A NEW DIMENSION FOR LEARNING AND TEACHING ONLINE: THE PEDAGOGICAL VARIATION MODEL

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Abstract

The research is based on an understanding that a variety of learning and teaching strategies offer opportunities for both learners and teachers to select the most appropriate approach for creating learning environments that are conducive in unleashing innovative ideas for problem-solving in the 21st Century. Whilst the two contrasting approaches, namely constructivist environments versus instructivist environments may be identified in the plethora of educational literature relating to face-to-face classrooms, there is still room to consider these two approaches in online learning and teaching. Four years ago, Rogers (2013) recognised that an in-depth insight to pedagogical leadership for e-moderators, (i.e. online teachers) is paramount to successful e-learning, whether in constructivist or instructivist online learning environments. 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”.

Thus, the current research problem was to address this gap in knowledge on pedagogical leadership in online teaching, by developing a model, the Pedagogical Variation Model (PVM) for online teachers, based on e-moderator leadership qualities (Rogers, 2004, 2005/2011) for teaching and learning in asynchronous discussion forums. The PVM (Rogers 2013) uses one Boston 2 x 2 Matrix format in an analysis to capture online teacher leadership strategies namely leadership variables as:

1. transactional (i.e. task-giving) and
2. transformational (i.e. empowering) and another Boston 2 x 2 Matrix format in an analysis to capture online e-learner behaviour variables, namely
3. collaborative (i.e. sharing and exchanging ideas) and
4. capacity for knowledge construction (i.e. creative thinking).

Models are useful tools to better understand not only learning processed of students but also for educators to explore new dimensions in their teaching. This is the central aim in the evaluation of the PVM in a collaborative research project with the Faculty of Education, Kuwait University, directed by Dr. Fayiz Aldhafeeri. (2014). An online questionnaire (Rogers 2013), translated into Arabic, was distributed amongst under-graduates and post-graduates in The Faculty of Education. The responses were translated into English for analysis. Interesting outcomes are more fully discussed in the paper.

This collaborative research revealed that whilst a constructivist learning environment (e-learner centred) was recognised by a minority of respondents, the majority of respondents from both samples under-graduate and post-graduate, preferred an instructivist e-moderator approach. Whilst a generalisation of the results cannot be made due to the samples being less than thirty respondents, nevertheless the very important outcome reveals that and instructivist (i.e. respect for teacher-centred learning) remains a preferred learning environment.

The research rationale is broached with insights into different pedagogical concepts that have shaped the research design, including:

1. the paradoxical nature of two diametrically opposing pedagogies, namely instructivist (high teacher visibility) and constructivist (low teacher visibility) pedagogies, and
2. pedagogical leadership in asynchronous learning networks.

Keywords: Online learning and teaching, e-learning, e-moderating, pedagogical leadership, constructivist, instructivist, collaborative research, Boston Matrix.
1 INTRODUCTION

The Oxford English Dictionary (2017) defines ‘collaboration as “working together . . .the situation of two or more people working together to create or achieve the same thing”. In this section, the research paper discusses collaboration in general and for online learning in particular. When people come together for a specific task some people do not find it easy to exist together with others, on the contrary some people find it challenging. Tamm and Luyet (2005), suggest that people need to have a well-developed heart-brain and high levels of emotional intelligence. In their research findings relating to small group performance and decision making, Kerr and Tindale (2004) show that there are both advantages and hindrances in collaborative environments. Whilst some group members are able to share ideas for problem-solving there are others who feel restrained, holding back in their involvement for fear of being ostracised. The notion of ‘groupthink’ can be thought of as an unbalanced strategy bringing about a form of progressive decision-making that may lead to narrow-minded thinking without seeing the bigger picture and consequences of a groupthink mind-set as forewarned by Janis (1982, p.25) “The more amiability and esprit de corps there is among the members of a policy-making in-group, the greater the danger that independent critical thinking will be replaced by groupthink, which is likely to result in irrational and dehumanizing actions directed against outgroups.”

In contrast to collaborative, online discussion groups, some online learners prefer to take on a more self-directed approach. It is important to take into consideration learner attributes and how these impact what occurs in online learning contexts. An area of particular interest in the current research, when exploring online learning, is self-directed learning (SDL), i.e. the learner’s ability to guide and direct his or her own learning (Hartley & Bendixen, 2001). A study of SDL by Grow (1991) recognises different stages of SDL enabling better online learning and teaching experiences.

Rogers (2004) argues that teachers’ leadership qualities play a significant part in “virtual” as well as traditional classroom teaching practices, to provide an inclusive environment for all learners. For this to happen many skills 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 as well as the teaching role, i.e. e-moderating in online education. The United Kingdom Department for Education and Skills’ e-strategy Harnessing Technology: Transforming Learning highlights a collaborative approach to the provision of personalized learning by planning an integrated teaching, research, and administrative network for education. The strategy outlines common systems and open standards for electronic learning (e-learning), together with the development of partnerships for functional e-collaboration as an explicit strategic priority. Cross-institutional partnerships will be promoted as a way of enabling all schools, colleges and universities to progress. In the UK, the DfES (2003a) notes the multidimensional developments in international standards and specifications for e-learning content. 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 are becoming more accessible. The need for continuing professional development (CPD) is seen to be at the heart of the e-moderating community because e-moderation is beginning to evolve within culturally diverse learning environments and 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. There is a shared conviction that the e-framework will better to explore specific features of 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 (Rogers, 2005/11) and better return on present and future investment. 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), e-moderating practitioners are seeking for more effective guidance on good pedagogical practices as suggested by JISC, a United Kingdom non-departmental public body (JISC, 2014), where a specific call has been made for further assistance in designing e-learning activities. By continuous developments in learning design new ways of integrating materials and activities are possible in a pedagogically sound practice (Goodyear, 2001; Thorpe, 2009). At the same time these developments also offer rich frameworks for modelling socio-cultural cognitive

2 METHODOLOGY

The research for the creation of the Pedagogical Variation Model (PVM) was underpinned by the assumption that online teachers exhibit certain qualities, e.g., knowledge of online learning technologies, expertise in using computer-mediated communication skills, creative problem-solving, socializing, and online sharing and collaborating with others (Avolio, Sosik, Kahai, & Baker, 2014). A preliminary critical exploration of the literature by Rogers (2004, 2005/2011) established how online teaching and online learning attributes are revealed in pedagogical conceptual frameworks, found in both traditional face-to-face and virtual classrooms. For example 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). In consequence, 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.

Framing the research question became an important starting point. The research question emerged as:

“To what extent do e-moderators implement leadership strategies in their day-to-day online teaching in asynchronous discussion forums?”

It was essential to be able to consider the available tools for research, including potential research samples, tools for gathering qualitative and quantitative data as well as data analysis techniques.

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

A significant insight to leadership from Avolio, Bass and Jung (1999) relating leadership to two conceptual frameworks namely (i) transactional leadership and (ii) transformational leadership led Rogers (2004) to initially investigate e-moderator perceptions of their online role through a leadership paradigm lens. In her initial investigation, Rogers designed a Multifactor Leadership Questionnaire (MLQ) for a sample of e-moderators (n=24) to identify their perceptions regarding transactional and transformational leadership styles. It became evident that some e-moderators regarded transactional (task-giving) leadership more important than transformational (empowering/motivating) leadership whilst others preferred to focus more on transformational leadership style. In addition there were others that found equal importance in both styles of leadership i.e. transactional and transformational.

This study was followed by the conceptualization of The PVM relating to both (i) e-moderator perceptions of their online roles based on a leadership paradigm and (ii) e-learner perceptions regarding variables such as collaborative capability and online knowledge construction ability. Kelly’s (1955/1991) personal construct psychology (PCP) was adapted to elicit e-moderator perceptions of their online roles regarding their e-moderating skills in six aspects (i) knowledge construction (ii) social interaction (iii) weaving (iv) summarizing (v) archiving and scaffolding, with respect to supporting their e-learner cohorts with an effort to maximise their learning opportunities online to increase their ability for knowledge construction and capabilities in online collaboration. It was found that their e-moderator leadership style much influenced their e-learner achievements Avolio, Bass and Jung. With this observation, Rogers, conceptualised the PVM in three stages using at each stage the format of a Boston Matrix. MacDonald (2002, p.211) shows how the 2 x 2 Matrix Format allows a researcher to identify two variables, one on the horizontal axis and the other on a vertical axis, thereby forming four quadrants, such that each quadrant symbolises a certain feature.

The first Matrix conceptualised by Rogers looked at e-moderator leadership styles, namely (i) Transactional, task-giving role on the horizontal axis and (ii) Transformational, empowering/motivating student learning on the vertical axis, as shown below in Figure 1.
The second Matrix conceptualised by Rogers\(^8\) looked at e-learner features, namely (i) Collaborative Ability on the horizontal axis and (ii) Knowledge Construction Ability on the vertical axis, as shown below in Figure 2.

When the two models are merged, such that the quadrants of Model 1 (A,B,C and D) overlap the quadrants of Model 2 (E,F,G and H) the PVM Matrix Model 3 is formed with respective quadrants AE, BF, CG and DH as shown in Figure 3 below.
Models are useful tools to better understand not only learning processes of students but also for educators to explore new dimensions in their teaching. This is the central aim in the evaluation of the PVM in a collaborative research project with the Faculty of Education, Kuwait University, directed by Dr. Fayiz Aldhafeeri in 2014. An online questionnaire (Rogers 2013), translated into Arabic, was distributed amongst undergraduates and post-graduates in The Faculty of Education. The responses were translated into English for analysis. This survey instrument developed by Rogers (2013) to evaluate PVM for online teaching and learning, consisted of illustrations of (i) the PVM Model 1. Online Teaching Style and (ii) the PVM Model 2, e-learner Capability. Respondents were then asked to what extent the overlapping quadrants were matched (Good, Bad, Doesn’t Matter, and Don’t Know).

3 RESULTS

The sample population of the e-learner participants, \( n(\text{Total}) = 79 \), for both male and female, undergraduate and postgraduates is shown in Figure 4 below. There were far more female postgraduates than male postgraduates, yet more undergraduate males than female undergraduates.

The following results are arranged to compare the results of undergraduate responses with those of postgraduate responses for their evaluation of each of the specific PVM Quadrants (AE, BF, CG and DH).

3.1 PVM Quadrant AE

The evaluation of this quadrant by undergraduates is shown in Figure 5 below.
For 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 under 25 years? However for females over 25 years the reverse result is obtained. The responses from the postgraduates are shown in Figure 6 below.

It is evident that as in the undergraduate sample, the over 25 year old postgraduates agree that the match for a constructivist e-moderator style (i.e. student-centred) is good when e-learners are actively engaged, with high collaborative skills and the ability to construct knowledge together. Again it should be noted that some over 25 year old females both undergraduate and postgraduate who disagree.

3.2 PVM Quadrant BF
The evaluation of this quadrant by undergraduates is shown in Figure 7 below.
For Quadrant BF, both the male and female undergraduates under 25 years old showed overwhelming agreement on a “good” fit than the males and females between 25 and 26 years old. Does this indicate that these under 25 year olds recognize a culture of self-directed learning where the task-giving teaching style matches highly motivated undergraduates?

The responses from the postgraduates are shown in Figure 8 below.

Interestingly all the male postgraduates in this sample were in agreement with a “good fit” in as much as for highly motivated students who were self-directed, in contrast to collaborating with others, the preferred teaching style was considered to be high in task-giving i.e. transactional. It should be noted that the over 25 year old females showed a large consensus that for motivated self-directed, non-collaborative e-learners it was a good match to provide a greater amount of tasks also because of their strong capability in knowledge construction.

### 3.3 PVM Quadrant CG

The evaluation of this quadrant by undergraduates is shown in Figure 9 below. To better understand the culture associated with this group of e-learners, the underpinning assumption is that the e-learners who belong to this group are ‘lurkers’ and ‘shirkers’ who like the proverbial ‘ostriches would bury their heads in the sand’ when the going gets tough. That is to say that the characteristics would be little ability to construct knowledge and no sense of collaboration or sharing knowledge with others online. Responses from the undergraduate sample are shown in Figure 9 below.
Here it is observed that a larger number of under 25 year old males, see this as a ‘bad’ match, whilst in contrast a larger number of responses by under 25 year old females perceive this to be a good match where for those e-learners who have little interactivity online need to be given a larger amount of appropriate tasks and a greater amount of motivation by the online teacher i.e. an instructivist learning environment because such students may look into an online discussion without participating. These students are described by Salmon\textsuperscript{9,10} as ‘lurkers’. The responses from the postgraduates are shown in Figure 10 below.

Quadrant CG, all the females under 25 years old and most of those 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 Figure 10. What is interesting too is that all the males between the ages of 25 and 26 years old were in agreement that there was a ‘good’ match but in contrast none of the females in the same age group were in agreement of a ‘good’ match. This apparent controversy offers the opportunity for further research.

3.4 PVM Quadrant DH

The evaluation of this quadrant by undergraduates is shown in Figure 11 below
For most of the male under 25 year old undergraduates this is a ‘good’ match where weaker e-
learners, i.e. those who find it difficult to construct knowledge and who participate in 'social banter' in
contrast to academic debate, need a lot of empowerment by their online teacher with only a 'few' tasks
at a time, then there will be a positive achievement in online learning. From a quote of a male
undergraduate ‘It is when I find a subject difficult I cannot find my feet if I am overwhelmed with many
tasks. . .but give me a few tasks at a time with a lot of encouragement and I shall get there in the end.”
One of the female undergraduates, also under 25 years old commented “if an online tutor realises that
I am in difficulty, she will give me a lot of encouragement with one task at a time. . .and then my
confidence grows and my self-esteem to tackle more.’

The evaluation of this quadrant by postgraduates is shown in Figure 12 below.

In this postgraduate sample it is evident that all the male postgraduates have found this quadrant to be
a ‘good’ match. All under 25 year old female postgraduates associated this quadrant as a ‘bad’ match.
One comment was made that ‘everyone should be given the same opportunities and they will succeed
with lots of encouragement . . .students need to be “stretched”. However, it is observed that in this
sample most female postgraduates between the ages of 25 year and 26 years and over agree that
quadrant DH is a ‘good’ match. There are some however who disagree. A remark made by one of
these, over 26 years old thought that it didn’t matter. This allows for further discussion...

4 CONCLUSION

From the current research paper there emerges a need to create a community of practice (CoP for
learners and teachers). Researchers Wenger29 (1998), Thorpe20 (2009), and Squire and Johnson30
(2000) amongst others state that “communities of practice” can act as a vital catalyst for the initiation and development of shared knowledge, expertise and ‘know-how’ using online networks. Gornall et Al. advocate that for some, the re-skilling of lecturers and teachers for online work amounts to a process of re-professionalization. It is noted that further research to provide adequate training by such staff and institutions must also be at the forefront of developing and delivering such courses, in-house as well as reaching outward. At the same time, evaluation and pedagogical research by educational professionals are seen to be part of this aim. 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). Whilst this is important for teachers’ ongoing employability it is also 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 (Gornall et Al.). The scope of online education and training is ubiquitous, with many advantages—including the convenience, for both elearners 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. Increasingly, the portability of laptops and handheld devices means greater access to online courses that are properly benchmarked (Tobin et Al. 2015).

Interestingly Andrusyszyn, Iwasiw, and Goldenberg (1999) observed that as the population of elearners increased, so too did the need for developing guidance. This includes the use of learning systems and disruptive technologies due to obsolescence, as one enabling technology is replaced by another providing round-the-clock access to learning and teaching systems (Rogers and Aldhafeeri 2014) in online pedagogy.

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