

A VIRTUAL PROFESSIONAL DEVELOPMENT MODEL: BRINGING INNOVATION TO LANGUAGE TEACHING PRACTICE

Victoria Tuzlukova, Andrea Hall

Sultan Qaboos University

Phone: + 968 24141640, E-Mail: victoria@squ.edu.om

Abstract. *Modern advancements in technologies and further developments in computer-mediated communication have tremendously enhanced social practices. They also empowered individuals in sense of motivation, overcoming psychological barriers, creating the “collective intelligence” (Levy, 1997), providing for temporal and spatial flexibility, and for the synthesis of communication technologies, group and individual forms of communication (Katz & Rice, 2002). Rooted in the belief that professional development has a visible influence on the educational process and eventually leads to students’ achievements, this paper discusses in-service professional development in the context of a language institution in the Sultanate of Oman with a particular focus on the benefits of virtual environments on designing and implementing professional development and training programs that will enable teachers to bring innovation and creativity to their teaching practice. It also discusses barriers and challenges to professional development in the virtual context.*

Key words: *virtual professional development model, language teaching and learning, Sultan Qaboos University, Oman*

1. INTRODUCTION

Modern advancements in technology and further developments in computer-mediated communication have tremendously enhanced social practices. They have also empowered individuals in sense of motivation, overcoming psychological barriers, creating the “collective intelligence” (Levy, 1997), providing for temporal and spatial flexibility, as well as synthesis of communication technologies, group and individual forms of communication (Katz & Rice, 2002, 352). For example, use of virtual environment has been proposed in many academic communities to help meet training needs and extend professional development opportunities for the faculty. Research indicates that using virtual environment, for example, Moodle-based platforms, can provide faculty with open dynamic solutions (e.g. space, features and tools) for peer-to-peer virtual professional development and “self-learning” or “personalized adaptive learning” (Al-Khanjari, 2013, p.5). Faculty can also benefit from flexible social computer-mediated interactions that originate as a consequence of their individual choices and professional development needs; enhance their skills to competently use computers; manage computer-mediated interactions and contribute to the virtual professional development work and operations (Barnes, 2003, p.226; Thurlow, 2004, p.107). In addition, reading and open

sharing of ideas and content (practice, experience, articles, resources, etc.) for professional development purposes are encouraged (Tuzlukova & Rozina, 2010).

2. BACKGROUND

Professional development for personal growth and career advancement of every faculty, as well as increased responsibility for excellence in teaching, has always been one of the priority strategies of the Language Centre at Sultan Qaboos University and the integral part of its overall improvement plan. However, professional development was not widespread and faced many challenges. Therefore, the Professional Development and Research Unit was established in 2011 to become an influential forum that would offer and implement a variety of professional development opportunities. From its very start the Unit focused on providing effective and high-quality training events, adequate in-service training, individual support and continuous professional development. To cater for the needs of culturally and educationally diverse teaching community, which represents more than 30 countries, it initiated and conducted with the voluntary support of both the Language Centre faculty and external experts diverse formal and informal activities related to language teaching. As a rule, the activities, offered by the Unit attracted good participation and positive feedback. As the providers of the professional development sessions were mainly Language Centre faculty, this allowed them to share context-related knowledge and expertise, as well as improve their own presentation skills. There were also speakers from other Oman's educational institutions and people from outside Oman who gave interesting and stimulating presentations, adding to professional discussions on multiple language teaching-learning issues. Apart from providing a variety of developmental training opportunities, the Unit also disseminated information on local and international professional events through Language Centre webpage, e-mail and postings on the professional development note board.

Though the Unit followed a very efficient road map in achieving its goals, it often faced challenges that included but were not limited to accommodating the best time for professional development events because faculty often had different teaching schedules and different work locations on the premises of the university. To gain a complete scope of the challenges and capture an overall picture of the professional development needs, wants and areas of expertise, the Unit launched a center-wide survey. The survey, which items were generated from a general workshop for all the Language Centre community, was also aimed at soliciting faculty's opinions on the potential areas for training and professional development initiatives. The results of the survey¹ were summarized to identify challenges, correlate the ascertained interests, needs, expertise and individual initiatives, and customize future training.

The scope of the identified challenges included (a) budgeting time and resources for professional development events; (b) addressing the developmental needs of the Language Centre's diverse teaching community that features diverse educational, cultural background and teaching experience, including experience of teaching in Oman; (c) identifying in-house and external professional development opportunities and expertise; (d) ensuring equal training opportunities and access to all faculty; (e) making professional development

¹ Professional Skills and Needs Survey. (2011). Retrieved October 13, 2016 from http://moodle.squ.edu.om/file.php/6/pd_materials/Final_Survey_Report_2011.pdf

high on the faculty's list; (f) developing new insights for motivating faculty's engagement with responsive professional development programs and events.

Indeed, since the inception of the Unit, its professional development events and initiatives have been systemic and diverse in form, focus and content. However, due to teaching hours, lack of time, and huge workload, a number of faculty members were not able to gain all the professional development they desired. This became the seed for considering virtual professional development opportunities.

One of the first attempts at setting up a virtual site for reading professional development did not attract any interest. Consequently, it was decided to investigate how to set up Virtual Professional Development (VPD) that would be most suitable for the context. This became our research question, namely how teaching practice can be enhanced through motivating virtual professional development, designed for our own context. This question was answered through the following sub-questions: (a) What VPD affordances are most relevant for this context? (b) What pedagogical design bests enhance teaching practice in this context? (c) What support is needed to meet the VPD learning challenges?

3. VIRTUAL PROFESSIONAL DEVELOPMENT AFFORDANCES

Research has identified many features of the virtual context that can extend professional development possibilities. The literature identifies at least four benefits in technological efficacy, networking both within the campus and with other communities, and finally the ability to support reflective learning in ways that are generally superior to classroom contexts (Mackey, 2008; Ertmer, 2005; Tuzlukova et al., 2013).

3.1. Computer efficacy

Computer efficacy research shows that there is a significant link between computer efficacy and integration of technology into teaching; that where teachers become more comfortable with using computers for learning, they are more likely to use it in their teaching. In his research, Brinkerhoff (2006) found however, that this took time in that it two several weeks of professional development over two years before the faculty began to see the changes in their perspectives about teaching and choosing to use technology in their course designs. Ertmer (2005) would concur with these findings, as she found in her review of the literature, that technology integration is related to belief systems that were changed through practice, and that this takes time. This suggests that it may not be isolated workshops that are the primary enablers of technology efficacy, but that sustained technology-based professional development may indeed be the better context. As previous research has found there is a need at the Language Centre to enable increase computer efficacy (Tuzlukova et al., 2013), a virtual context for professional development can provide a good context for increasing teachers' capability and competency in using computers for teaching and learning.

3.2. Reflective learning

There is a growing awareness of the importance of the role of professional development for all teaching faculty and the growing role of the virtual context to meet these needs (Milligan, 1999; Sivy & DiPietro, 2011). It is also noted that professional development includes three main areas of career development: learning new methods, learning new ideas,

and, finally, reflection on practice. There is much that teachers experience as they teach, but this experience needs to be reflected on for their professional practice to benefit, as the process of reflection enables teachers to examine, verbalize and develop their belief systems, as these determine how they teach. According to Boud, Keogh and Walker (1985), reflection activities in professional development courses often result in no learning, especially where these have been contained within defined structures, or time constraints of a classroom. Reflection, they comment, requires more unstructured and less formal contexts for exploration, reflection and restructuring of belief systems. However, this level of reflection is much more likely to be developed in a virtual context, as the online context can promote deeper-thinking reflective skills (Garrison, 2003; Jonassen & Kwang, 2001) This can be due to the extended availability of courses when they are online or that interactive technology such as forums and wikis provide a better context for collaborative and reflective learning. It may also be due to the challenge of interacting through a technological barrier where the physical distance between participants often promotes sharing at a deeper more thoughtful level (Jonassen & Kwang, 2001; Tu & McIsaac, 2002). The key of course to more effective learning is to manage the virtual context design to ensure the professional development can achieve these potentials.

3.3. Networking on and off Campus

As suggested previously, peer interaction has an important role in professional development, and the role of technology in supporting networking provides the opportunity for greater sharing and collaboration. Socially-based learning is well founded in research (Goodyear, 2004; Sorenson, 2005). Vygotsky (1978) proposed that learning occurs within the social context, and without this context, the “development of the mind is impossible (Cole & Wertsch, 2001, p. 4). The virtual context can extend interaction opportunities with colleagues, and with the wider online network of the internet. These extended networking possibilities provide greater opportunities to share with others in the same or similar field and in diverse situations, resulting in negotiation of new knowledge from a wider range of experiences. As Mackey (2008) explains, educators can become members of different communities each with their own perspectives; and greater professional learning often results as educators seek to align different concepts in their own personal pedagogies. This means that the development of a virtual learning space at the Language Centre can open up new worlds of learning, both within campus and outside its walls, far beyond the reach of traditional professional development workshop capabilities.

Virtual professional development can be extended to informal learning through networking with others on campus. Informal networking is not new, but the use of a virtual environment enhances the range and quality of learning, especially where the participants have created a Community of Practice (CoP). Communities of Practice, first coined by Wenger and Lave in 1991, (Smith, 2009) are group of people who interact and learn from each other. CoPs are more than just a ‘group’, but have three essential characteristics, first that members come together with learning as the intention, and defined by a domain of shared interest, second by building relationships through sharing their learning, and third between them develop a set of resources and support (Smith, 2009). With the advent of technology, CoPs have become much more widespread in supporting professional development as the technology is able to foster learning through relationships within both time-bound and asynchronous contexts. Although these communities provide many benefits, they are not always the only community of choice as a high amount of effort and commitment

is required (Fontainha & Gannon-Leary, 2008), and therefore CoPs may not be the only choice of an online community structure.

An extension of an online support community is that of networks and social support outside the campus; within the international community. Professional Learning Networks (PLNs) are an example. These are networks that link professionals to each other in a wide range of online communities, enabling them to share ideas and experiences with others. For example, this may be through Twitter, Linked-In, Web 2.0 Classroom Ning Community, or specific domain-based communities. Virtual Professional Development can also be through creating or following experts' academic blogs or taking more formal professional development courses through online offerings. Teachers as individuals select the communities and the individuals they wish to network with, share and learn from, hence this professional development is very individualized, depending on own needs and interests. A major advantage therefore in a PLN, individuals do not need to depend on their own organization for professional development, it is available anywhere there is internet access. Trust (2012) comments that this is extremely important as teachers are the key to enhancing student learning, and those that do not network with others, miss out on the support and knowledge to develop their practice.

It can be seen that a virtual context for professional development provides opportunities for innovation and learning far beyond the confines of a classroom. However, for faculty to avail themselves of these benefits, they need to feel comfortable socializing and learning in the virtual context. Computer efficacy is vital; and using the online context for professional development is an effective means for faculty to develop this ability; this is the fourth benefit of the virtual context for professional development. However, it is the choice of the teachers which of these are relevant for their own context, and how it should be designed to achieve their goals.

4. PEDAGOGICAL DESIGNS FOR THE VIRTUAL CONTEXT

The virtual context should be designed to enable the professional development affordances to be achieved. As has been noted, faculty need a context that enables collaboration, reflection on practice and application to their context, and in a way that is motivating and clearly based on the authentic environment of their professional practice of language teaching. This obviously means that the virtual design is more than a document resource site, but one that promotes reflective collaborative learning in authentic contexts. These concepts are in fact the basis of good course design. Merrill (2002) comments that good course design is based on three principles: the learners need to know the outcomes or achievements from the learning; they have the opportunity to apply the learning; and that real world contexts are used.

It is generally acknowledged that learning is an active social process, as learners build their knowledge using their prior knowledge, resources and tools in their contexts, as described by theorists Vygotsky (1978), Jonassen and Kwan (2001), Cullata (2013). Prince's (2004) analysis of active learning in the literature showed overwhelming evidence in several thousand students that active learning significantly increases the learning in depth, retention and motivation. The research he evaluated also found that the learning significantly increased where the learning was both collaborative and problem-based. Authentic or 'situated' learning is also well founded in research (Brown, Collins & Duguid, 1989; Cobb & Bowers, 1999). The design of VPD should therefore be based on these

principles. These types of learning designs put the active learning or problem solving at the center, with the materials and interaction as the support for achieving skill development (Grabinger 2007; Hall 2007; Herrington, Reeves, Oliver & Woo, 2004) as exemplified on AUTC Learning Design site (AUTC). Thus this design concept was used in the Language Centre VPD design. As cultural values were found to shape learning (Hall, 2011; Liu, Liu, Lee & Magjuka, 2010), it was expected that modifications to the VPD design would be required to make it fit with the context more effectively, an iterative research approach would be appropriate.

5. BARRIERS AND CHALLENGES TO PROFESSIONAL DEVELOPMENT IN A VIRTUAL CONTEXT

Learning in a virtual world poses its own challenges, apart from the initial aspects of learning how to use the technology. On initial access to the virtual context, participants can find it stressful as the online structure may not be obvious, with no clear direction of what to do or where to click to access what they need. For example, the specific order of the tools and activities may not be clear; or there may be no guide for meaningful use of interactive tasks. Research has found that most learners do need more structure and support to guide them through online courses as compared to classroom contexts, to decrease feeling of being lost or alone (Gunawardena, Nolla, Wilson & Lopez-Islas, 2001; Hewing, 2005). This means that the VPD should be more than a list of resources and links to activities.

Milligan (1999) comments that online learners need more support such as through easy means to contact people efficiently where they require help, either in help desks, FAQs, emails or extra introductory content (Milligan 1999, Ludwig-Hardman & Dunlap, 2003). Therefore, in this project we needed to ensure there was both educational and technical support from the beginning. To add to this, we used research tools to identify the areas in which our participants are finding the online context challenging so that improvements can be integrated in the VPD design.

6. FACULTY CONTRIBUTION TO VPD DESIGN IDEAS

Following a previous unsuccessful (non-attended) attempt to design virtual professional development, it was decided to involve interested teachers in the design of the VPD. Two three-hour workshops were set up to introduce the concepts of VPD, and to gain feedback from participants on how they wanted the professional development in the virtual environment to be designed. A set of questions and reading resources were sent to those interested in participating, and time was given for preparation of responses before the workshops.

6.1. The questions

The questions provided focused around the key question of ‘what criteria, plans, features do we need for VPD that would be beneficial and that we would want to be a part of’. The questions aimed to draw out what participants felt were important characteristics for the Language Centre VPD, and how those characteristics could be developed or incorporated into the VPD design, for example in the importance of Community of Practice

and how it could be developed. The structure of these questions was based on a socio-cultural learning design concept (Grabinger 2007, Hall 2007), in that it focused not on the reading, but on the problem to be solved by the group of participants. Questions were a scaffold to enable responses to be directed towards the workshop question. The articles therefore were not the focus, but were resources to help teachers in question response.

6.2. The workshop design

A virtual learning environment on Moodle platform was set up to be used in a blended manner in a computer laboratory in two three-hour sessions. Each of the questions from the handout was written in a different forum, and its sub-questions as discussion topics. The use of forums made it easy for participants to add comments to any topic, in any order, and to be able to write reflectively. It also meant that the recorded discussions could be analyzed later.

Both workshops started with a short face-to-face introduction of the purpose of the discussions. The first two questions in the workshop were then discussed together in class, as an example of what was required in how the responses were made. Participants were then able to move on to the individual questions and their readings.

6.3. Teacher responses

On the first day of the workshops, it was found that participants had either not looked at the readings or had not looked at the questions, therefore the workshop had to start from the beginning, introducing the questions, use of the readings as resources, and the purpose of finding their comments to build a VPD for the Language Centre.

On the second day of the workshop, most of the participants were different from those who came on the first day; with a total of ten over the two days. Most had assumed that it was an either/or, not a two-day workshop. Therefore, not all the questions were covered in the time-frame. Similar to the first workshop, most participants either did not read the articles beforehand or did not read the questions to see which parts of the articles they needed to read and reflect on. This suggests that the responses in the workshops would be less reflected on, and that for further workshops more clear guidelines would be needed.

6.4. The participants

There were 10 participants, all English language faculty who teach both foundation and credit courses offered by the Language Centre. Their responses recorded below are pseudonyms assigned to the participants to differentiate their responses.

6.5. Responses concerning VPD affordances

The questions in the forums covered the need of technology efficacy, access to networks inside or outside the campus, and the types of topics. Within each category, the teachers were asked about their relevancy for the Language Centre, and any practical steps for implementation.

All four teachers who responded to the technology efficacy question agreed this was an important benefit of using the virtual context. Darell did mention that many 'don't know how the technology can improve their work', and Helen noted that some due to age were 'more technologically reticent'. There was also agreement on the benefits of external

networks, through Helen also commented that it does 'not need to be implemented immediately'. However, no comments were made on any practical approaches to achieving this. Finally, in relation to the affordances concerning topic types; of the seven who responded, five commented that reflective topics would be good, and three of these also noted that other types of topics would be good as well, as groups and as individuals. No clear preference emerged, although the benefits of reflection was noted "if we learn something, implement it in the classroom and then reflect on it again, whatever we learn will be of much greater use" (Barbara), and Susan commented on the opportunities reflection provides. According to her, 'reflective issues give the chance to explore whatever is there in the back of your mind'. Three participants also identified another key benefit of VPD that of the long term characteristic of the virtual context. For example, Susan noted that the learning should be 'an ongoing process of discussion, reflection and further discussion'. Darren commented: "In a workshop, participants have only the opportunity to give their immediate reflections ... A VPD activity could allow people to take some initial content ... and reflect/perform a task that can then be shared or otherwise discussed". Francis made similar comments. Barbara suggested that with the online context, "we have an opportunity to keep practical resources and individual reflections in a common accessible database".

There were also comments from the participants on using different groups depending on the topic purpose, that is the online context can provide flexibility of design, depending on the purpose. Thus, it was clear that those involved affirmed the key affordance of the virtual context for professional development, and therefore the importance for the Language Centre. It was also noted by the participants that it would be necessary to ensure that the designs were adapted for the local context and culture.

6.6. Responses concerning the pedagogical design

Of the two who responded to this question, one person, Barbara commented on preferring the 'integrated' (blended) model' described in the readings and suggested monthly face-to-face meetings after discussions were complete. She also felt that the course design should include addition of resources. No comments were made about other models or how collaboration could be managed, as per course readings.

6.7. Working with challenges of learning in a virtual context

The three who responded to this topic all noted that there are barriers to using the online context, Francis noted that "there's a barrier to any kind of learning for some people". Francis also commented that people often "resist learning because they don't think they need it", which Barbara agreed with. They both also felt that extrinsic motivators such as certificates would help some to avail themselves of the professional development, although intrinsic issues were also noted by Francis, namely in the area of 'buy-in'. To exemplify, according to Francis, "the biggest challenge is buy-in - finding a way to encourage all teachers to participate". Darrell noted, that support in using computers would be an important issue in the Language Centre.

7. DISCUSSION OF FINDINGS

All participants commented positively in the discussions about VPD and many wrote long thoughtful reflections, suggesting that the very act of reflecting on this topic provided an opportunity to express the thoughts they had in mind but not had the opportunity to do so elsewhere. Their responses to the questions were all in agreement with the affordances of the virtual context for professional development, and perhaps their reflective responses were a practical example of this. However, there was very little about exactly how they would like to see the VPD designed or what ways they could be involved. Thus, at this stage, we did not have the data that answered the question about what criteria, plans, and features we needed for VPD that would be beneficial and that we would want to be a part of. Therefore, these types of questions should be the subject of further investigation with interested teachers, either in a continuation forum or a separate workshop later in the semester.

7.1. Recommendations from the first workshop

The manner in which the workshops were used was positively responded to by the teachers, but the researchers felt that several changes would be required before the outcomes could be used in the design of the learning context. This was because of several reasons. Firstly, the instructions were not clearly received. Secondly, there was insufficient time spent on the questions and by only a very small number of participants. Thirdly, the responses were from only zero to three people on each point which was felt is insufficient for the basis of design plans. Fourthly, the articles used in the design did not appear to be used sufficiently in the discussions, therefore the discussion guidelines should be designed and explained more clearly. Therefore, it was felt that these two workshops were a 'pilot' of the Language Centre VPD discussion workshop, which will be modified based on the above points and then repeated later this semester. The changes that are proposed to be incorporated include (a) constructing clearer guidelines on the workshop pedagogical design and how the workshop questions and resource articles are to be used in the workshop; (b) promoting as a six-hour workshop in two parts; (c) providing an online journal blog or forum to reflect on one's own views of VPD; (d) encouraging a greater number of participants; (e) using the feedback from the previous workshop to modify the questions used in the discussions.

8. CONCLUSION

This initial investigation found that teachers were very positive about the virtual professional development and the affordances of the virtual context. Further discussions and investigation are required to identify how it should be done and applied to the context of English language teaching in the tertiary education level in Oman to enable faculty to benefit from flexible professional development opportunities in the virtual environment and bring innovation into language classroom.

REFERENCES

- Al-Khanjari, Z. (2013). From e-learning to personalized adaptive learning. *Horizon*, 274, Sultan Qaboos University Press, p.5
- Ascilite Melbourne (2008). Retrieved October 1, 2015 from <http://www.ascilite.org.au/conferences/melbourne08/procs/mackey-j.pdf>.
- AUTC (2016). Retrieved May 13, 2016 from <http://www.learningdesigns.uow.edu.au/index.html>.
- Barnes, S.B. (2003). *Computer-mediated communication: human to human communication across the Internet*. Allyn and Bacon.
- Brinkerhoff, J. (2006). Effects of a Long-Duration, Professional Development Academy on Technology Skills, Computer Efficacy, and Technology Integration Beliefs and Practices. *Journal of Research on Technology in Education*, 39 (1), 19- 22.
- Brown, J. Collins, A. & Duguid, P. (1989). Situated Cognition and the Culture of Learning. *Educational Researcher*, 18, 32-42.
- Cobb, P. & Bowers, J. (1999). Cognitive and Situated Learning Perspectives in Theory and Practice. *Educational Researcher*. 28(2), 4-15.
- Cole, M., & Wertsch, J. V. (2001). Beyond the individual-social antimony in discussions of courses: The challenge of context. *Studies in Higher Education*, 23(2), 191-206.
- Cullata, R. (2013) Instructional design. Weaknesses of the ADDIE Model. Retrieved February 27, 2014 from <http://www.instructionaldesign.org/>.
- Boud, D., Keogh, R., & Walker, D. (1985). Promoting reflection in learning: A model. In D. Boud, R. Keogh, & D. Walker (Eds.), *Reflection: Turning Experience into Learning* (pp. 18-40). London: Kogan Page.
- Ertmer, P.A. (2005) Teacher pedagogical beliefs: The final frontier in our quest for technology integration? *Educational Technology Research and Development*. 53(4), 25-39.
- Gannon-Leary, P. & Fontainha, E. (2007). Communities of practice and virtual learning communities: *Benefits, barriers and success factors*. eLearning papers. 5. Retrieved January 28, 2016 from www.elearningpapers.eu/.
- Garrison, D.R. (2003). Cognitive presence for effective asynchronous online learning: The role of reflective inquiry, self-direction and metacognition, in: J. Bourne & J.C. Moore (Eds.), *Elements of quality online education: Practice and direction*, 4, (pp.29-38). The Sloan C Series, The Sloan Consortium, Needham, MA.
- Goodyear, P. (2004). Patterns, pattern languages and educational design. In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds), *Beyond the comfort zone: Proceedings of the 21st ASCILITE Conference* (pp. 339-347). Perth, Retrieved May 2, 2016 from <http://www.ascilite.org.au/conferences/perth04/procs/goodyear.html>.
- Grabinger, S.; Aplin C & Ponnappa-Brenner, G (2007) Instructional Design for Sociocultural Learning Environments. *e-Journal of Instructional Science and Technology (e-JIST)*, 10(1). Retrieved October 1, 2016 from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.126.9289&rep=rep1&type=pdf>.
- Gunawardena, C.N., Nolla, A. C., Wilson, P. L., & Lopez-Islas, J. R. (2001). A cross-cultural study of group process and development in online conferences. *Distance Education*, 22(1), 85-122.
- Hall, A. (2011). Designing culturally appropriate E-learning for learners from an Arabic background: A study in the Sultanate of Oman. In Edmundson, A. (Ed.), *Cases on Globalized and Culturally Appropriate E-Learning: Challenges and Solutions*. (pp. 94-113). IGI Global: Hershey, PA.

- Hall, A., (2007). Vygotsky Goes Online: Learning Design from a Socio-cultural Perspective, Learning and Socio-cultural Theory. *Exploring Modern Vygotskian Perspectives International Workshop*, 1(1).
- Herrington, J., Reeves, T.C; Oliver, R., Woo, Y. (2004). Designing authentic activities in Web-based courses. *Journal of Computing in Higher Education*. 16(I), 3-29.
- Hewling, A. (2005). Culture in the online class: Using message analysis to look beyond nationality-based frames of reference. *Journal of Computer-Mediated Communication*, 11(1). Retrieved October 23, 2016 from <http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.2006.tb00316.x/abstract>.
- Jonassen, D. H. & Kwan, H. I. (2001) Communication patterns in computer mediated versus face-to-face group problem solving. *Educational Technology, Research and Development*, 49 (1), 35-51.
- Katz, J. E., & Rice, R. E. (2002). *Social consequences of internet use: Access, involvement, and interaction*. Cambridge, MA: MIT Press.
- Levy, P. (1997). *Collective Intelligence: Mankind's emerging world in cyberspace*. New York: Plenum Press.
- Liu, X., Liu, S., Lee, S.-h., & Magjuka, R. J. (2010). Cultural Differences in Online Learning: International Student Perceptions. *Educational Technology & Society*, 13 (3), 177–188.
- Ludwig-Hardman, S. & Dunlap, J. (2003). Learner Support Services for Online Students: Scaffolding for success. *The International Review of Research in Open and Distance Learning*, 4, (1), 1-14. Retrieved November 1, 2015 from <http://www.irrodl.org/index.php/irrodl/article/view/131/602>.
- Sivy, M. & DiPietro, M. (2011). Transitioning to Virtual Teacher Professional Development: Intentionality in a Virtual World Environment. *Technology and Teacher Education Annual*, 2; 754-761.
- Mackey, J. (2008). Blending real work experiences and virtual professional. Proceedings Ascilite. Melbourne, 2008.
- Merrill, M.D., (2002) First Principles of Instruction. *Educational Technology Research and Development*, 50(3), 43–59.
- Milligan, C. (1999). Delivering staff and professional development. Using Virtual Learning Environments. Heriot-Watt University. Report: 44. JISC Technology.
- Prince M (2004). Does Active Learning Work? A review of the literature. *Journal of Engineering Education*. 93 (3), 223-231.
- Smith, M. K. (2009). 'Jean Lave, Etienne Wenger and communities of practice'. *The encyclopedia of informal education*. Retrieved June 3, 2016 from www.infed.org/biblio/communities_of_practice.htm.
- Sorensen, E. K. (2005). Networked elearning and collaborative knowledge building: Design and facilitation. *Contemporary Issues in Technology and Teacher Education*. Retrieved May 23, 2016 from <http://www.citejournal.org/vol4/iss4/general/article3.cfm>.
- Thurlow, C., Lengel, L. & Tomic, A. (2004). *Computer-mediated communication*. Sage Publications Ltd.
- Trust, T. (2012). Professional Learning Networks Designed for Teacher Learning. *Australian Educational Computing*, 27(1),34-38.
- Tu, C. H & McIsaac, M; (2002) The Relationship of Social Presence and Interaction in Online Classes. *The American Journal of Distance Education*. 16 (3) 131-150.
- Tuzlukova, V., Greenwood, L., Al-Siyabi J & Scully, J. (2013). Language Teachers' Perceived Computer Self-efficacy: Identifying Knowledge and Skills Gaps for Teacher-driven Professional Development. *AWEJ*. 4(3), 284-299.

- Tuzlukova, V. & Rozina, I. (2010). Virtual Research Communities: From International Patterns to Local Implementations. In: Rotimi Taiwo (ed.) *Handbook of Research on Discourse Behavior and Digital Communication: Language Structures and Social Interaction* (745-758). Hershey, PA: IGI Global.
- Virtual learning communities: benefits, barriers and success factors. *eLearning Papers*, 5.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, Mass.: Harvard University Press.