

The Pedagogical Variation Model (PVM) for Work-Based Training in Virtual Classrooms: Evaluation at Kuwait University

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A collaborative research initiative was undertaken to evaluate the pedagogical variation model (PVM) for online learning and teaching at Kuwait University. Outcomes from sample populations of students—both postgraduates and undergraduates—from the Faculty of Education were analyzed for comparison. As predicted in the PVM, the findings indicate that online e-learners do have preferences for particular e-moderator online teaching strategies. No generalizations can be made due to the small size of the sample. However, joint international research initiatives are developing online learning materials in order to widen access to Web courses and resources.

Cet article porte sur une initiative de recherche collaborative entreprise pour évaluer le modèle de variation pédagogique (MVP) dans l'apprentissage et l'enseignement en ligne à la l'Université du Koweït. Nous avons analysé, à des fins de comparaison, des résultats tirés d'échantillons d'étudiants des premier, deuxième et troisième cycles de la faculté d'éducation. Tel que prédit par le MVP, les résultats indiquent que les apprenants en ligne ont effectivement des préférences quant aux stratégies d'enseignement en ligne avec modérateur à distance. La taille réduite de notre échantillon ne nous permet pas d'en tirer des conclusions générales. Toutefois, des initiatives de recherche entreprises avec des partenaires internationaux visent le développement de matériel pédagogique en ligne de sorte à élargir l'accès aux cours et aux ressources en ligne.

This research article introduces current research carried out within Kuwait University's Faculty of Education, by a team of researchers working with educators to evaluate the pedagogical variation model (PVM; Rogers & Aldhafeeri, 2014). This joint paper is the outcome of findings emerging from our exploratory investigation. The analysis of the findings reveals interesting outcomes. Over two decades ago, Hiltz (1986) posed the following question: "Is it possible to build a 'virtual classroom' an interactive communication and learning space located within a computer system?" (p. 95). The design of the PVM for online learning and teaching (Rogers & Aldhafeeri, 2014) has brought about an innovative conceptualization for teaching professionals to adopt new learning technologies, in which both opportunities and challenges emerge. Traditional face-to-face classroom teaching involves verbal and nonverbal communication, with the eyes and voice arguably at the center of the craft of successful teaching. However, it is

sometimes assumed that any teacher can transfer these “face-to-face” skills into their online pedagogy.

Rogers (2004) argues that teachers’ leadership qualities play a significant part in “virtual” as well as traditional classroom teaching practices, but that other skills also have to be acquired and nurtured in training. Rogers (2004, 2005/2011), along with Salmon (2000, 2002), Garrison (2011), Armellini and Jones (2008), and Turkle (2011) have investigated the role of teachers in e-learning and the teaching role in online education. The context for this is the asynchronous learning network environment, in which teaching and learning are not in real time. Synchronous e-learning is the mode of learning in which learners and instructor are interacting at the same time over an electronic learning medium. Asynchronous e-learning, in contrast, does not require instant communication, such as email. Asynchronous e-learning, therefore, may include “on-demand delivery” that aims to give learners more control over the pace, process, and content of the study. However, this also brings the potential for more pressure on teachers, in a way that is both very visible and also an aspect of unseen work. Teachers in the context of asynchronous e-learning have more responsibilities to respond to learners’ queries without considerations for time constraints and amount of work given. Teachers’ work then is visible. However, this amount of time and efforts devoted to respond to learners queries would add more workload to the teachers with no adequate recognition by their superiors.

The United Kingdom Department for Education and Skills’s (DfES; 2005) e-strategy *Harnessing Technology: Transforming Learning* emphasizes a collaborative approach to the provision of personalized learning, as well as plans for integrated teaching, research, and administrative network for education. The strategy proposes common systems and open standards for electronic learning (e-learning), as well as the development of functional e-collaborative partnerships as an explicit strategic priority. Cross-institutional partnerships are seen as a way of enabling all schools, colleges and universities to progress. In the UK, the DfES (2003a) recognizes the multidimensional developments in international standards and specifications for e-learning content. There are now increasingly powerful ways of describing the emergence of computer-mediated educational materials/resources and online Web courses designed by an international community of e-learning designers. At the same time, e-moderation is beginning to evolve within culturally diverse learning environments, and the need for continuing professional development is seen to be at the heart of the e-moderating community. In this way, e-moderators recognize the need to respond effectively to cultural diversity within global contexts. Ellaway, Dewhurst, and Cumming (2003) along with international partners including the Australian Department of Education, Science, and Training (DEST), is currently leading an initiative to build the e-Framework for Education and Research. This is a common, service-oriented approach to the development and integration of computer systems in the spheres of learning, research, and education administration. The e-framework is the result of a shared conviction that it is better to expose networked functions, such as user/group data or learning content, as simple services rather than as features locked up inside monolithic systems. For example, supporting learners’ engagement with the learning process by enhancing knowledge construction through assigning activities that adequately match online learning styles, offers institutions more flexibility, more scope for pedagogic innovation, and better return on present and future investment.

The UK Government’s e-learning strategy points to the need for effective learning design tools in order to help practitioners develop and deliver their own learning activities. The literature aimed to decrease the gap in knowledge about how and/or whether leadership

qualities among online teachers bring about successful online teaching and learning (Rogers, 2004, 2005/2011). Hiltz (1994) coined the expression *virtual classroom* “for the social invention of building and operating computer-mediated communication systems to support dispersed communities of active learners” (p. 5). With the global widespread implementation (DfES, 2003b) and increasing use of asynchronous learning networks (ALNs) in virtual learning environments (VLEs) in the UK, as well as in higher education (HE) and further education (FE), there has been a demand from e-moderating practitioners for more effective guidance on good pedagogical practices as suggested by JISC, a United Kingdom non-departmental public body (JISC, 2014). A specific call has been made for help designing e-learning activities in these environments. Developments in learning design offer new ways of integrating materials and activities in a pedagogically informed manner (Goodyear, 2001; Thorpe, 2009). These developments also offer rich frameworks for modeling socio-cultural cognitive interactions (Bass & Elmendorf, 2011; Garrison, 2011; Russo & Benson, 2005; Vygotsky, 1978) in virtual learning spaces.

Statement of the Problem

Underpinning the research for the creation of the pedagogical variation model was the assumption that online teachers exhibit certain qualities, such as knowledge of online learning technologies, expertise in using computer-mediated communication skills, creative problem-solving, socializing, and online knowledge sharing with others (Avolio, Sosik, Kahai, & Baker, 2014). To find out how teaching and learning are conducted online, the researchers in the current study, Rogers and Aldhafeeri (2014) critically explore many features from the literature associated with pedagogical conceptual frameworks found in both traditional face-to-face and virtual classrooms. Garrison (2011), in his proposed framework for learning in the 21st century, noted the absent notion of pedagogical leadership, since “the teacher’s scholarly leadership ... a legitimate and important authoritative, essential teaching responsibility has been either ignored or downgraded, in online learning environments” (p. 70). Thus, the current research problem was to address this gap in knowledge on pedagogical leadership in online teaching, by developing a model for online teachers, based on e-moderator leadership qualities (Rogers, 2004, 2005/2011) for teaching and learning in asynchronous discussion forums.

Research Question

In this study, the researchers attempt to answer the following main research question: To what extent can a model prescribe what online teachers ought to do in asynchronous learning networks (ALNs) when framed within or by e-moderators’ perceptions of their online roles?

Objectives

Four main research objectives resulted in the original research design, namely to:

1. Conceptualize and develop a model for online teaching and learning;
2. Elicit e-moderator perceptions of their online roles in asynchronous discussion forums;
3. Corroborate the emerging conceptual framework with data from (2); and
4. Design and implement a hypothesis testing instrument to evaluate the hypothetical model

for online teaching and learning.

Review of Relevant Literature

A hypothetic-deductive methodology was selected because the conceptualization of three testable hypothetical models for online teaching and learning became the starting point of the empirical investigation. These three models, prescribe how e-moderators ought to consider e-learners' online behaviors in their online teaching. The models were corroborated by data from an empirical study adapting personal construct psychology (Kelly, 1955/1991) to elicit e-moderator perceptions about (i) what they do online and (ii) what their e-learners are able to do online. The corroborated hypothetical framework for pedagogical variation was presented as a falsifying model (Popper, 2002) to the orthodox constructivist online teaching and learning theoretical framework.

The falsifying for pedagogical variation underwent hypothesis testing to prove or disprove the claims made. It was recognized that the hypothetical framework of a model for pedagogical variation can never be fully confirmed because it may be disproved/refuted at a later date, with further openness to scrutiny using refined research methods (Babbie, 2004; Dooley, 1984; Popper, 2002; Willig, 2008). Before examining different pedagogical models in the literature review (Babbie, 2004; Dooley, 1984; Popper, 2002; Willig, 2008) the characteristic features underlying the context of online teaching and learning were investigated and explored. These characteristics, namely the invisible identities of e-peers and e-moderators in VLEs, the asynchronicity of ALNs, reflection in online teaching and learning, collaborative knowledge construction, and e-moderating competencies, are examined in the following sections.

The Virtual Classroom: Invisibility of the “Other”

Garrison (2011) notes that “the challenge of creating a cohesive community of inquiry in a medium that provides no visual clues, other than words or images on a screen presents a unique challenge for educators” (p. 48). Without the physical presence—that is, the “absence of body” (Stone, 1991, p. 81) in the virtual classroom—computer-mediated communication can develop a sense of total impersonality. Personal identities, through the presentation of self by non-verbal behaviors (Goffman, 1959) of real people, become invisible, as their virtual identities become visible in online social interactions in their virtual existence (Miller, 1995). Stone (1991) claims that an imaginary e-self emerges for some people, with ideas and thoughts quite different from those of the original people: “Sometimes a person’s online persona becomes so finely developed that it begins to take over their life off the net” (p. 84). Baym (1995) concedes that:

Because computer-mediated interactants are unable to see, hear and feel one another, they cannot use the usual contextualization cues conveyed by appearance, non-verbal signals and features of the physical context. With these cues of social context removed, the discourse is left in a social vacuum, quite different from face-to-face interaction. (pp. 139–140)

Facial expressions have powerful communicative qualities in face-to-face discourse, especially the presence or absence of eye-contact (Riches, 1992). Complex forms of behavior, called phatic functions by semiologists, are a frequent occurrence in everyday person-to-person dialogue. A verbal exchange such as “Nice morning, isn’t it?” is an example of a phatic function

that conveys a sense of sociability, rather than communicating a specific meaning. While text-based online communication allows such verbal exchanges, it lacks visual facial expressions, hand gestures, and nods of the head, and as such, is devoid of real physical human encounters. With regard to a person's disposition to technology-driven systems, Mezirow (1990) concludes that:

Perspectives are transformed when learners encounter disorientating dilemmas ... that cause anxiety and inaction. By simply getting involved in an online class, a learner immediately encounters a disorientating dilemma. This is a new medium in which participants interact differently and in which students are expected to engage with the material, each other and the instructor in a completely different way. (p. 130)

For some students, the virtual classroom is impersonal and isolating, causing them to disengage by dropping out of their course resulting in them being unable to finish it. For others, the psychological problems presented by an absence of a physical body and the presence of invisible others (e.g., e-peers and an online tutor), may cause students to do only the minimum to complete the course, but not come online—in other words, demonstrate lurking behaviour (Mazzolini & Maddison, 2003; Romiszowski (2004) . Thus, lurking behaviour is when students do not participate in the online discussion unless they are called upon to do so. They may not be present online and show up only when deemed necessary. Lurking learners are like the passive learners in the normal classroom setting who do not take leadership roles during class discussion and do not actively interact with other classmates.

Participants in online distance education can feel isolated due to lack of person-to-person contact, and both students and tutors alike may feel uncomfortable with the use of student-centered, collaborative, transformational learning activities because they change the traditional social structure of a transactional, teacher-centered classroom environment. Creating a friendly social environment for learning (Turkle, 1997) is seen as an essential e-moderator skill. Sending welcome messages at the beginning of a module and encouraging participation throughout the module are specific examples. However, providing continuous feedback on students' inputs and using a friendly, personal tone are equally important (Paulsen, 1992) in fostering a friendly environment. The paradox of 'talking without seeing' has been well researched by Kraut, Fussell, and Siegal (2003). They show that when people share a greater amount of common ground, such as being members of the same group or population (e.g., the same undergraduate online cohort), they can construct and expand their common ground over the course of their interactivity on the basis of linguistic co-presence (Kraut, Fussell, & Siegal, 2003, p. 15). At the same time, they can share a common ground for physical co-presence when they inhabit the same physical setting, such as belonging to (i.e., being enrolled in) the same university campus.

Within virtual classrooms, interaction among students and between students and the instructor, and high-quality content and instruction are desired features of all courses (Mowen & Parks, 1997; Schrum & Berge, 1997). An emerging question is whether online tutors are able to emulate this kind of flexible teaching which, on the one hand, is constructivist and, on the other hand, is instructivist. Constructive learning provides students with a more active role in directing their learning as it is based on their previous experiences and current abilities. It also enables learners to be self-directed. Instructive learning, in contrast, allows instructors to control and direct the learning process to meet the planned learning objectives. Hull and Saxon (2009) investigated the negotiation of meanings in online knowledge construction through

social interactions among teachers during an online professional development course. By using an experimental approach, intentionally manipulating the tutor interventions, and utilizing open-ended questioning and frequency of tutor feedback, 782 e-learner postings were analyzed from the total sample ($n = 24$). Hull and Saxon raised “concerns about whether or not instructors employ instructional strategies that influence social knowledge construction and subsequent learning outcomes from asynchronous online courses” (p. 637). The research findings seem to indicate, paradoxically, that the social construction of knowledge in a constructivist environment does not happen in the absence of an online teacher. This evidence suggests that no matter what happens to a course and its program structure, the human factor—specifically, the role of the e-moderator—will be critical in the acceptability and success of online learning communities. The next section discusses the nature of asynchronous learning networks (ALNs), as the research investigation is broadly concerned with teaching and learning in VLEs and with ALNs more specifically.

The Nature of Asynchronous Learning Networks in VLEs

Asynchronous learning networks allow for the communication of text messages from one person to many or many persons to one person. A good definition of asynchronous is given by Pallof and Pratt (1999), who define it as:

a type of communication that can occur at any time and at irregular intervals, meaning that people can communicate online without a pattern of interaction. It is the predominant mode of communication used in emails, UseNet groups and on bulletin boards and websites. (p. 189)

This type of communication is in direct contrast to one synchronous communication, in which the participants communicate in real-time. The spontaneity of this type of communication promotes immediate responses, which may be seen as a disadvantage (Berge, 1995; Garrison, 2001) because the time-lag in the asynchronous medium allows for messages to be sent at any time. The advantage then is that e-learners and the e-moderator or online teacher can communicate in a relaxed way, with the opportunity to reflect on each other’s online contributions.

Garrison (2011) reiterates that not only do asynchronous characteristics contribute to the effectiveness of online learning and teaching, but also the properties of connectivity (i.e., collaborative features) within the computerized networks. These researchers conclude that asynchronous communication inherently provides for both reflection (construct) and discourse (contribute). The manifold opportunities to socialize online offer a multiplicity of learning opportunities in a community that learns to socialize, in which the social construction of knowledge is said to become evident. Berger and Luckman (1966) argue about the role of reciprocity in the establishment of both identity and social relations, concluding that:

identity is formed by social processes. Once crystallized, it is maintained, modified, or even reshaped by social relations ... Conversely, the identities produced by the interplay of an organism, individual consciousness and social structure react upon the given social structure, maintaining it, modifying it, or even reshaping it. (p. 173)

The challenge for the teacher is to know when to emphasize reflection and when to

emphasize discourse. At the beginning of a learning experience, considerable structure and support are required to establish a cognitive presence. Historically, Dewey (1933), who himself drew on the ideas of many earlier educators such as Plato, Aristotle, Confucius, Lao Tzu, Solomon, and the Buddha (Grushka, McLeod, & Reynolds, 2005), is acknowledged as a key originator of the concept of reflection in the twentieth century. Dewey considered reflection to be a special form of problem-solving, or thinking to resolve an issue that involves active chaining—a careful ordering of ideas—linking each with its predecessors. Within the reflective process, consideration is to be given to any form of knowledge or belief involved, as well as the grounds for its support (Adler, 1991; Schön, 1983).

The potential to integrate asynchronicity and connectivity in e-learning brings together both private and public worlds within the learning and teaching platform. We suggest that this potentiality is one of the greatest strengths of e-learning and the essence of collaborative student-centered online inquiry. Garrison (2011) points out that “to ‘lecture’ online is to negate the power and capability of e-learning and most detrimentally to turn students into passive receptacles of information” (p. 86). This teacher-centered approach, however, may suit some students who are uncomfortable and experience difficulties in collaborating with e-peers online.

In the e-moderating program for continuing professional development at E-College Wales (ECW), Rogers (2004) experienced how the asynchronous nature of computer-mediated conferencing allowed e-learners to take time to reflect on their contributions and respond in their selected threads. At the same time, Rogers learned how online teachers take the opportunity to monitor and observe the level of knowledge construction, and intervene when they think it is appropriate in a 24/7 framework. By scaffolding (Berge & Collins, 1995; Bruner, 1996; Garrison, 2011; Salmon, 2000) and weaving (Feenberg, 1989), online teachers are able to provide appropriate tasks and feedback, with motivational support via text-based postings. Moreover, the summarizing and archiving process by an online teacher acts as a useful repository for e-learners to follow-up on previous and ongoing discussion threads in which they may or may not have participated.

Within asynchronous electronic discussion groups, e-learners enjoy the freedom to study at their own pace and in their own time and place. It is vital, therefore, to be able to offer opportunities, through computer-mediated learning strategies, for promoting lifelong learning to a diverse e-learning audience. Since an asynchronous learning environment offers opportunities for reflection, particularly in problem-solving online, it is useful to discuss the merits of this way of thinking in the next section.

Collaboration and Knowledge Construction in ALNs

The connectivity afforded by online teaching and learning platforms can bring students together from diverse sociocultural backgrounds. This is advantageous for the building of a community of learners (Graff, 2006; Wenger, 1998) who are able to communicate through this electronic medium from any location, at any time. Hiltz (1994) defines collaborative learning as an environment in which:

both teachers and learners are active participants in the learning process; [and] knowledge is not something that is “delivered” to students but rather something that emerges from active dialogue among those who seek to understand and apply concepts and techniques. The virtual classroom demands this kind of learning in order to overcome the absence of face-to-face communication. (p. 23)

Through socialization, Feenberg (1989) concludes that learning in a faceless classroom becomes more effective when an online teacher weaves e-peers' contributions together in such a way that creates group cohesion. Garrison (2011) talks about social presence as an important factor in helping online learning communities develop skills in collaboration and the sharing of ideas to generate new knowledge (p. 48). Online learning is seen by many researchers through a constructivist lens. For example, Mason (1998) states that constructivist thought could be encouraged through learner participation in structured online discussions, collaborative online activities, online assessments, interactive course material, and the changing of the teacher from a "sage" to a "guide." (p. 3). Hrastinski (2008) discusses the ability of an online teacher to bring about effective participation. Knowledge construction is both individual (Kelly, 1955/1991; Piaget, 1950) and social (Dewey, 1933; Vygotsky, 1978). An underlying assumption regarding the basis of collaborative learning is that learning is social rather than individual.

Significance of the Study

The previous review of literature shows that collaborative learning in virtual classrooms is encouraged because there is an assumption that more information and knowledge can be gained through interactions and involvement with virtual class members than solely from an online teacher. The present research study challenges this assumption, on the grounds that there is little e-learner participation or involvement in some online discussion groups (Garrison, 2011). Wozniak (2007) implemented Salmon's (2000) conference rating categories using two raters. The findings confirmed that from 756 postings in an ALN discussion forum, 93% demonstrated "individual thinking" (i.e., individual ideas, explanations, and personal opinions) and 7% demonstrated "interactive thinking" (i.e., critiques of other e-peers' suggestions, challenges to others' explanations, and the negotiations of new meanings) (Wozniak, 2007, p. 215). In comparison, independent learning differs from collaborative learning in that the student does not interact with other students. In such environments, interaction takes place exclusively between the teacher and the student, and learning is completely self-directed (Hiltz, 1994, p. 24). From the e-moderator perspective, Mazzolini and Maddison (2003) recognize that there is a spectrum of activity offered by e-moderators. In some instances, an e-moderator will remain the 'sage on the stage' whereas some prefer to be present as a 'guide on the side', while others use a discussion forum as a repository for notes and resources. This e-moderating behavior is described as being 'a ghost in the wings'. Figure 1 illustrates this spectrum of e-moderating activity adapted from Wozniak (2007, p. 214).

These observations demonstrate the diversity in e-moderator behaviors online. The current research aims to identify the applicability of varying degrees of online teacher presence that are suitable for online learning groups with differing degrees of online collaboration and knowledge creation. The researchers in the current study suggest that an online teacher will need to develop skills in order to identify *how best* to help an individual member in an online learning group or how to satisfy the group's needs.

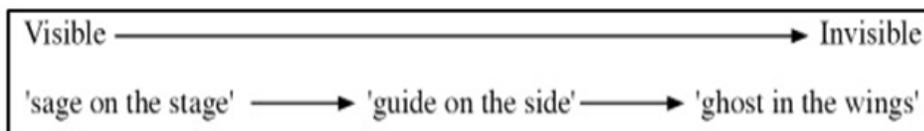


Figure 1. A continuum of E-moderating (Wozniak, 2007, p. 214)

Furthermore, the research study attempts to address the ways in which pedagogical leadership qualities such as intellectual stimulation, individual consideration, constructive transactions (Avolio, Bass, & Jung, 1999) can develop a pedagogical model for online teaching and learning. The main objective is to help those online students who find it difficult to collaborate and construct knowledge with others online. Fee (2009) states that

We need a paradigm shift from the caricature of e-learning as a narrow set of isolated learning activities, unsuitable for many learners and many learning situations, to a new vision of e-learning as a broad approach to learning in the digital age, encompassing rich and dynamic possibilities, engaging learners and looking to the future. (p. 42)

The PVM focuses not only on the role of teachers' 'e-moderation' leadership behavior in e-learning environments but also e-learner preferences in learning styles regarding variables such as collaborative potential and knowledge construction in online discussion forums. Research participants in the initial research were higher education lecturers. At that time, e-moderator training was seen by institutions to be part of teachers' continuing professional development for new modes of learning. The role of an e-moderator included those tasks and activities in mediating and facilitating learners' online interaction and study that were expected of online teachers. Salmon (2000, 2002) describes the role of an e-moderator with a number of metaphorical descriptors such as an online tutor, facilitator, coach, gardener, 'a guide on the side'. Other researchers conclude that online tutors will play such roles as "scaffolder [of knowledge] and expert" (Squire & Johnson, 2000; Wozniak, 2007) for learners within a constructivist pedagogical framework (Lau, Blackey, & Jones, 2006). The aim of the training in this study was for lecturers to become recognized as 'e-moderators' who could better meet the growing development of online modules across the university.

The PVM presents much of this pedagogical constructivism much in the same manner as Monash University, one of the first universities to promote not simply distance learning but also preparation and training for academic staff to become online teachers. After nearly a decade of computer-mediated communication (CMC) for teaching and learning at Monash and elsewhere, many observers remain convinced that what underpins the *quality* delivery of learning in online education is effective e-moderation. Thus, one important assumption underlying the framing of the PVM research was that teachers' classroom leadership could also be important in "virtual" classroom environments (Rogers & Aldhafeeri, 2014).

Teachers as Pedagogical Leaders

In the context of this research paper, a teacher's leadership qualities are argued to shape his/her pedagogical role online. Authentic leaders, according to Hughes (2005), are those who strive for *relational transparency* with their followers, by being open with information, encouraging the sharing of ideas, allowing appropriate self-disclosure, and being more trustworthy in anticipation of more trustworthiness. Such "authentic" qualities would be advantageous and beneficial to learners when transposed to online teaching roles. Avolio, Bass, and Jung (1999) described four expressions of appropriate self-disclosure between authentic leaders and followers (e-learners): (i) goals/motives, (ii) identity, (iii) values, and (iv) emotions.

Leaders who self-disclosed with others were likely to establish relational transparency; this could be applied to online teaching and learning in order to help deter e-learner drop-outs. For

Hughes (2005), followers' motivation increases:

when they know why they were doing what they were doing (goals/motives), trusted who they were dealing with (identity), understood and shared in the values underlying the decision-making (values), and felt secure in sharing and trusting in the expressed emotions of themselves and those with whom they worked. (p. 89)

Methodology

Design and Conceptualization of PVM

The PVM is conceptualized as relating to both (i) e-moderator perceptions of their online roles based on a leadership paradigm (Avolio, Bass, & Jung, 1999) and (ii) e-learner perceptions regarding variables such as collaborative capability and online knowledge construction ability. This paper adopts a descriptive method approach focusing on evaluations of the PVM by online learners (undergraduates and postgraduates from the college of education majoring in Arts and Sciences) at Kuwait University. The PVM consists of two matrices: (i) Matrix Model 1 for online teaching, based on a leadership paradigm consisting of two variables—transactional (task-giving) leadership and transformational (empowering, motivational) leadership—and (ii) Matrix Model 2 for online learning styles, including e-learner capability for online collaboration and knowledge construction. Figure 2 below illustrates Matrix Model 1 for pedagogical variation generated from e-moderator perceptions of their online role(s).

Matrix Model 2 for pedagogical variation was developed from e-moderator perceptions of what e-learners are able to do online. Much of the contemporary literature (Dirkx & Smith, 2004; Ellaway, Dewhurst, & McLeod, 2004; Richter, 2011; Felix, 2005) suggests that e-learners are able to collaborate and construct knowledge, as illustrated in Figure 2. The two variables in this matrix are (i) e-learner collaborative ability (sharing and knowledge exchange) and (ii) creating and adapting new knowledge, envisaged as important factors in the engagement of e-learners in online communities of practice (CoP). When PVM Matrix Models 1 and 2 are merged or transposed over one another, the complete PVM Model 3 emerges, as shown in Figure 3. The following diagram demonstrates PVM Matrix Model 3 for online learning and teaching by matching Models 1 and 2. A key to these diagrams is given in Table 1.

Models for e-moderating “as teaching” are also scant (Garrison, 2011; Laurillard, 2002; Rogers & Aldhafeeri, 2014; Salmon, 2000). In an introductory case study, Rogers (2004) used a 39-item multifactor leadership questionnaire (MLQ) based on the transformational-transactional leadership paradigm of Avolio, Bass, & Jung (1999). The investigation was to explore the potential for its application in online teaching. A sample of 15 e-moderator practitioners (lecturers) from a single post-1992 HEI site participated. The responses were analyzed for principal components, producing a scree plot that highlighted four important factors to individuals in professional practice: (i) an “idealized” leadership role, (ii) intellectual stimulation, (iii) inspirational motivation, and (iv) individual considerations.

These qualities were seen to underpin “transformational” behavior types when academics were in “e-moderator” roles online, together with the provision of “e-tivities” (Salmon, 2002), which Rogers (2004) recognized as demonstrating online transactional behaviors. This was followed by a second exploratory study that adapted Kelly’s (1955/1991) personal construct methodology to further explore the dimensions of leadership attributes that might be operating.

The sample consisted of a different set ($n= 24$) of e-moderation practitioners from the same campus, to elicit perceptions of their identity in on-line roles. It is argued that the e-moderator teaching “presence” is a significant attribute in the e-learning outcomes of students.

Table 1

Diagram Key for Figures

Quadrante	Moderator Characteristics	e-Learner Learning-Style Preference
AE	Few tasks and little motivation Constructivist (student-centered)	Very collaborative and high knowledge construction
BF	Many tasks and little motivation	Self-directed, little collaboration, and high knowledge construction
CG	Many tasks and high motivation Instructivist (teacher-centered)	Shirkers and lurkers, minimum collaboration, minimal knowledge construction
DH	Few tasks and high motivation	Collaborative, with “social banter” and minimal knowledge construction

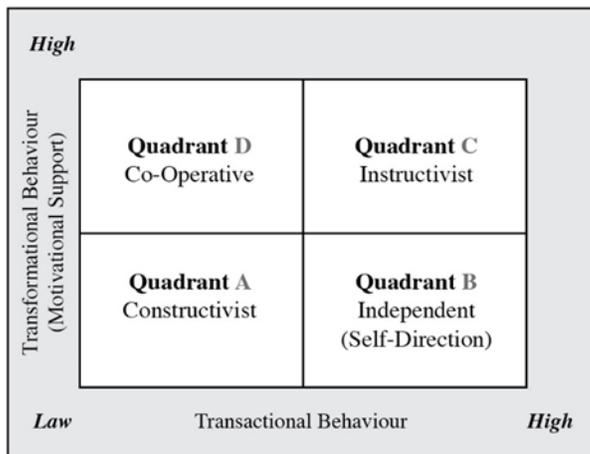


Figure 2. The PVM Matrix Model 1 for Online Teaching

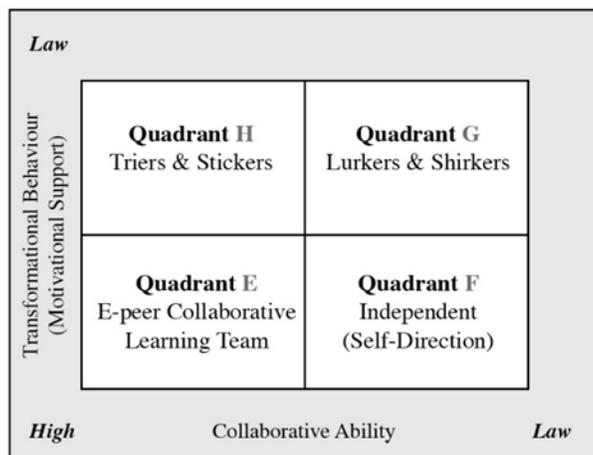


Figure 3. The PVM Matrix Model 2 for Online Learning

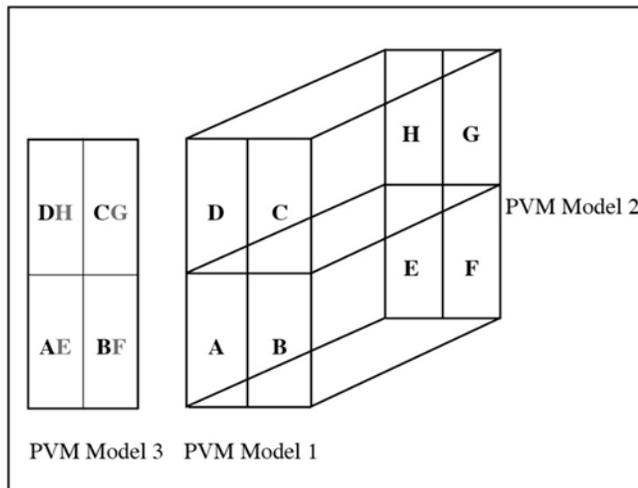


Figure 4. The PVM Matrix Model 3 for Online Learning and Teaching by Matching Models 1 and 2

Participants

For this current study (Rogers & Aldhafeeri, 2014), the target population consisted of both undergraduate and postgraduate students from the College of Education in the major areas of Arts and Sciences at Kuwait University. Since males and females are divided into separate classes according to Kuwait University regulations, we used the stratified sampling technique to ensure that both genders were represented. Therefore, we classified the target population, all college of education students, into two strata of classes: male and female. Then we implemented random selection for both the graduate and undergraduate students.

The chosen sample was composed of 79 students (41% male, 59% female). Fifty-four participants came from the major of Arts and 25 from the major of Sciences in the college of education. Figure 5 shows the percentage composition of the sample population consisting of both undergraduates ($n= 65$) and postgraduates ($n= 14$), that is to say, the sample consisted of 82% undergraduates and 18% postgraduates.

Instrumentation

As indicated previously, the methodology adopted in this paper is known as descriptive research. Descriptive research (Knupfer & McLellan, 1996) is defined as research that investigates human experience through surveys, case studies, and ethnographies, with the desire to order experience and formulate a theory. This study used a survey instrument developed by Rogers (2004) to evaluate PVM for online teaching and learning. The questionnaire instrument consisted of two main parts. The first part was directed at demographic data, such as gender, age, major type, and academic level. The second part of the instrument presented two illustrations of which included close-ended and open-ended questions in four quadrants for each illustration. The respondents were asked to look at the first illustration of the PVM for the online teaching and then answer the four open-ended questions about online teaching. The second illustration showed the nature of PVM in online learning in order to match between online teaching style and e-learner capability. Four closed-ended items followed. The response

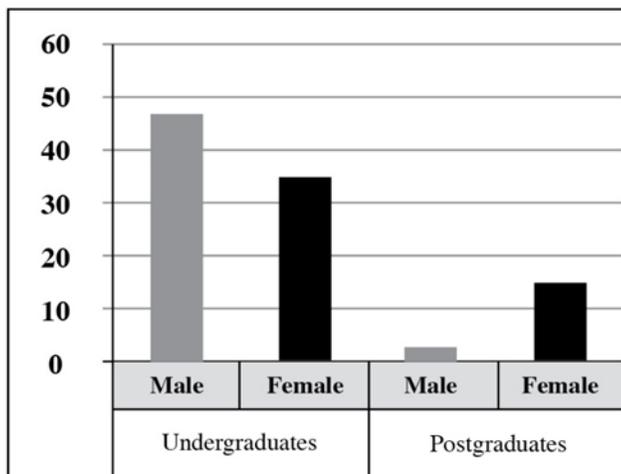


Figure 5. Sample Population: Percentage e-learner Research Participants, Kuwait University, n (Total) = 79

choices for these four items were: *good*, *bad*, *doesn't matter*, and *don't know*. The research participants were asked to choose how well the e-moderator characteristics in each quadrant matched the student learning style preference.

We surveyed the selected sample population of e-learners, both undergraduates and postgraduates. We translated Rogers' (2004) questionnaire from the original English version into Arabic and then distributed it among the members of the sample. We gathered the primary data in Arabic and translated the data into English (Rogers & Aldhafeeri, 2014). We gathered the data during the summer term of the academic year of 2014-2015. The data collection process lasted for two weeks. We did not receive any missing or uncompleted questionnaires. We then tabulated all raw data into the Excel application for analysis.

Results

The data were analyzed and illustrated to answer the main research question: To what extent can a model prescribe what online teachers ought to do in asynchronous learning networks (ALNs) when developed from the pedagogical implications emerging from e-moderators' perceptions of their online roles?"

Figures 6–9 illustrate the responses were given (percentage wise) by the sample of undergraduates, n (Total Undergraduates) = 65, whereas Figures 6 and 7 indicate specifically how both male and female undergraduates evaluated Quadrants CG and DH.

Comparing the results for Quadrants DH and CG, both females and males under 25 years old showed a greater degree of agreement regarding a "good" match in Quadrant CG. There was also disagreement about this, as some of the participants thought it was a "bad" match. For Quadrant DH, males under 25 years old showed a greater degree of disagreement in a "good" match for e-moderator teaching regarding the students' preferred learning style, which was an interesting outcome. From the participant comments, one male participant who thought DH was a "bad" match indicated that "this kind of learner would like to learn on their own." Yet, another female participant felt that DH was "a good match because it encourages innovation and creativity."

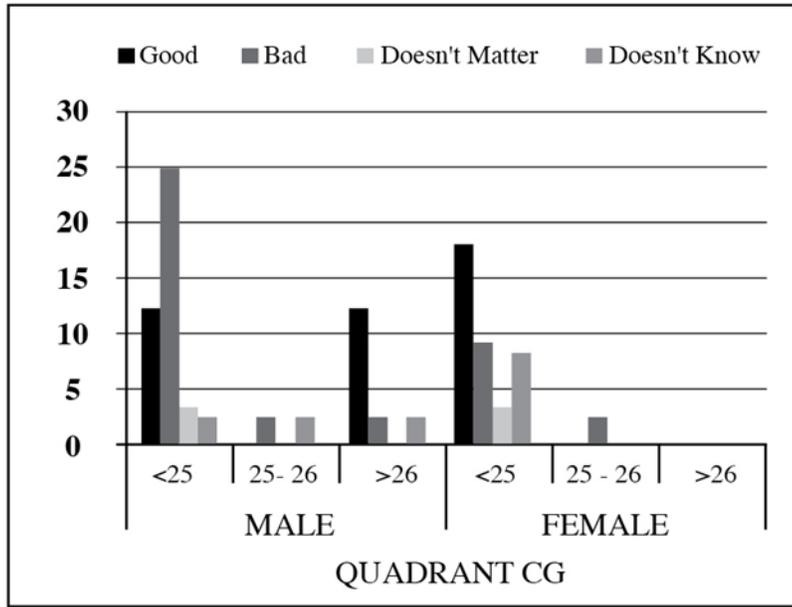


Figure 6. Evaluation of Quadrant CG by Undergraduates

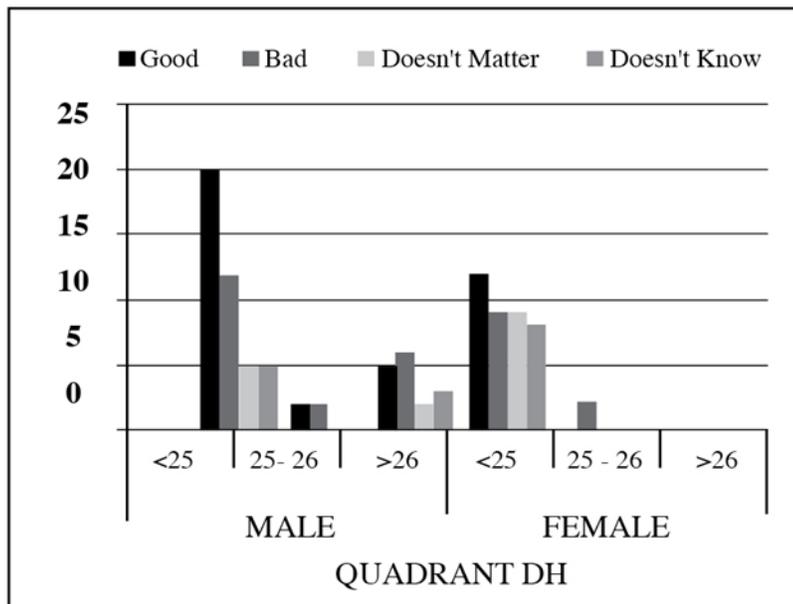


Figure 7. Evaluation of Quadrant DH by Undergraduates

Regarding Quadrant CG, a quote from a participant showed complete agreement that it was a “good” match: “It is good to give more motivation for students with low abilities.”

Further interesting outcomes are shown in Figures 8 and 9, which indicate how both male and female undergraduates evaluated Quadrants AE and BF. The female respondents over 26 years old showed a higher degree of agreement that Quadrant AE was a “good” match, compared to the male undergraduate participants over 26 years old. An interesting finding was that, for

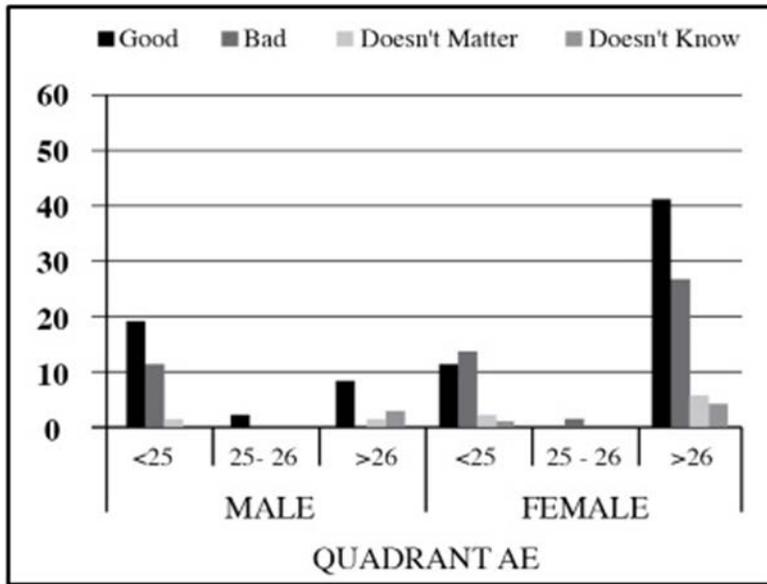


Figure 8. Evaluation of Quadrant AE by Undergraduates

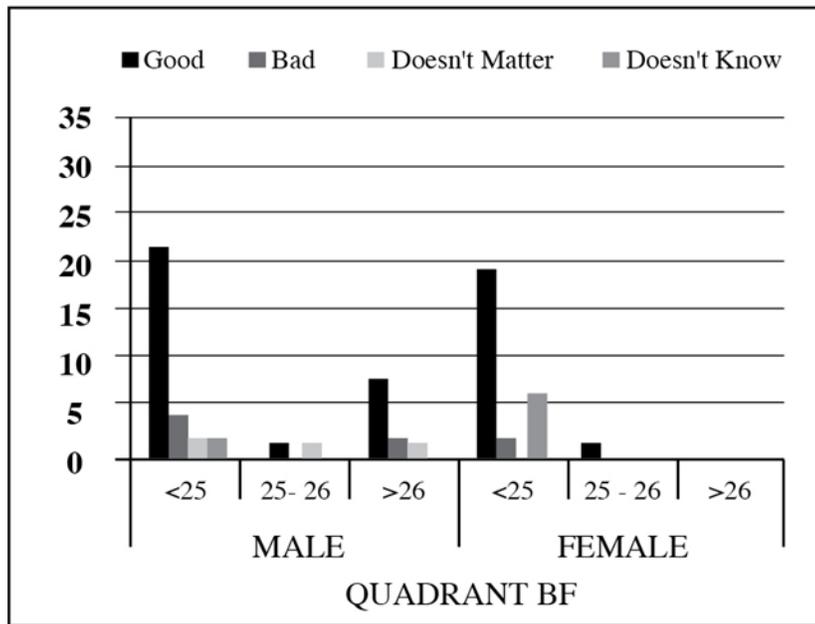


Figure 9. Evaluation of Quadrant BF by Undergraduates

Quadrant AE, the males under 25 years old showed greater agreement on a “good” fit than the females under 25 years old. Does this indicate that male undergraduates prefer a culture of “constructivist” learning environment more than female undergraduates? For Quadrant BF, there was more or less the same agreement for a “good fit” among those under 25 years old, which may indicate that both male and female undergraduates in this age category are highly motivated by enjoying the freedom of “self-direction.”

A higher percentage of female undergraduates in Quadrant AE, and both females and males

under 25-years old in BF showed greater degrees of agreement on a “good” match. There was also disagreement about this, as some of the participants thought it was a “bad” match. For Quadrant DH, the males under 25-years old showed a greater degree of disagreement on a “good” match for e-moderator teaching regarding the students’ preferred learning style, which was an interesting outcome. Figures 10–13 illustrate the responses that were given (percentage wise) among the sample of postgraduate e-learners, n (Total postgraduates) = 14.

Comparing the results for Quadrants DH and CG, the female postgraduates over 26 years old showed a greater degree of agreement on a “good” match in Quadrant DH. Similarly, for

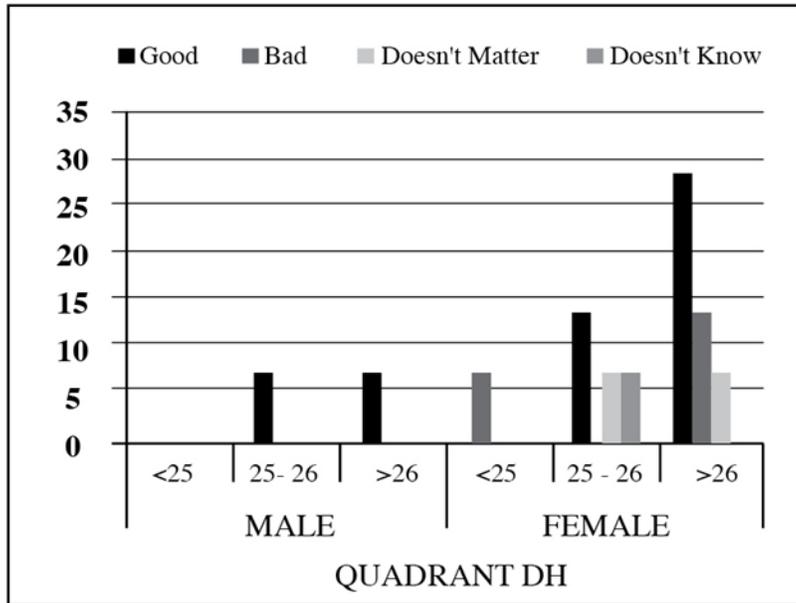


Figure 10. Evaluation of Quadrant DH by Postgraduates

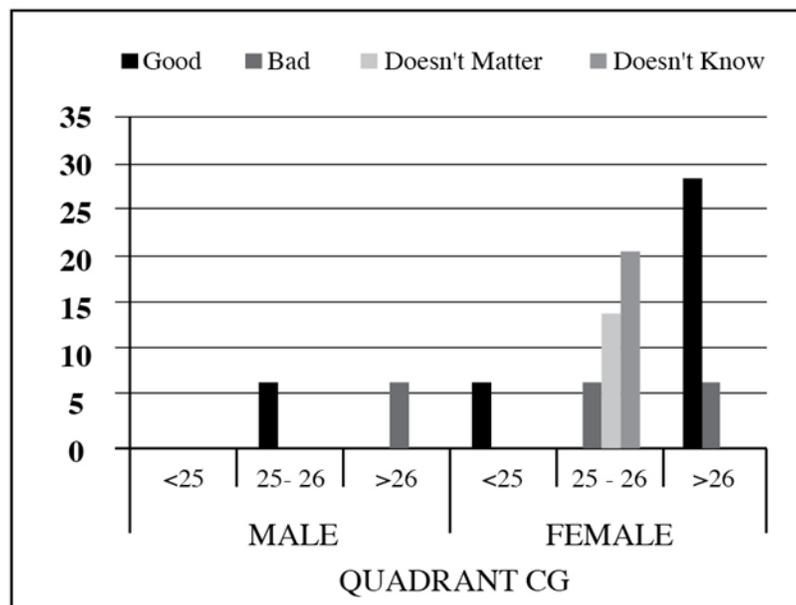


Figure 11. Evaluation of Quadrant CG by Postgraduates

Quadrant CG, females over 26 years old showed a greater degree of agreement on a “good” match for e-moderator teaching regarding the students’ preferred learning style. This is another revealing outcome that is illustrated in Figures 10 and 11.

From the participant comments, one male participant who thought DH was a “good” match indicated that “students must be motivated to show their abilities.” Yet, another female participant felt that DH was “a good match since “the connection between knowledge construction ability and (low) tasks given makes sense to me.” Regarding Quadrant CG, a quote from a male participant showed complete agreement that it was a good match “because many

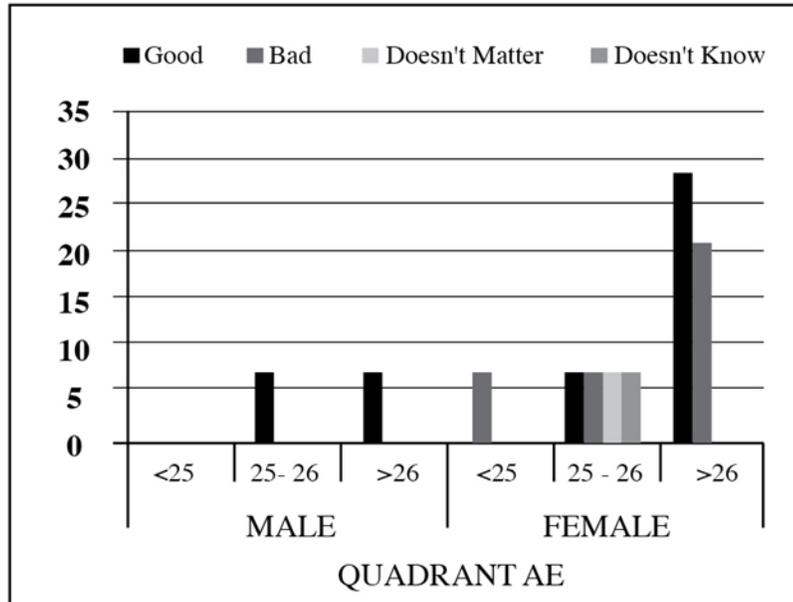


Figure 12. Evaluation of Quadrant AE by Postgraduates

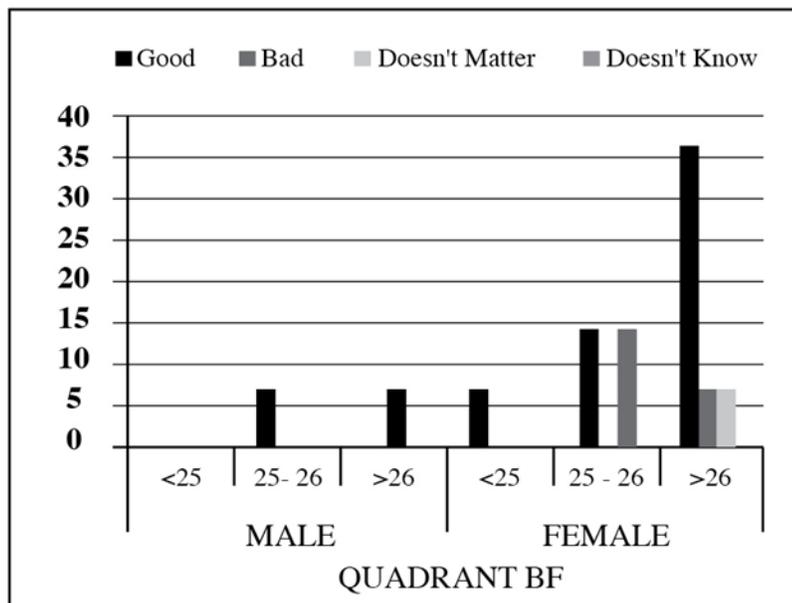


Figure 13. Evaluation of Quadrant BF by Postgraduates

tasks and much motivational support enhances learner's knowledge construction and collaboration." The findings for postgraduate e-learners evaluating Quadrants AE and BF were comparable to those evaluated by the undergraduate sample population. Figures 12 and 13 provide an analysis of the results.

For both Quadrants AE and BF, agreement about a "good" match predominated among the female and male postgraduate e-learners, especially for those over 26 years old in the sample. Does this mean that they recognize the importance of a high degree of task-giving? A comment from a female over 26 years old implied that AE was a "bad" fit because "an online tutor should always interact with students rather than leave it for the learners to run their learning ... [which] could have a negative effect."

Discussion

The current research paper reveals a need to create a community of practice (CoP for learners and teachers. Wenger (1998), Thorpe (2009), and Squire and Johnson (2000) argued that "communities of practice" can be an important catalyst for the development of shared knowledge and expertise using distributed networks. For some, the re-skilling of lecturers and teachers for online work amounts to a process of re-professionalization. Such staff and institutions must also be at the forefront of *providing* such courses, as well courses that reach outward. Evaluation and pedagogical research by educational professionals should also be applicable to this goal. As Zhang and Nunamaker (2003) conclude, "It is a daunting task to maintain a well-educated and high-performance workforce in the global economy of today." (p.204). This is as important for teachers' ongoing employability as it is for the future career prospects of their learners in the manufacturing industry, medicine, business, law, the media, and the arts, as well as for lifelong learning. Networks of knowledge sharing are also having an effect on the emergence of newer educational professionals, teachers, "e-coaches," and "virtual trainers" for online learning. The scope of online education and training is enormous, with many advantages—including the convenience, for both e-learners and teachers, of being able to decide for themselves when and where to enter the virtual classroom. It offers significant and radical flexibility compared to traditional teaching and learning. However, in some respects, this occurs within a more inflexible employment, institutional, and the contractual environment in FE/HE. At the same time, the portability of laptops and handheld devices means that employers may no longer give employees time or "time-in-lieu" for CPD, but instead depend on them to take responsibility (and the initiative) for selecting their time away for gaining qualifications and upgrading their skills. Andrusyszyn, Iwasiw, and Goldenberg (1999) identified that as the population of e-learners increased, so too did the need for developing guidance, including in the use of learning systems and in obsolescence, as one enabling technology is replaced by another. Collaborative e-learning environments enable physically separated learners and experts to form global online learning communities of inquiry (Garrison, 2011). An advantage of using ALNs in CPD is the accessibility of the online tutor/coach for guidance, support, and advice in career planning.

Flexible Learning and Working:

Flexible, round-the-clock access to learning and teaching systems in online pedagogy creates employment and work-time issues. At the same time, networked computer-based learning

platforms and the achievements of cross-national telecommunication technologies, along with the availability of the Internet, search tools, and smart applications, suggests the potential for less didactic, more flexible modes of teaching and learning. Fewer limitations on access or retrieval mean that “peer” learning is also increasingly enabled. However, such access, availability, and enlargement may pose serious problems for e-tutors, with ever-increasing postings online. Berge and Collins (2000) identified that “online ‘traffic’ (the number and frequency of posts) is always a concern—there is just so much time in a day and room in most email boxes. The range of posts to these lists ranged from one to 600 per day” (p. 89). It is suggested that academics in HE spend numerous overtime hours on some of their most productive work, although often with little official recognition of their efforts (Gornall, Cook, Daunton & Salisbury, 2014). The UK government has acknowledged that organizations “have contributed to this by encouraging a ‘long hours’ culture, to the extent that more than 20 percent of the total workforce and a considerably higher proportion of managers and professionals work in excess of 48 hours a week” (DTI, 2002, p. 15).

At the fourth Working Lives conference held in the UK in November 2010, for those with a background in Sciences as well as Education and Pedagogy, Rogers and Aldhafeeri (2014) explored the notion of personal rhythms of working in the context of virtual teaching and online learning developments, whereby extension, people may be moving toward a kind of adaptation to infinite professional working spaces. Biological time affects the productivity and health of people and employees to no small degree. Working out of phase with one’s “biological clock” may bring a cost in health and wellbeing, as well as with relationships at work and home. Employers and individuals who work online and are “attached” to their electronic gadgets, including mobile phones and iPods, need to be aware of how their performance and alertness decrease with nighttime or round-the-clock activity. Yet, how to manage and counteract these issues may become a pressing professional issue, as much for employers and professional bodies, as for families. Early experiments with animals who were constantly forced to shift their biological clocks resulted in substantially lowered life expectancy. Hence, whether by choice or necessity, many “workaholic” virtual space workers may well be putting their health at risk. Schein (1996) noted that graduates moving into large organizations where computerized workloads—which were taken home for later completion, often in the early hours of the morning—could foster “career lifestyles.”

The working hours of academics, in the context of the role of technology within the educational workplace, might thus suggest that further developments in virtual classrooms and in online teaching and learning, should account for and try to understand human circadian rhythms. That is, the diurnal modes of waking and sleeping, based on the Latin terms *circa* (“around/about”) and *dies* (“day”). As such, it is important to recognise that virtual classrooms operate within an ethos of flexible 24/7 media or information access. Teachers and educationists may indeed seek to take a lead role in this area, such as in how they teach, brief, and mentor their students, as well as the ways in which they set up and structure coursework, schedules, and deadlines. Of course, flexible access means that much may be learner-controlled, but the issue of online teaching management remains. As Caproni (1997) suggests, “Discourse [about work–life balance] may further entrench people in the work/life imbalance that they are trying to escape” (p. 46). In other words, people can behave as (voluntary) “slaves” by working faster and harder in less time, in order to make more time for relaxation/leisure in the future, in pursuit of work–life balance. Caproni advises against settling for “juggling” (p. 54). Rather than “settling” for constant movement toward goals and the compartmentalization of one’s life, a more beneficial

approach would be to give one's best possible contribution to as many people as possible. To this end, the potential time-saving of online learning activities and access to shared work and enterprise in virtual classrooms become inherently beneficial.

An e-moderator's role would be to encompass the needs of the online learning community across differing time zones, requiring what Ocker, Huang, Benbunan-Fich, and Hiltz (2011) call "distributed leadership" across boundaries of time and space, while providing opportunities for negotiated meanings—that is to say, they must take learners' circadian cycles into account. While some e-learners may be waking up at sunrise in the Southern Hemisphere, e-moderators in the Northern Hemisphere may be ready for sleep as the sun is setting. Unless courses for e-moderators include these situations, the demands on learners and their time, as well as the onward effects for tutors, could lead to health issues and dissatisfaction with e-learning experiences. There is potential, therefore, for institutional and sector discussions to ensure that the working lives of teachers in virtual classrooms are understood more specifically. The limitations and stresses embedded in technology- and network-based teaching and learning—whose flexibility and perceived benefits are recognized more widely than are the impacts on workload are part of the online story too.

Conclusion

This article provided some discussed the background to the research leading to the creation of the PVM, including the role of UK government initiatives (DfES, 2003, 2005) to promote online teaching and learning in HE and FE through collaborative institutional partnerships. The aim of this preliminary research is stated through the three main research objectives. Joint international research initiatives are developing online learning materials in order to widen access to Web courses and resources. Both JISC and DEST are developing online programs for dissemination to e-learner practitioners, in order to enable them to develop their own customized online courses. Research is also supported for the creation of continuing professional development courses for e-moderating practitioners. This research study aims to decrease the gap in evidence that e-moderating requires leadership qualities for effective online teaching and learning in asynchronous discussion forums.

The article includes a discussion on the nature of the absence of the body in virtual learning spaces. For some people, the absence of physical presence is uncomfortable and disorienting, and becomes a deterrent for online collaboration with e-peers. This is unfortunate because the asynchronicity of ALNs brings opportunities for self-reflection, which is a powerful means to gain insights into how to develop problem-solving skills with e-peers, through the characteristic connectivity afforded by ALNs. Different types of reflective practices have been observed by a number of researchers. As mentioned previously, they locate this way of thinking as an essential component of both online teaching and learning across culturally diverse learning communities. Particularly useful in the understanding of how e-moderators ought to develop their online skills is the distinction between reflection-on-action and reflection-in-action, or in other words, developing insights into tacit knowledge-in-action and tacit knowledge-on-action.

The nature of online collaboration and knowledge creation in ALNs was also introduced, both from e-learner and e-moderator perspectives. Figure 1 illustrates a continuum of e-moderator online activity from being visible to becoming invisible, which underpins significant pedagogical issues relating to teacher-centered and learner-centered teaching and learning online. This section is followed by a discussion on competency-based teacher education. The

concept of competency-based e-moderator training is seen as a necessary part of continuing professional development. After speaking to the advantages and disadvantages of competency-based teacher education, we concluded that, for some observers, competencies were seen as means to achieve pre-set goals, whilst for others, competencies were too rigid, inflexible, and unpractical. An alternative approach was viewed as holistic, or a complex combination of knowledge, attitudes, skills, and values determining e-moderator performance.

The question of acquiring skills to develop collaboration and knowledge construction in online learning communities is important because of the invisibility of e-peers to one another and their e-moderator. The research rationale is broached with insights into different pedagogical concepts that have shaped the research design, including (i) the paradoxical nature of two diametrically opposing pedagogies, namely instructivist (high teacher visibility) and constructivist (low teacher visibility) pedagogies, and (ii) pedagogical leadership in ALNs.

The notion of a learning web (Weston, 1996) anticipates ubiquitous global access to learning with free and flexible communication between learners and teachers. Today, as people retire earlier and live longer, lifelong learning (Williams, 2012) is becoming the norm in many parts of the world. Therefore, it is now becoming more readily possible for people from different cultures and with differing beliefs and backgrounds to register at any one time as e-learners for a variety of online courses. Education and associated attainments have long been linked to hard work and intensive desire to achieve, sometimes requiring extensive periods of time. Teachers' conventional leadership, professional learning, and management qualities will become ever more important in newer pedagogical environments, and extended research in this important new area is therefore pressing. The findings from Kuwait University highlight the eagerness with which both graduates and postgraduates are exploring and adapting to the new learning technologies.

As technology changes, so do the ways in which students learn and what can be learned with evolving theoretical concepts. Having been evaluated by both e-moderators in the UK and e-learners in Kuwait, the PVM is a means of relating issues that best suit e-learner environments related to e-moderators' perceptions of their leadership style online. The pace of change is demanding a new kind of openness to develop insights into knowledge creation, for the benefit of society at large. Those who are engaged in demanding workspaces and who are ambitious to seek promotion or greater self-fulfillment are turning to online learning opportunities. New learning habits in the virtual classroom take on board the advantages of global interactive communication, thus enhancing understandings in learning spaces throughout multicultural dimensions.

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