reinforcement were transcribed verbatim for data analysis. Coding represents the operation by which data are broken down, conceptualized, and then put back together in new ways in which the researcher sees the data or wants them represented. Gibbs (2010) defined coding as a way of attaching names or ideas represented by names to pieces of texts in transcripts. Coding is a process of making notations next to the data that may be important, while open coding is the arrangement of data into as many possible coding segments as one thinks may be useful for data analysis. Open coding is a very useful process, as it makes the researcher look expansively at the data and helps one to develop very general assumptions.

After the process of coding the data, the codes were re-examined for redundancy and relevance. The researcher went through the process of reviewing the codes in such a way as to eliminate the repetitive codes by either dropping them or combining them. Meanwhile, the process of thinking of the grouping of codes was on-going. Through this process, categories were created, aptly described by Saldana (2013): "As you code or recode, expect-or rather strive for-your categories to become more refined…there may be some rearrangement and reclassification of coded data into different and even new categories" (p.11).

In data analysis, categories have conceptual power because they are able to pull together groups of concepts. Thinking through the process practically, categorizing consists of going through all concepts and asking questions, such as 'What is this concept about?' or 'Is this concept similar or different from the one before or after?' Merriam (2009) refers to this initial process as thinking "as if you are having a conversation with the data" (p.178). This process tries to make sense of the raw data by making little notes and queries on the margin. Categories are discovered when concepts are compared against one another, and concepts become characteristic components of a category if they relate to each other within that category – otherwise known as subcategories. If a concept seems not to pertain to an already identified category, it should be left aside and it may potentially become the entry to a new category as data analysis continues. As discussed in Merriam (2009), the categories should be exhaustive, mutually exclusive, sensitizing, conceptually congruent, and responsive to the purpose of the study. After completing the process of coding the data, the codes were re-examined for redundancy and relevance. The final analysis was "reached by differentiating and combining data retrieved based upon the reflections one makes about the information collected" (Miles & Huberman, 1994, p.56). The themes thus generated gave an in-depth understanding of the competencies and skill sets associated with online teaching as well as the professional development needs and design.

FINDINGS

This type of qualitative data helped in developing an in-depth understanding about participants' perceptions regarding the professional development needs of online teachers, from which to form recommendations for future research, practice, and design of such programs. The appropriate analysis methodology involved making sense of data as they come in, thus allowing for interpretation to be a process of organization, reduction, consolidation, comparison, and reconfiguration. A content analysis strategy was used to interpret the data as patterns emerged after reading and re-reading the responses carefully, leading to labeling and categorization of codes by using interactive methods. The first open-ended question pertaining to teacher preparation and professional development generated the following results:

Q1. List the most important recommendations you have for online teacher preparation, both pre-service and in-service.

Table 1
Coded Responses for Q1

Codes	Examples	Responses	Percentage
Teacher Qualities	Commitment to teach online, understanding the unique online environment, communication skills with students, parents, willing to listen learn, flexible, patient, understanding diversity and multi-cultural perspective, organization and time management-keeping records/files. Ability to motivate students with relationship building.	43	59%
Technological competence	Edmondo, Skype, Blackboard,	16	22%
Professional Development sessions & collaboration	Meetings discussions/ both face to face and online, Seminars. Professional learning communities	12	16.43%
Have experienced online learning as a student	Online student perspective	2	3%

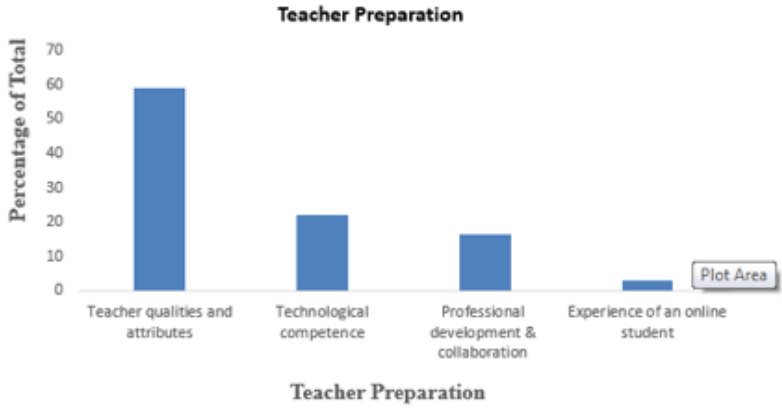

Figure 1. Recommendations for Online Teacher Preparation

A total of 73 responses were gathered for Question 1. The teacher qualities that were enumerated by teachers were relationship building to motivate students (communication with students and family, providing positive feedback, understanding students' needs, finding the key factor that motivates students, demonstrating patience, being welcoming, flexible, and ever present in a student's life), understanding the uniqueness of the online environment, time-management, understanding diverse cultures and socio-economic status, patience, and organizational skills. Two teachers wrote about the relational aspect of student engagement in an online setting through motivation and communication: "Learn how to motivate students, understand their emotional/mental/physical needs. Research available resources" (N-22). The second one explained it as follows:

> Online teachers must learn how to engage online learners through development of as personal a relationship as possible in an online atmosphere. And they must still base their interactions in education on commitment, passion, respect, and love. Commitment to the profession, passion for their subject, respect and love for students, parents and fellow professionals (N-29).

Appropriate feedback is essential as well (N-49). One teacher responded regarding the uniqueness of the online environment: "Be prepared for the impersonal atmosphere of online teaching." (N-30), and another teacher elaborated on this: "Have a comprehensive pre-service is important, but I think a well-established in-service for online teachers where they can

collaborate may be just, if not more important so that an online teacher doesn't feel so isolated" (N-57). Yet another teacher commented on the organizational skills: "ORGANIZATION IS KEY!! Must keep good records/ files. I keep a spreadsheet with all my students and their pertinent information (phone numbers, parent names, school if applicable, etc.)" (N-66).

The second emerging pattern focuses on technological competence (n=16, or 22% of total responses). One participant wrote that "the most important preparation needed before teaching online is having basic knowledge of technology. Being able to learn new programs and adapt easily to change" (N-25). Yet another participant responded:

> I would recommend online teachers be familiar with technology, first and foremost. Even if you are not a pro at everything, that's OK. Be open to learning, trying, and even failing, at some of the new technology. Another recommendation is to have an openness to trying new formats, new tools and apps. Some will be duds, but there are some gems out there that can really make a difference in your teaching style and learning for students. It's a learning process and if something isn't working, don't be afraid of letting it go (N-27).

The third pattern emerging from the responses deals with professional development sessions and collaboration (n=12, or 16.43% of total responses), as one teacher recommended:

> I started with attending the mini teacher development sessions that enhanced my knowledge of technology and software that would best meet my needs to provide online instruction. I then went further and took the necessary classes (LERN) to receive my certification as an online instructor. Never quit taking part in the development of skills that are technology based, because that is where you will be left in the dust. Finally, be a part of the professional groups with similar needs and keep up with current trends and methods (N-31).

The fourth pattern emphasized experiencing online learning as a student (n=1, or 1.36% of total responses). These teachers expressed this as, "You can empathize with those whose computers 'eat the homework', crash or suffer other maladies" (N-69).

Q2. Yet again, based on all the information you shared, please describe some of the ways in which professional development sessions you participated in were reinforced by follow-up and continuous feedback.

Table 2
Coded responses for Q2

Codes	Examples	Responses	Percentage
None	None, there have been none. sore point, not have been,	30	41.1%
Online Follow-ups	Follow up emails, clarifications, online meetings. webinars,	21	28.77%
Face to face interactions	Meeting face-to-face, discussions, action plans, face-to-face, collaborate, group work	18	24.66%
PD Reviews Initiated by Content Providers	PD360	4	5.48%

Figure 2. Reinforcement of Professional Development.

A total of 73 responses were gathered for Question 2. The first emerging pattern worth noting is 'none' (n=30, or 41.1% of total responses), that is say there were no reinforcement of professional development sessions, and one teacher expounded on this by saying, "They haven't been and it's very frustrating" (L-30). The second pattern that emerged was the reinforcement through online sessions (n=21, or 28.77% of total responses), wherein one online teacher explained that "We always have follow-up discussions regarding our PD360 videos, and we can have a full discussion without having to drop everything and meet in person" (L-12). Face-to-face interactions (n=18, or 24.66% of total responses) was the third emerging pattern, as one teacher reported:

> Many of our PDs are often followed by discussion in our content area groups. While a particular PD may be focused on general subjects, meeting as a content area group allows us to work together to share our thoughts as well as ideas on how others in the group can use our ideas. We often collaborate on ideas for the students (L-27).

Another emerging pattern has to do with reinforcement initiated by content providers (n=4, or 5.48% of total responses). One online teacher wrote the following about the professional reviews:

> We just finished a series of instructional videos on Edivation (PD360) centered on community and parent engagement and spent about 4 hours working through collaborative activities to process and debrief about the content. We concluded with developing action plans for modifying our approach to designing community and parent engagement activities/ offerings. We have subscribed to Edivation / PD 360 for 2 years now (L-54).

Another online teacher reiterated the importance of professional development sessions in this comprehensive response:

> Some of the ways in which professional development sessions I participated in were reinforced by follow-up and continuous feedback are: -The use of online collaborative groups in my content area after a professional development conference. -The formation of new or extra professional development sessions after the initial professional development conference (L-55).

DISCUSSION

The responses from question 1 (Table 1) related to recommendations for teacher preparation both pre-service and in-service, may help outline possible competencies and skill sets in online teachers to be addressed in the content of PD sessions. The responses from question 2 (Table 2) were about the professional development sessions that the online teachers in Ohio participated in and whether they were reinforced by follow-up and continuous feedback. The themes that emerged from both questions one and two are discussed in the following sections.

Teacher Qualities

The teacher qualities mentioned by participants were relationship building to motivate students (communication with students and family, positive feedback, understand students' needs, finding the key that motivates students, patience, welcoming, flexibility, ever present in a student's life), understanding the uniqueness of the online environment, time-management, understanding diverse cultures and socio-economic status, patience and organizational skills. In their study, McIssac, Blocher, Mahes, and Vrasidas (1999) identified interaction as the most important learning activity in a distance learning environment. The unique challenges faced in the online environment are multiplied if there is lack of adequate interaction and consequently communication between learner-instructor interaction, learner-learner interaction, and learner-content interaction (Moore, 1989), and learner-interface interaction (Hillman et al., 1994). The online environment lacks real-time, audio-visual cues and, therefore, it depends heavily upon text-based communication and interaction. This deficiency can be dealt with by instructors by creating learning communities, initiating motivational interactions with students to increase student engagement, promoting social presence through interaction, and communication/feedback.

All these teacher qualities can be addressed in professional development sessions for online instructors where participants understand the foundational aspects of online learning and the competencies attached therein. The emerging theme of 'teacher qualities' and the listed qualities can help online instructors to act as a 'bridge' for online students. The other adjectives used in the literature for an online teacher are facilitator, instructional designer, process facilitator, advisor, catalyst, e-moderator, etc. (Conceicao, 2006; Goodyear et al., 2001; and Salmon, 2002). However, the word 'bridge' is used in this paper to introduce the concept that defines the distance between students and teachers as well as among content, students, and teachers, which is due to the unique characteristics of online environments. This distance can only be navigated when instructors in virtual settings are equipped with foundational training focused on the architecture of such learning environments:

- Connect content, students, and instructional environments, as demonstrated by one respondent: "The learning environment is another important consideration. We've learned that most students do better when there is someone who is immediately available to offer help with concepts. Many high school students are not proactive with their education so they need constant mentoring, support and guidance. The technology portion of the job seemed to be relatively easy to learn. Learning how to adapt the online lesson into a truly supportive in class-lesson is a little tricky" (N-44).

- Bring together students, parents, and online institutions to track student progress, as highlighted by one other respondent: "The most important recommendation I have for an online teacher preparation is to communicate with students and family in regards to progress and grades" (N-26).
- Fill the gap between teacher and student in an online setting when the latter is disengaged due to lack of face-to-face interactions, as mentioned by one participant: "COMUNICATION at all costs. We do not physically see all of our students, therefore, we need to be in constant contact with our students. Appropriate feedback is essential as well" (N-49).
- Understand and connect the diverse student body, as referenced by one participating teacher: "Our school is across the state of Ohio. In one classroom, I have students from all areas (Urban Rural, Suburban) and socioeconomic (poverty-riches) and multiple religions (Muslim, Jehovah Witnesses, Christianity, Catholic, etc). I can see it being important to understand all cultures and environments" (N-39).
- Serve as motivational connection between online teachers and students, leading to relationship building and consequently increased student engagement. This was expressed by one of the respondents as, "Be patient and positive. Too many on-line students are here as a last resort and are often planning on dropping out. Positive interactions and encouragement can lead to little successes and before they know it, the students are zipping through material that they would have believed to be beyond their capabilities" (N-60).

Technological competence

Along with these qualities, the other important area that emerged from this study was technological competence. Moore and Kearsley (1996) focused on the technical components of distance learning, stating that it "requires special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements" (p.3). One teacher wrote the following about technology, persistence, and the need for teachers to be technologically competent:

> Have experience with many aspects of technology. Edmodo, Blackboard, Skype, Google etc (N-5).

Collaboration

The third emerging theme was collaboration (16.43% of all responses), wherein online teachers have expressed a need to feel a sense of connection with their colleagues and online school systems. There were varying responses that gave an insight into how these participants feel, as one teacher wrote about the need to see how other online schools work in these words, "Develop an awareness for different online schools - visit them and learn about how to engage students via technology (N-51). Another teacher wrote about the feeling of isolation in the online environment, "Be prepared for the impersonal atmosphere of online teaching" (N-30). All the above given comments resonate very well with the recommendation of the online teachers for PD and collaboration for online teacher preparation. The PD sessions need to address the sense of isolation that online teachers sometimes feel and the need for communities of practice for online teachers as well as association with other online schools to share best practices.

Experiencing online learning as a student

The fourth theme that emerged was experiencing online learning as a student. The participating teachers felt that having experienced online learning as a student would afford better understanding of the challenges and rewards of this environment as one teacher described it thus, "Take computer classes - know how the thing works and how you can get it to do what you want. Take online classes yourself (N-69).

Reinforcement of professional development

Reinforcement is a way to measure the effectiveness of PD sessions. The participating K-12 online teachers in Ohio reported on the different ways PD was reinforced (Table 2). The data revealed that 41% of these individuals did not have the opportunity for reinforcement of PD, indicating a lack that needs to be addressed. While designing PD sessions, not only is it important to customize it according to teacher needs, but to also give them opportunities to reinforce what has been taught, as these professionals will be able to evaluate what works and what does not work. Reinforcement provides a means for teachers to evaluate themselves and receive feedback as to the strengths and weaknesses in their practice (Birman et al., 2000; Corcoran, 1995). Additionally, teachers may evaluate, with the help of mentors, which strategies and methods introduced in the PD sessions were effective and to what extent. Bransford et al. (1999) also stated that the new techniques and strategies learned in PD can be effective only if they are followed by practice and feedback. In this way online teachers will be able to evaluate and assess their teaching and be self-directed learners (Knowles, 1975). Reinforcement also promotes collaboration and formation of community of practice, especially when teachers share their successes and failures.

CONCLUSION

While designing professional development for online teachers, one has to keep in mind the uniqueness of this non-traditional teaching environment and the resulting challenge of meeting student and teacher needs. The primacy and challenge of addressing the specific needs of online students calls for honing the competencies and skill sets of the online teachers. The implications of this for PD would be to design teaching modules based on teacher qualities and all the other emerging themes detailed above.

Secondly, there is a need for continuous professional development and reinforcement because of the novel and unique nature of online teaching in terms of instructional strategies, student-teacher interactions, and the medium of teaching itself. While most online teachers have face-to-face teaching experience and have mastered these learned practices and problem-solving skills, these face-to-face teaching skills may not be compatible with the online environment. There is a need to equip teachers with an understanding of the nature of online student-teacher interaction and challenges that arise due to the distance caused by the medium of instruction. The professional development sessions may have addressed these issues as well as newer relevant knowledge in terms of emerging technologies. However, 41% of the K-12 online teachers participating in this study reported they did not have reinforcement or feedback of any sort after the initial professional development sessions.

Unless these practices are reinforced and refined through constant feedback from mentors and colleagues, they may tend to be just ritualistic practice. As pointed out by Bransford et al. (1999) in their learning design framework, learning of new strategies will not be fruitful without the knowledge and understanding of the why, when, and in what ways it can prove to be valuable to teachers. They also stress the importance of feedback after implementing any new strategy, so that teachers can re-evaluate their practice in light of feedback. The when, why, and where of new teaching strategies may be presented to teachers in a professional development setting (for example, collaborative learning). Having an understanding of these concepts resonates very well with the principles of andragogy (Knowles, 1975),which essentially promotes the idea that an adult learner needs to understand the purpose of the new knowledge, orientation towards practical usage of skills, and immediate applicability of any new skills acquired. This connects well with online teacher preparation and professional development, wherein teachers not only need to be cognizant of emerging theories of online learning, but also why this understanding will equip them to be better online teachers. They also need to know which online tools they need in order to facilitate learning and why. Additionally, teachers must understand how these online tools significantly enhance the learning experiences of the students.

Along with PD sessions based on teacher qualities, technological competence, and experiencing an online as a student, online teachers need interactions with fellow instructors through professional development sessions that are 'open spaces' for sharing pedagogical practices. Bransford et al. (1999) have emphatically reinforced this idea in their Learning Design framework for professional development, wherein they emphasize the fact that professional development is, to a certain extent, conducted in isolation and suggest that it should mainly be conducted in community-centered structures. These types of PD sessions will also address the sense of isolation online teachers suffer from. In such community-centered structures, online teachers should also be given a platform to interact with colleagues and mentors in a community of practice.

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