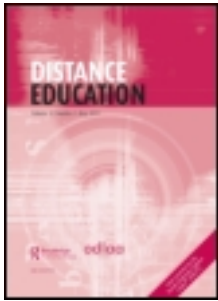


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Transforming online teaching practice: critical analysis of the literature on the roles and competencies of online teachers

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Understanding what is lacking in the online teaching literature is critical to helping researchers and practitioners develop programs and support mechanisms for online teachers in higher education. This review formulates a critique of the standards- and competency-driven vision of online teaching from the perspective of transformative learning theory, in order to offer an alternative exploration of the professional development of online teachers as adult learners. The results indicate that while research about online teacher roles and competencies guides the development of teacher preparation and training programs, it lacks in terms of addressing the issues of empowerment of online teachers, promoting critical reflection, and integrating technology into pedagogical inquiry. An alternative perspective is suggested that considers teachers as adult learners who continuously transform their meaning of structures related to online teaching through a continuous process of critical reflection and action.

Keywords: online teaching; transformative learning theory; online teacher roles; competencies

Introduction

The Internet has become a common medium for interaction, communication, and collaboration within which learners and teachers engage in ‘unique and irreplaceable learning opportunities’ (Burbules & Callister, 2000, p. 277). Increases in the number of online programs and course offerings are changing the role of the teachers and the nature of teaching, with more and more faculty and support staff required for online teaching (Bennett & Lockyer, 2004). Teachers, who are at the center of this increasing demand and pressure to teach online, are being challenged to rethink their underlying assumptions about teaching and learning, and the roles they take as educators (Wiesenberg & Stacey, 2008). This growing interest in online education challenges higher education institutions as well to rethink their cultural, academic, organizational, and pedagogical structures in adapting to a new culture of teaching and learning (Howell, Saba, Lindsay, & Williams, 2004).

Current approaches to online teaching research

The experiences of early adopters have created a discourse around online education focusing on the definition of online teacher roles and competencies (Bennett

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& Lockyer, 2004; Lee & Tsai, 2010; Major, 2010; Natriello, 2005). The notion that teaching online requires the development of new skills and sets of pedagogies has led researchers to study the roles that online instructors take in online education environments (see Anderson, Rourke, Garrison, & Archer, 2001; Berge & Collins, 2000; Goodyear, Salmon, Spector, Steeples, & Tickner, 2001; Graham, Cagiltay, Lim, Craner, & Duffy, 2001; Guasch, Alvarez, & Espasa, 2010; Salmon, 2004).

While educators and organizations around the world are becoming more involved in online learning, the growth in faculty involvement and acceptance has been modest, accompanied with limited change in online pedagogies (Natriello, 2005).

Given the expanding interest and demand for online learning, coupled with the results of studies showing that higher levels of learning are not easily achieved in online courses, there is an imperative to advance our understanding of how to facilitate effective online learning activities (Kreber & Kanuka, 2006, p. 121).

Researchers have identified several reasons for the persistent limited understanding in nurturing higher-order thinking in the online classroom. One of the critical reasons is the tendency of carrying traditional educational practices into the online environment (Kreber & Kanuka, 2006). Teachers often rely on traditional pedagogical approaches that they develop in emulation of professors they consider to be effective teachers. Furthermore, these approaches are formed over the years of developing expertise in the face-to-face classrooms, and mostly without teaching preparation (Kreber & Kanuka, 2006). Having little (if any) prior experience in teaching online, teachers tend to transfer traditional approaches to the online classroom, and perpetuate approaches that have been proven to be ineffective in the face-to-face classroom. Teaching online, therefore, creates tensions by 'introducing a new activity into existing institutions with established roles' (Natriello, 2005, p. 1890).

Studies of online teacher roles and competencies are important as they provide information about how online teachers might be trained and supported, as well as factors that might affect the design of online learning environments. Often the roles and competencies suggested for online teaching have had limited impact on the professional development programs that address teachers' needs, individual dispositions, external social demands, and capabilities within their unique teaching contexts. Moreover, despite the growth in online learning in higher education, the literature on online education lacks a critical look at the existing research on teachers' roles and competencies with respect to online teaching.

Purpose of the study

This review of the literature on online teaching sought to synthesize and critically examine the literature on roles and competencies for online teachers.

Various terms are used in the literature on online teaching to describe online teacher roles, for example, online teacher, e-moderator, online tutor, facilitator, or online instructor. In this review, *online teacher* is defined as a faculty member who teaches online; *online teaching* is defined as teaching that is conducted mostly online; and *face-to-face teaching* is defined as teaching that is conducted

in a physical classroom. Moreover, courses taught completely online are referred to as online courses and those taught face-to-face or in a blended mode involving face-to-face and online methods are called traditional courses (Tallent-Runnels et al., 2006).

Methodology

This critical analysis of literature on online teacher roles and competencies began as a broad search for research on online teaching. After the identification of key articles and related frameworks, the search was narrowed down to the topics of online teacher roles and competencies. The transformation of the search topic into the search language was an ongoing effort to find the key terms in the field in order to locate the desired literature.

The articles included in this review comprise both qualitative and quantitative studies. They were located through a search of online databases, including Educational Resources Information Center (ERIC), Academic Search Elite, and Google Scholar; the tables of contents of key journals, such as *British Journal of Educational Technology*, *Journal of Distance Education*, *Distance Education*, *Journal of Asynchronous Learning Networks*, *The Internet and Higher Education*, *Computers and Education*, *Teachers College Record*, *The Journal of Open and Distance Learning*, *Quarterly Review of Distance Education* and the *American Journal of Distance Education*; and bibliographies of relevant articles. To locate the review studies, the *Review of Educational Research* journal was examined, focusing on the reviews of online teaching published since 2000. The Distance Education Hub (DEHub, <http://www.dehub.edu.au/>) was also used to locate research on online teaching. DEHub serves as an online database of research on distance education and contains research articles and other resources on distance education drawn from the Australian Education Index and a variety of international organizations and publishers. In addition to searching online databases and journals, three other sources were used for the search: printed books, references of the key articles, and articles by key researchers in the field. Due to the insufficient level of consistency or agreement on the terminology used in the online teaching literature, the references of the related publications were extensively used. Keywords included *online teaching*, *online teacher roles*, *online teacher competencies*, *higher education*, and *online learning*.

This critical review covers articles published in the last 20 years, starting with the current research and going back to the 1990s when research on online teaching, teacher effectiveness, and teaching with technology was gaining momentum with the dissemination of online learning in higher education institutions. Empirical research articles and articles on conceptual and theoretical frameworks were included. The review resulted in 11 key articles on online teacher roles and competencies in higher education: Anderson et al. (2001); Aydin (2005); Bawane and Spector (2009); Berge (2009); Coppola, Hiltz, and Rotter (2002); Darabi, Sikorski, and Harvey (2006); Goodyear et al. (2001); Guasch et al. (2010); Salmon (2004); Varvel (2007); and Williams (2003). Because there is limited research that critically analyzes competency- or role-based online teaching, several studies from the teacher education field were included in order to frame the critique in the online teaching context.

Literature analysis and synthesis

The literature analysis and synthesis followed three phases. First, the articles were selected for analysis and then reviewed in terms of the purpose, context, methodology, and results. This process focused on identifying, listing, and organizing the concepts and themes used by researchers of each study while relating them to one another (Major, 2010). Themes of context, identified roles and competencies, faculty involvement, methods for identification, methods for testing, and implications for research and practice were identified.

Second, in an attempt to synthesize, the themes identified from each single study were compared and contrasted using the constant comparison approach (Glaser & Strauss, 1967). Using this method, competencies suggested within each role were compared with existing roles and competencies in other studies. The categories that emerged from this comparison included pedagogical, facilitator, instructional designer, social, managerial, and technical roles.

The third phase of the analysis consisted of formulating a critique of the standards- and competency-driven view of online teaching from the perspective of transformative learning theory.

Data interpretation: a theoretical frame

The transformative learning theory provided a rich framework with which to analyze the teachers' learning processes while teaching online. Since being proposed by Mezirow in 1991, transformative learning theory has evolved 'into a comprehensive and complex description of how learners construct, validate, and reformulate the meaning of their experience' (Cranton, 1994, p. 22). Mezirow (2000) explains transformational learning as follows:

Transformational learning is a way of problem solving by defining a problem or by redefining or reframing the problem. We often become critically reflective of our assumptions or those of others and arrive at a transformative insight, but we need to justify our new perspective through discourse. (p. 20)

Three constructs were explored in Mezirow's (1991) theory: centrality of experience, critical reflection, and rational discourse (Taylor, 1998). The learner's experience, being socially constructed or deconstructed, is central to transformative learning. It is through critical self-reflection that the learner questions 'the integrity of assumptions and beliefs based on prior experience' and this act of reflection 'is most essential for the transforming of our meaning structures – a perspective transformation' (Taylor, 1998, p. 16). Critical reflection is carried out in the medium of rational discourse 'where experience is reflected upon and assumptions and beliefs are questioned, and where meaning schemes and meaning structures are ultimately transformed' (Taylor, 1998, pp. 17–18).

At the core of transformative learning is the empowerment of the individual (Evans & Nation, 1993). The 'definition of empowerment involves three major ideas: the notion of choice, of control of one's life, and of emancipation from ways of thinking which for the particular individual have limited both choice and control' (p. 91). It is through transformative learning that the learner is empowered by being a 'mature and autonomous person' (p. 91).

Mezirow (1991) identified transformative learning as the very core of adult education, aiming at helping ‘the individual become a more autonomous thinker by learning to negotiate his or her own values, meanings, and purpose rather than uncritically acting on those of others’ (p. 11).

Central to the transformative learning process is ‘helping learners to critically reflect on, appropriately validate, and effectively act on their (and others’) beliefs, interpretations, values, feelings, and ways of thinking’ (Mezirow, 2000, p. 26). With the vast adoption of emerging technologies in everyday life at an increasingly participatory and social level, it has become inevitable for teachers to re-examine their beliefs and assumptions towards the new culture of learning and teaching, and related ethical practices. This, without any doubt, leads to constant challenges in teacher beliefs, judgments, interpretations, assumptions, and expectations (Coppola et al., 2002; Lee & Tsai, 2010). Therefore, a transformative learning frame can enable us to view teachers as adult learners who transform the meaning of structures related to teaching online through an ‘ongoing process of critical reflection, discourse, and acting on one’s beliefs’ (Taylor, 1998, p. 19). Yet the literature on online teaching is limited in terms of analyzing how ‘reflective online teacher-practitioners will work from a deep knowledge base (which relates to both their expertise in the discipline per se and their knowledge of what is known about online learning) and make their discoveries public and peer reviewed’ (Kreber & Kanuka, 2006, p. 122). This review therefore offers a unique examination of the research on online teaching, identifying what is lacking and suggesting an alternative frame for promoting online teachers’ transformative learning experiences.

The use of transformative learning theory in the context of online teaching is grounded in three fundamental premises: (a) viewing online teachers as active adult learners, (b) recognizing that transformative learning occurs through critical reflection, and (c) considering that transformation happens as teachers conduct pedagogical inquiry with technology. This critical analysis included searching for evidence of the existence or lack of these premises in the literature on online teacher roles and competencies.

Current literature on online teacher roles and competencies

The literature seems to be in agreement that online teaching is different from face-to-face teaching and that, as such, it requires the development of its own pedagogies (Kreber & Kanuka, 2006; Laat, Lally, Lipponen, & Simons, 2007; Natriello, 2005). While the traditional roles of teachers can be transferred to the online environment, the affordances and limitations of the new learning setting require teachers to adapt to new roles for creating effective and meaningful learning experiences (Coppola et al., 2002; McShane, 2004). Over the years, numerous online teacher roles have been mentioned in the literature using different terms and descriptions (Anderson et al., 2001; Berge & Collins, 2000; Coppola et al., 2002; Goodyear et al., 2001; Graham et al., 2001; Guasch et al., 2010; Salmon, 2004). Researchers have created taxonomies and models specifying the roles that online teachers need to perform while teaching online. Although the studies addressing these roles show variety in context and definition of an online teacher, commonalities can be found in the roles that teachers assume as they teach online.

Roles of online teachers

One of the early models describing the teacher's role in a virtual environment is the instructor's roles model, which identified teachers' functions under four different categories: pedagogical, social, managerial, and technical (Berge, 1995). The roles were defined within the online discussion context, in which the pedagogical role meant facilitating the learning in discussions; the social role meant encouraging and promoting working together; the managerial role meant organizing and designing the logistics of the discussions; and the technical role meant providing a transparent technology environment to the learners (Berge, 2009; Berge & Collins, 2000). These roles were suggested at a time when teachers were just moving to online environments, where the main activities were designed around online discussions. However, due to the rise of virtual worlds and other learning environments, Berge (2009) called for a change in the roles that would focus more on 'informal, collaborative, reflective learning, with user-generated content' (p. 412).

Online learning, by nature, changes the way teaching responsibilities are performed. Building on previous research, Anderson et al. (2001) suggested three categories for online teachers' roles to ensure teaching presence: instructional design and organization, facilitating discourse, and direct instruction. Teaching presence is defined as 'the design, facilitation, and direct instruction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes' (Anderson et al., 2001, p. 5). Research has found that teaching presence is a significant predictor of students' perceptions of learning, satisfaction, and sense of community (Gorsky & Blau, 2009; LaPointe & Gunawardena, 2004; Russo & Benson, 2005). Although teaching presence is considered to be what the teacher does to create a community of inquiry with social and cognitive presence, all participants within the online learning environment can also contribute to teaching presence by sharing the facilitation responsibilities (Baran & Correia, 2009).

While the aforementioned researchers looked at the teacher roles performed mainly in online discussion forums, Coppola et al. (2002) focused on the changing pedagogical roles of virtual professors in asynchronous learning environments: cognitive, affective, and managerial. In the cognitive role, teachers engage in deeper-level cognitive activities related to information storage, thinking, and mental processes. In the affective role, they need to find different tools to express emotions and develop intimate relationships with students. Finally, as part of their managerial role, they structure and plan the course in detail with increasing attention on monitoring their students.

In an effort to define online teaching roles and competencies, a group of researchers and practitioners described the main roles of online teachers: process facilitator, advisor/counselor, assessor, researcher, content facilitator, technologist, designer, and manager/administrator (Goodyear et al., 2001). Adopting these roles and looking at the perceptions of online mentors, Aydin (2005) identified additional roles, such as content expert, instructional designer, and materials producer. More recent research (e.g., Bawane & Spector, 2009) clarified the following online teacher roles emerging from the literature: professional, pedagogical, social, evaluator, administrator, technologist, advisor/counselor, and researcher. The results of Bawane and Spector's study indicated that the pedagogical role was the highestranked role,

followed by professional, evaluator, social facilitator, technologist, advisor, administrator, and researcher roles.

Competencies for online teachers

The prioritization of the roles and competencies of online teachers varies in the literature depending upon the context where online teaching takes place. For instance, technology-related competencies (Egan & Akdere, 2005), communication competencies (Williams, 2003), and assessment-related competencies (Aydin, 2005) can be considered more important than others depending on the context and culture within the online teaching environments.

While teachers may be the sole performers of online teaching roles, the teaching roles are often carried out by a number of actors (Guasch et al., 2010). For instance, the United Kingdom's Open University framed a collaborative model in distance education in which several individuals perform the roles (Salmon, 2004). E-moderator was one of the critical roles in supporting and encouraging interaction and communication for knowledge and skill development in the interactive and collaborative online environments (Salmon, 2004). Although Salmon's e-moderator concept stresses the importance of the facilitation role that online teachers undertake, it is limited in scope with respect to the diverse online teaching contexts where the online teacher takes the main responsibility for developing and maintaining an online learning environment and taking on different roles (Bennett & Lockyer, 2004).

Table 1 presents a summary of key research on online teacher roles and competencies, the purpose of each article, and the method used to identify and validate the competencies and roles at different levels.

Common roles identified in the literature

The online teacher roles identified in the literature comprised pedagogical, facilitator, instructional designer, social, managerial, and technical roles. These roles overlapped in terms of their functions and tasks. Some researchers categorized teaching-related tasks, such as designing and implementing instructional strategies, developing learning resources, and facilitating and sustaining students' participation and motivation under the pedagogical role on a more general level (Bawane & Spector, 2009). Others separated these tasks and proposed a role for each task, for example, process facilitator for providing prompts and responses to guide students' learning (Bennett & Lockyer, 2004), instructional designer for designing instructional materials and strategies, and managerial role for carrying out the tasks of course management.

Table 2 presents online teacher roles as suggested in the literature. Although the table was adapted from Bawane and Spector's (2009) study on the prioritization of online instructor roles, additional roles were included from other studies focusing on teachers' roles in online learning environments (e.g., Anderson et al., 2001; Berge, 2009; Coppola et al., 2002).

Instructional design is often considered an important role for online teachers. This role is concerned with planning, organizing, and structuring the course components (Anderson et al., 2001), designing learning tasks (Goodyear et al., 2001), and designing interactive technologies and teaching strategies/models (Williams, 2003).

Table 1. Summary of the existing literature studies on online teacher roles and competencies.

Studies	Purpose	Method
Guasch et al. (2010)	Developed teachers' competencies for virtual environments in higher education	Reviewing the literature and teacher training actions
Bawane & Spector (2009)	Prioritized and identified online instructor roles to develop training and curricula for online teachers	Validating the literature and identifying competencies with experts in teacher education
Varvel (2007)	Developed an online instructor competency list geared to the needs of a particular program	Developed an online instructor competency list for a particular program
Berge (1995); Berge (2009)	Listing the roles and functions of the online instructor in computer conferencing (CC)	Conceptual paper revisited in 2009
Darabi et al. (2006)	Identified and validated instructor competencies required for teaching at a distance with advanced communication technology.	Reviewing the literature and validating with experienced practitioners in academia, industry, and the military
Aydin (2005)	Identified roles, competencies, and resources for online teaching in Turkey	Surveying online mentors in a large open university
Salmon (2004)	Defined e-moderator competencies	Analyzing the content of the reflections conference and focus group interviews, etc.
Williams (2003)	Identified roles and role-specific competencies	Validating the literature and identifying competencies with the experts in teacher education using the Delphi technique
Coppola et al. (2002)	Captured role changes enacted by online instructors	Capturing roles enacted by the online instructors through interviews
Anderson et al. (2001)	Developing the conceptual framework to understand, measure and improve the function of 'teaching presence' within a computer conference environment	Investigating computer conferences used for educational purposes
Goodyear et al. (2001)	Described main roles that online teachers perform	Using a panel of distance education experts to determine the roles and competencies

Furthermore, it consists of the tasks of maintaining and organizing learning, and making sure that learning goals are achieved (Guasch et al., 2010).

The managerial role comprises carrying out the pedagogical tasks related with course management (Berge, 2009; Coppola et al., 2002). It consists of tasks such as course planning, organizing, leading, and controlling (Coppola et al., 2002). Management also includes teachers carrying out planned actions, managing communication channels, and supervising the virtual learning process (Guasch et al., 2010). This role is also used with the administration role in order to describe the functions of managing the course and establishing rules and regulations, and involves such issues as student registration, recordkeeping, and security (Aydin, 2005; Bawane & Spector, 2009).

The social role is one of most emphasized roles and it refers to teachers' functions related to building and improving student-teacher relationships in a virtual

Table 2. Roles associated with online teaching (adapted from Bawane & Spector, 2009, p. 389).

Studies	Roles
Guasch et al. (2010)	Design/planning, social, instructive, technological, management
Bawane & Spector (2009)	Professional, pedagogical, social, evaluator, administrator, technologist, advisor/counselor, researcher
Berge (1995); Berge (2009)	Pedagogical, social, managerial, technical
Varvel (2007)	Administrative, personal, technological, instructional design, pedagogical, assessment, social roles
Aydin (2005)	Content expert, process facilitator, instructional designer, advisor/counselor, technologist, assessor, material producer, administrator
Williams (2003)	Administrative manager, instructor/facilitator, instructional designer, trainer, leader/change agent, technology expert, graphic designer, media publisher/editor, technician, support staff, librarian, evaluation specialist, site facilitator/proctor
Coppola et al. (2002)	Cognitive, affective, managerial
Anderson et al. (2001)	Instructional design, facilitating discourse, direct instruction
Goodyear et al. (2001)	Process facilitator, advisor/counselor, assessor, researcher, content facilitator, technologist, designer, manager/administrator

learning environment (Guasch et al., 2010). Due to the complexity of the many tasks of online teachers at the cognitive and managerial levels, teachers can 'no longer rely upon sensory and expressive skills to establish and maintain relationships with students' (Major, 2010, p. 2184). Therefore, taking on the affective or social role becomes very important in nurturing social relationships, expressing energy and humor, and establishing an expressive connection with the students (Coppola et al., 2002).

The online environment changes the fundamental nature of the interaction between the teacher, student, and content, requiring a re-examination of the roles teachers take in enhancing students' learning. Because online students are expected to take greater control of their learning process and be more active in stimulating their peers' learning, facilitation of online learning emerges as an important role in guiding these student-centered approaches. Moreover, as the hierarchy in the online environment is flattened with more distributed power and control (Schrum & Hong, 2002), teachers are expected to adopt more facilitative approaches in creating learner-centered online classrooms (Salmon, 2004; Smith, 2005). While there is still a strong focus on the responsibilities of teachers in online courses, the teacher moves from being at the center of the interaction or the source of information to the 'guide on the side,' which implies that teachers design, organize, and schedule the activities and learners assume greater responsibility for their learning by coordinating and regulating their learning activities (Anderson et al., 2001; Berge, 2009).

In an online learning environment, teachers are not the sole performers on the online teaching stage. They share the roles and responsibilities with other actors, such as instructional designers, program coordinators, and graphic designers. The roles required for online teaching may be delegated to a number of specialized professionals and teams, for example, instructional support personnel, instructional designers, teaching assistants, technology experts, media developers, online program

coordinators, and even other faculty (Howell et al., 2004; Miller, 2001; Paulson, 2002). Online teachers often collaborate with other key actors to a much greater extent than their face-to-face counterparts in order to receive support and help during the planning, design, and delivery of online courses (Bennett & Lockyer, 2004).

The literature suggests that the proposed roles and competencies of online teachers are useful in curriculum, training, professional development of online teachers (Bawane & Spector, 2009; Williams, 2003), and staff selection for online teaching (Williams, 2003).

Emerging issues in online teaching research

If a distinct pedagogy of online learning is to emerge, the role of online teachers in the online environment needs to be explored. As shown above, the literature describes a variety of roles and competencies for online teachers. These competencies are described as knowledge- or performance-based with the terms *competent* and *exemplary* used to emphasize the exhibition of competencies at different levels (Varvel, 2007). Online teachers 'are required to possess a diverse set of competencies and their extent of utilization relies on the context or role they are required to perform and also the kind of resources and support available' (Bawane & Spector, 2009, p. 387).

While the literature on the roles and competencies of online teachers recognizes the importance of context in the performance of these functions, it is limited in terms of sharing strategies for transforming teacher practices for online teaching and helping them understand and adapt to the new teaching environment. 'The adult education literature has recently addressed professional development and teacher education as adult learning' (King, 2002, p. 286). Moreover, transformative learning has been suggested as a critical basis for faculty development (Cranton, 1994; King, 2002). However, the literature on online teacher roles and competencies is lacking in adequate discussion of online teachers' transformational learning, particularly in terms of strategies for facilitating their transformation as they move from face-to-face teaching to online teaching.

Reviewing the literature on online teacher roles and competencies with these premises, this study identified three dimensions that are lacking in the current approaches and that need further exploration: (a) empowering online teachers, (b) promoting critical reflection, and (c) integrating technology into pedagogical inquiry. The dimensions of online teachers' transformational learning are shown in Figure 1.

Empowering online teachers

Many studies on defining online teacher roles and competencies follow a 'technical view of teaching,' which 'tends to focus on the primacy of knowledge and value transmission rather than a broader sense of education' (Rennert-Ariev, 2008, p. 113). This functionalist type of orientation in competency-based teacher education approaches has been criticized, with concerns questioning the assertion that the roles are assumed to be taken by the individuals without resistance, rejection, and re-creation (Rennert-Ariev, 2008). Often, these functionalist views 'downplay the importance of teacher agency in defining and shaping the terms of their experience' (Rennert-Ariev, 2008, p. 113). Similarly, the literature on online teacher roles and

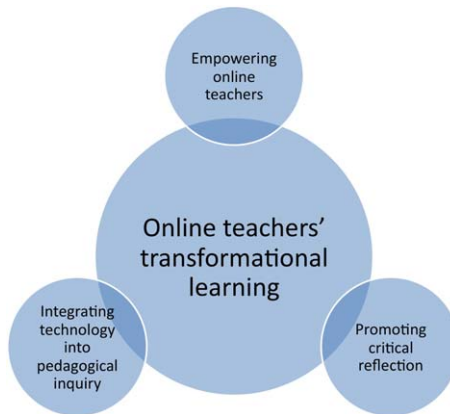


Figure 1. The dimensions of online teachers' transformational learning.

competencies has limited mention of the value of the interaction between the perspectives of individual teachers and the values of the online teacher professional development and support programs. The role of the teacher in the creation of the content and values of such a program is also lacking in the current literature.

'Transformative learning contributes to empowerment as a process of being one's own mature and autonomous person' (Evans & Nation, 1993, p. 91). It is through critical reflection that teachers can be empowered as autonomous and self-directed professionals who constantly engage in a dialogue about solving complex problems, making decisions, reflecting in action, and collaborating with other key actors. Teachers should not be expected to simply accept the competencies and roles suggested by an authority; instead, they must reflect on their roles as they become aware and critical of their own assumptions towards online learning and teaching. The roles and competencies are generally developed by a group of experts identified as knowledgeable about distance education and educational technologies (Bawane & Spector, 2009; Goodyear et al., 2001; Williams, 2003). However, research has been limited in terms of bringing teachers' voices into this process; thus creating the potential for teachers' regression into passive roles. Moreover, studies aimed at collecting data from teachers generally used surveys in order to validate and prioritize already established roles and competencies (e.g., Aydin, 2005). Such studies need to be driven by the intention to focus on teachers not as passive learners and performers of established roles and competencies, but as participants, expressing potentially varying degrees of conformity with and resistance to the roles of online teaching. The notion of emphasizing standards-driven, technical, one-size-fits-all online teaching approaches is insufficient for addressing the complex educational needs of each unique online teaching context.

The concept of empowerment is rarely brought to the forefront in the context of online teacher education and professional development. Research needs to explore strategies for facilitating the empowerment of online teachers. Empowerment may enable teachers to teach innovatively and explore ways to promote empowerment of online students. Moreover, since teacher learning is not static, but instead a continuous process, ways of empowering teachers as learners during their online teaching experiences need to be examined.

Promoting critical reflection

Transformative learning ‘involves transforming frames of reference through crucial reflection on assumptions, validating contested beliefs through discourse, taking action on one’s reflective insight, and critically assessing it’ (Mezirow, 1997, p. 11). It is through such critical reflection that personal empowerment is realized by challenging assumptions rather than accepting them as they are.

Reflection is a key factor for improving a teacher’s practice. Schön (1983) asserts that engaging in the process of continuous learning is an essential feature of professional practice:

Both ordinary people and professional practitioners often think about what they are doing, sometimes even while doing it. Simulated by surprise, they turn thought back on action and on the knowing which is implicit in action. They may ask themselves, for example, “What features do I notice when I recognize this thing? What are the criteria by which I make this judgment? What procedures am I enacting when I perform this skill? How am I framing the problem that I try to solve?” (p. 50)

It is through reflection in action that practitioners can bring to the surface the tacit understandings that build on the specialized and repetitive practice and deal with the ‘situations of uncertainty, instability, uniqueness, and value conflict’ (Schön, 1983, p. 50). Schön (1988) also talks about ‘reflection on action’ as a retrospective practice. *Reflection in action* (during the experience) and *reflection on action* (after the experience) have become two essential elements of professional training and development in different disciplines. Also of importance to online education is teachers’ ability to perform critical reflection, which can be defined as ‘the process by which adults identify the assumptions governing their actions, locate the historical and cultural origins of the assumptions, question the meaning of the assumptions, and develop alternative ways of acting’ (Stein, 2000, p. 3). Critical reflection ‘merges critical inquiry, the conscious consideration of the ethical implications and consequences of teaching practice, with self-reflection, deep examination of personal beliefs, and assumptions about human potential and learning’ (Larrivee, 2000, p. 293).

One of the threats to the growth of a distinct online pedagogy is the limited focus on reflection. Once teachers internalize the routines of online teaching, the roles they are expected to take and the methods they are to use, their ability to cope with that is guaranteed and with it the need to grow as an online teacher fades. The result is replication of the same class material and content each time it is taught, without the adoption of new methods and technologies into the learning context. While the roles are suggested to teachers with the functions performed as specific outputs (Bawane & Spector, 2009; Howell et al., 2004), they do not guide teachers for ‘pedagogical problem solving and discovery’ through critical reflection in online teaching (Kreber & Kanuka, 2006, p. 122).

Online learning environments have the capability of enabling the exploration and discovery of new pedagogical approaches, such as encouraging participatory, inquiry-based social learning practices (Kreber & Kanuka, 2006). Therefore, the focus of online teacher preparation and development programs needs to be geared towards encouraging online teachers’ critical reflective practices, through which they engage in transformative learning practices with their students.

Integrating technology into pedagogical inquiry

Another problem related to the existing literature is treating technology as a separate entity, such as the role of technologist in Goodyear et al.'s (2001) study, technological role in Berge's (1995) study, and technical skills in using the features of the software in Salmon's (2004) study. However, Koehler, Mishra, and Yahya (2007) argue that 'technology cannot be treated as a knowledge base unrelated and separate from knowledge about teaching tasks and contexts – it is not only about what technology can do, but also, and perhaps more importantly, what technology can do for them as teachers' (p. 742). As a result, researchers, particularly in the area of technology integration, argue for a more integrated and multidimensional teacher knowledge (Mishra & Koehler, 2006).

The literature on online teacher roles and competencies puts limited emphasis on how pedagogical inquiry plays a role within a certain discipline (e.g., English literature, anthropology, design). 'The questions that academics from sociology ask about student learning and teaching will be different from those posed by engineers, as will be the methods they use to seek answers to their questions' (Kreber & Kanuka, 2006, p. 113). Therefore, we need to consider how students learn and develop in different disciplines and how teachers can encourage these learning experiences with online technologies. Online teachers need to go beyond mere competence in the online technologies, and engage in pedagogical inquiry in which they consider the complex relationships between technologies, pedagogies, and the content in their online teaching context (Koehler & Mishra, 2005). It is through the integration of technology into the pedagogical inquiry that teachers can go through a transformative process of examining the pedagogical potential of online technologies and constructing online learning experiences within their content areas.

Concluding remarks

This review aimed to use transformative learning theory as a lens for critical analysis of the literature on the roles of online teachers, and specifically the role- and competency-driven approach to defining these roles. This analysis shows that there is diversity in the meanings of the terms *roles* and *competencies* of online teachers. Commonly identified roles are managerial, instructional designer, pedagogical, technical, facilitator, and social roles. For each role, several competencies have been suggested depending on the context in which the online teaching is being performed (Bawane & Spector, 2009). Although this line of analysis has suggested the use of these roles and competencies for the development of teacher preparation and training programs, it lacks in terms of addressing the issues of empowerment of online teachers, promoting critical reflection, and integrating technology into pedagogical inquiry. Moreover, while competency-based teacher education has been criticized in the teacher education literature both at the pre-service and in-service levels (Téllez, 2007), the literature on online teaching has remained silent on the critical analysis of the use of competency-based teacher education models in online teacher education.

As a result of the critique by teacher educators of the competency-driven approaches, the teacher education literature has moved on to different models, such as reflective teacher education, constructive teacher education, and alternative certification (Téllez, 2007).

Like the accountability movement, CBTE [competency-based teacher education] did not require significant increases in state education budgets, held the promise of systematic changes, was focused on results – instead of the messy and confusing processes nested within most educational reforms – and, finally, seemed capable of paying off quickly. (Téllez, 2007, p. 548).

Today's competency- and standards-driven efforts in online education have a similarly attractive quality, yet embody the same limitations. Furthermore, earlier works on online education were grounded in the motivation of systematization and industrialization of educational processes via technology. This techno-centric approach, still dominant in many forms of today's online education, resulted in the replication of traditional approaches in the online environments and created one-size-fits-all preparation and support programs for online teachers.

Different from these functionalist and technical perspectives towards teacher knowledge and practice, transformative learning theory holds promise for providing a perspective on considering teachers as adult learners who continuously transform their understanding of structures related to online teaching through an ongoing process of critical reflection and action (Taylor, 1998). According to Mezirow (1991), transformative learning:

involves an enhanced level of awareness of the context of one's beliefs and feelings, a critique of their assumptions and particularly premises, an assessment of alternative perspectives, a decision to negate of old perspective in favor of a new one or to make a synthesis of old and new, an ability to take action based upon the new perspective, and a desire to fit the new perspective into the broader context of one's life (p. 161).

We need to consider online teachers, especially in higher education, as reflective practitioners who make their own decisions about preferred goals and practices of online teaching and construct 'a working knowledge, which favors personal experience but also includes theory, research, values, and beliefs, and is used to critically analyze and continually improve teaching' (Valli, 1992, p. xv). Encouraging online teachers to consider alternative viewpoints and frames of references thus needs to be the focus of the online teacher preparation and professional development programs.

'Teaching involves many complex and somewhat ill-structured activities; as a consequence, establishing reliable and relevant performance measures for teaching competence is difficult' (Spector, 2007, p. 6). Similarly, the teacher's role in the online environment is dynamic and multidimensional, requiring a more integrated look as teachers work through pedagogical problem solving within their disciplines and use various online technologies. Approaches to online teacher preparation and support, therefore, need to regress from the technology-focused programs, which treat technology as a separate entity to be learned and an isolated role to be performed. What is needed is the creation of transformative learning experiences for online teachers who would 'engage in pedagogical problem-solving and discovery about online teaching' within their disciplines (Kreber & Kanuka, 2006, p. 122).

'Online learning can enable and inspire instructors to acquire radically new and different understandings of pedagogy, as well as transform practices entrenched in university traditions that are less effective in promoting higher-order learning' (Kreber & Kanuka, 2006, p. 125). This critical review has been an attempt to address the limitations and issues in the current literature and propose an alternative

view towards the development of competencies for teaching online. If the purpose of online learning is to promote students' higher-level learning as well as to develop their critical and creative thinking skills, teachers need to be empowered and encouraged to be active adult learners themselves as they act with critical power in their world, and to take charge of their own learning.

Directions for future research

The dimensions of online teachers' transformational learning – empowering online teachers, promoting critical reflection, and integrating technology into pedagogical inquiry – should be explored further to support and sustain online teacher transformation and professional development. As it is critical to gain access to the perspectives of teachers in examining the transformation, data can be gathered using such methods as participant observation, ethnographic interviews, and reflective journals. Moreover, action or participatory research methods can be used to involve online teachers in such research processes as they investigate their own transformation and reflect upon their practices, perspectives, and assumptions.

While studies about online teacher experiences represent important exploratory research, future research should also focus on how collective transformation occurs within organizations and communities. It should also investigate the varied ways in which teachers, communities, and organizations transform through online learning initiatives, and the roles that different actors take in the creation of content, values, and practices during this transformation.

Implications for practice

As teachers move from traditional to online classrooms, they face constant challenges of finding their teacher-self. While there is the tendency for online teachers to lean to their traditional teaching practices as reference points, the affordances and limitations of online environments will pose new challenges for them as they try to operate within their existing sets of beliefs and practices. Programs preparing faculty to teach online need to encourage them to critically reflect upon their past experiences, assumptions, and beliefs towards learning and teaching, question them, and transform their perspectives by engaging in critical reflection, pedagogical inquiry and problem-solving. Through this process, teachers need to be provided with a collaborative working environment where their needs are listened to and solutions are suggested according to the variables in their teaching contexts, such as their level of technology use, schedules, student profiles, and their teaching methods in the face-to-face classrooms.

Support programs need to consider teachers as active agents during this process. Instead of building courses for them, a collaborative culture around course design and development needs to be provided and supported. Technology staff and instructional designers should constantly engage in a dialogue about solving problems and making decisions regarding the design and teaching processes of online courses. *Collaborate with online teachers and listen to their voices as they transform and create their online teacher personas.*

Online teachers often feel uncertain, uneasy, and unprepared for the challenges of teaching online, and also lacking in the tools and conditions that they use to establish their expertise and teacher persona in the traditional classrooms (Major,

2010). Support and development programs are critical in helping teachers engage in the process of pedagogical inquiry and problem solving as they reflect upon the interactions between content, online technologies, and pedagogical methods within their unique teaching contexts. While learning about new online technologies is important, online teachers need opportunities where they can explore ways to transform their existing pedagogies to the online environment, thinking about the limitations and affordances of the online technologies for their pedagogical purposes. *Online teachers should be encouraged to pursue pedagogical inquiry and creativity.*

Online educational environments have the potential for enabling the exploration and discovery of new pedagogical approaches, such as encouraging participatory, inquiry-based and social learning practices (Kreber & Kanuka, 2006). This notion of de-centering of the teacher in the online classroom poses new challenges for online teachers. Online teachers need to be guided in finding ways to support their learners' independence and autonomy in the online environment. *Attempts should be made to engage teachers in learner-centered teaching approaches.*

It is critical to prepare and support teachers for online teaching so that they know what to expect and how to establish their online teacher persona through online pedagogies, and also develop positive attitudes towards online teaching. By incorporating collaborative work groups, community building, and group discussions into professional development programs, and sustaining their continuity, teachers will have an opportunity to participate in communities of practice and transform their teaching by socially constructing their knowledge and practices (King, 2002). *Online teachers should be encouraged to promote community building around online teaching.*

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