



CREATIVE LEARNING AND MOOCs

*Harnessing the Technology
for a 21st Century
Education*

*Edited by
Nabil Sultan
and
Haifa Jamal Al-Lail*

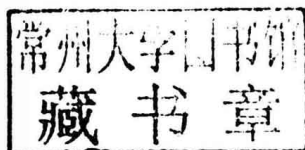


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INTRODUCTION

NABIL SULTAN AND HAIFA JAMAL AL-LAIL

This book contains selected articles that were presented at the 11th Learning and Technology Conference held by Effat University in Jeddah, Saudi Arabia in February 2014. The articles represent research and viewpoints by a cohort of academics from different educational communities. The central theme of these articles is the realization that learning and teaching is being impacted by technology and innovation. Schools, colleges and academic institutes took the lead in harnessing this technology and created innovative opportunities for learning that did not exist before, such as e-learning. The emergence of Massive Open Online Courses (MOOCs) represents a new and interesting development in the use of technology and innovation for creating further opportunities for both students and educators.

Chapter One sets the scene for this book. In this chapter Tayeb reflects on the traditional and new modalities of learning and teaching. In doing so, she highlights the importance of creativity and innovation and the use of technology for the development of the twenty-first-century knowledge society. Through this chapter Tayeb advocates the need to empower educational actors in order to unlock the creative and innovative potential of young learners.

Chapter Two by Sultan is a reflection of the disruptive characteristics of some innovations with a focus on online learning and teaching and MOOCs. In doing so the author invokes the theory of disruptive innovations as proposed by Christensen and his colleagues from Harvard Business School to highlight those disruptive qualities. The author reserves much of this chapter for MOOCs by tracing its recent history and potential impact on higher education in developed and developing countries while also highlighting the challenges that this innovation faces.

While Muhammad in Chapter Three reflects further on the potential and challenges of MOOCs he does not see this phenomenon as a threat to established higher education institutes. Rather, MOOCs, according to him, can be used alongside those establishments in order to improve post-secondary school education. Moreover, he sees MOOCs as a useful tool that can be

used to fill gaps of knowledge through training, continuing education and life-long learning.

In Chapter Four Brahimi and Sarirate provide further insights into the recent developments of MOOCs and explain how faculty members and students interact with this learning methodology. In doing so, the study focuses on the analysis of some surveys that were conducted by major survey companies and universities worldwide. The authors see MOOCs as a development that will bring a transformative change to education in general and to the way academic institutions are working.

In Chapter Five El-Jishi and Taylor present a case study exploring opinions of students with regard to MOOCs at a private university in Saudi Arabia. The study is based on a mixed method approach that uses a closed question survey and structured interview questionnaires. The study reveals interesting but mixed views about MOOCs from these students.

In Chapter Six Hyjazie presents a case study aimed at exploring the prospects of MOOCs from a student experience perspective. Issues relating to course size, supporting staff, communications with students and class forums are presented and discussed. In doing so, the author highlights and identifies factors that can be avoided for future online courses in order to ensure their success.

In Chapter Seven Mohammad et al examine some of the challenges that MOOC providers are facing by focusing on marketing and student engagement. In doing so, the authors propose the application of context-awareness techniques and principles to address those challenges. Furthermore, the authors also provide a general structure for storing context using three different database models and compare them in terms of their performance and modelling ability.

In Chapter Eight Alsaqqaf presents a case study to explore the prospects of a pre MOOCs initiative by implementing open courseware through an open education resource system at a Saudi University. The author also examines the motivation and needs for implementing such a project and the opportunities and challenges it presents.

In Chapter Nine Ahmed and Sindhi examine the impact of social media from an education perspective by exploring the advantages of using personal learning networks. The authors devote a great deal of their chapter to examining Edmodo, the social learning platform that was developed in 2008 by two former Chicago education administrators.

Chapter Ten by Ansari examines the merits of using video games to enhance learning. Through using a case study Ansari in this chapter focuses particularly on massive online games as useful educational tools and their

potential for developing other learners' skills such as efficient team work and communication.

Reflecting on his teaching experience, Bozkaya, in Chapter Eleven, explores the application of various hands-on teaching tools, online games and other teaching aids for facilitating interactive teaching and active learning. In doing so he presents his actual experience of using such a tool for a college's junior-level Operations Management course.

In Chapter Twelve Large looks at the impact of songs on learning. She examines the effects of listening to story-songs via YouTube on the vocabulary uptake amongst adult female students who attend elementary classes at the Jeddah British Council in Saudi Arabia. This study also explores the possibility of replicating this approach within the country. Furthermore, the author also examines the possible influence of offering more teacher support in the form of deliberate teaching, compared to conducting a more storytelling or incidental-type learning session, and the repercussions of these methods on the resulting student vocabulary depth of knowledge.

Khalil et al. in Chapter Thirteen investigate an e-learning system that offers help with learning Arabic and English text using sign language for deaf Arab children. The system is designed to improve the children's independence, confidence, motivation and social contact. Moreover, the system can also be used by hearing people who want to learn the language in order to communicate with deaf people.

In Chapter Fourteen Hamdan uses a survey conducted at a Saudi university for female students in order to investigate the relationship between culture and online learning and explore the ways in which culture and cultural values affect the application and success of online-learning strategies. Particular attention in this chapter is directed at learners' perceptions of the advantages and disadvantages of online communication.

In Chapter Fifteen, Farooq, Hafeez, and Shah use a case study to explore online learning from the perspective of moral values and ethical training given that learning, according to these authors, is not only about the transmission of knowledge but also about character building and producing a skilled workforce equipped with sound moral values.

CHAPTER ONE

INNOVATIVE TEACHING AS A MEANS FOR ENHANCING CREATIVE LEARNING

AGHAREED TAYEB

Abstract

Creativity and innovation are becoming increasingly important for the development of the twenty-first-century knowledge society. They contribute to economic prosperity as well as to social and individual wellbeing and are essential factors for a more competitive and dynamic community.

Education is seen as central in fostering creative and innovative skills. Creativity is a form of knowledge creation; therefore stimulating creativity has positive effects for learning. Thus, educational actors should have the power to unlock the creative and innovative potential of the young. *Creative learning* is therefore any learning which involves understanding and new awareness, which allows the learner to go beyond notional acquisition, and focuses on thinking skills. It is based on learner empowerment and centredness. *Innovation* is the application of such a process or product in order to benefit a domain or field – in this case, teaching. Therefore, *innovative teaching* is the process leading to creative learning, the implementation of new methods, tools and content which could benefit learners and their creative potential. In this respect an innovative teacher is someone who teaches in a way that is new or groundbreaking at the school, while integrating ICT to support that teaching, i.e., is someone who uses ICT in new or groundbreaking ways. Meanwhile, to be innovative, teachers need to reflect, consider possibilities, interact with others, and try out ideas.

Teaching will be highly effective if teachers start to use the recent multimedia technologies like computers extensively or modify the conventional mode of teaching.

A comparison between traditional learning and multimedia learning is given in the text. The article also provides an overview of the theoretical foundations for creativity and innovation in the context of education. It emphasizes the need to encourage the development of pupils' and students'

creative and innovative potential. Also, the article develops the notions of “creative learning” and “innovative teaching”.

Keywords: Teaching; Learning; Creativity; Innovation; Multimedia Teaching

Introduction

Education is an engine for the growth and progress of any society. It not only imparts knowledge and skills and inculcates values, but is also responsible for building human capital which breeds, drives and sets technological innovation and economic growth. Information and knowledge stand out as very important and critical inputs for growth and survival. Rather than looking at education simply as a means of achieving social uplift, the society must view education also as an engine of advancement in an information era propelled by its wheels of knowledge and research leading to development (Damodhara & Rengarajan, 2007).

Creativity has been defined as a product or process that shows a balance of originality and value. It is a skill, an ability to make unforeseen connections and to generate new and appropriate ideas. Creative learning is therefore any learning which involves understanding and new awareness, which allows the learner to go beyond notional acquisition and focus on thinking skills. It refers to the potential for learners to develop their creative skills and learn in a new, creative way.

Innovation is the application of such a process or product in order to benefit a domain or field – in this case, teaching. Therefore, innovative teaching is the process leading to creative learning, the implementation of new methods, tools and contents which could benefit learners and their creative potential.

Creative learning requires innovative teaching. Innovative teaching is the practice both of teaching for creativity and of applying innovation to teaching practices. Both aspects call for an educational culture which values creativity and sees it as an asset in the classroom (Ferrari, Cachia & Punie, 2009). Teachers are key figures in constructing a creative climate, but they need support from both policymakers and institutions. In particular, curricula and assessment are key areas to be addressed in order to allow creativity in the classroom.

Motivation is one of the main factors conducive to creative output. Amabile (1998) specified that intrinsic motivation is more important than extrinsic. For Amabile, intrinsic motivation is about passion and interest, an internal desire to do something. She sees motivation as one of the three components of creativity, the other two being expertise and creative thinking skills (see Figure 1-1).

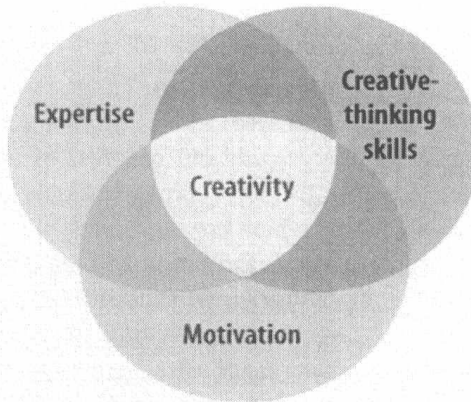


Figure 1-1. The three components of creativity (Amabile, 1998)

Even if all three components of creativity can be improved, motivation is the one that can be most immediately influenced by the work environment, as expertise and creative-thinking skills are difficult and time consuming to influence (Amabile, 1998).

Creative experience can be seen as opposite to reproductive experience (Taylor, 1988). Moreover, creativity is the ability to see possibilities that others haven't noticed (Craft, 2005), the critical process involved in the generation of new ideas (Esquivel, 1995), the ability to make connections that are not common. It requires cognitive and creative thinking skills, in other words divergent thinking (Runco, 1990) and imagination (Craft, 2005), and also evaluation (Runco, 1990). Creativity also demands a set of personality traits which can be enhanced or modified by the environment. For this reason, the environment needs to nurture creativity and to boost intrinsic motivation. Besides, creativity is not limited to the arts, as it can be manifested in all ambits of human knowledge. Moreover, it should not become an instrumental term to be filled with any kind of content and used in every kind of context (Gibson & Ewing, 2011). Figure 1-2 shows a summary of these characteristics: in the outer circle what creativity requires, in the inner shape what creativity is.

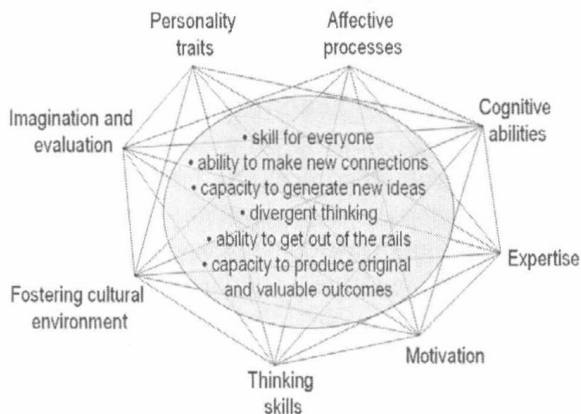


Figure 1-2. What creativity is and what it requires

Technologies play a crucial role in learners' lives and can enable educational change towards an innovative and creative school environment. They could act as a platform to foster creative learning and innovative teaching and are currently offering a variety of opportunities for constructive change. However, access to technology is not enough. Accordingly, this report argues that both teachers and learners must acquire the critical skills in their use of technologies to be able to benefit from them in an effective, innovative and creative way.

Educational systems should also take into account the empowerment culture brought about by new technologies, putting the learner at the centre of the learning process. Otherwise, there is the risk that education policies and systems become irrelevant for students' real and future needs.

There are other factors, alongside technologies, that support creative learning and innovative teaching. These factors have been called enablers and are the circumstances or support mechanisms that make creativity and innovation more likely to thrive. These are: assessment; culture; curriculum; individual skills; teaching and learning format; teachers; technology; tools. The co-existence of several of these factors would give rise to an enabling environment where creative learning and innovative teaching could blossom. If enablers are not present, creativity will be less likely to flourish. If, on the other hand, all enablers are in place, it is still not possible to deduce that creativity and innovation are happening, as teachers and students will still have to actively engage in the creative and innovative process. Enablers

are therefore indicators of the kind of environment which could nourish creative learning and innovative teaching.

Traditional Teaching Method

In the pre-technology education context, the teacher is the sender or the source, the educational material is the information or message, and the student is the receiver of the information. In terms of the delivery medium, the educator can deliver the message using “chalk-and-talk” and overhead projector (OHP) transparencies. This directed instruction model has its foundations embedded in behavioural learning (Skinner, 1968) and it is a popular technique, which has been used for decades as an educational strategy in all institutions of learning.

Basically, the teacher controls the instructional process, the content is delivered to the entire class and the teacher tends to emphasize factual knowledge. In other words, the teacher delivers the lecture content and the students listen to the lecture. Thus, the learning mode tends to be passive and the learners play little part in their learning process (Orlich, 1998). It has been found in most universities by many teachers and students that the conventional lecture approach in the classroom is of limited effectiveness in both teaching and learning. In such a lecture students assume a purely passive role and their concentration fades off after 15–20 minutes. In this context, teaching in classroom using chalk and talk is “one way flow” of information as seen in Fig. 1-3.

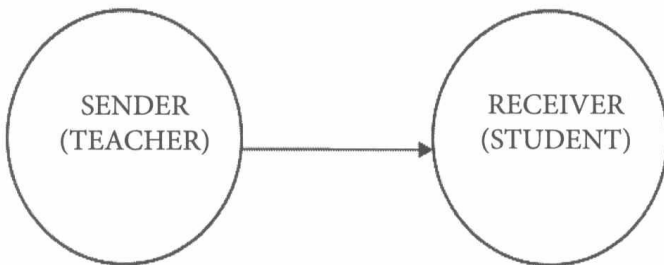


Figure 1-3. Traditional learning: A one-way flow learning process
(Teo & Wong, 2000)

Innovative Methods of Teaching (Multimedia Learning Process)

Traditional educational approaches have resulted in a mismatch between what is taught to the students and what industry needs. As such, many institutions are moving towards problem-based learning as a solution to producing graduates who are creative, thinking critically and analytically to solve problems. In this paper, we focus on using multimedia technology as an innovative teaching and learning strategy in a problem-based learning environment by giving the students a multimedia project to train them in this skill set.

Problem-based learning is becoming increasingly popular in educational institutions as a tool to address the inadequacies of traditional teaching. Since these traditional approaches do not encourage students to question what they have learnt or to associate with previously acquired knowledge, problem-based learning is seen as an innovative measure to encourage students to learn how to learn via real-life problems (Boud & Feletti, 1999).

Being in the information era (though many futurists claim that we have passed into a post-information age) it is rather straightforward to realize that a new agenda has been introduced in our lives, where Information and Communications Technologies (ICT) play an important role in regard to education, collaboration, communication, etc. Education (compulsory, higher schools, universities, etc.) seems to be a particularly important sector that is being influenced by new technologies, having in mind the important role that education has in today's world (Vagelatos, Foskolos & Komninos, 2010).

In contemporary pedagogical theories, the cooperation between educators and students is considered the most efficient way to learn in the so called framework of "active participation in learning". People who interact experience cognitive conflicts that drive them to new cognitive models. Students learn through cooperation with other students. On this basis, cooperative activities which promote active learning are encouraged, as well as respect for different approaches to and emphasis on authentic situations (Paraskeya & Dimakos, 2009).

The Internet evolution that we have experienced in the last two decades, and more specifically the so called Web 2.0, has as main characteristics exactly what was described above, the most important being the cooperative environment. Thus the question that arises is what innovation Web 2.0 brings to the educational system where ICT has already (one way or another) taken place.

The teacher uses multimedia to modify the contents of the material, which will help the teacher to represent the subject in a more meaningful way. The media elements can be converted into digital form, modified and customized for the final presentation. By incorporating digital media elements into the project, the students are able to learn better since they use multiple sensory modalities, motivating to pay more attention to the information presented and retain the information better.

Multimedia, is the combination of various digital media types such as text, images, audio and video, into an integrated multi-sensory interactive application or presentation to convey information to an audience. A representation of multimedia learning is given in Fig. 1-4.

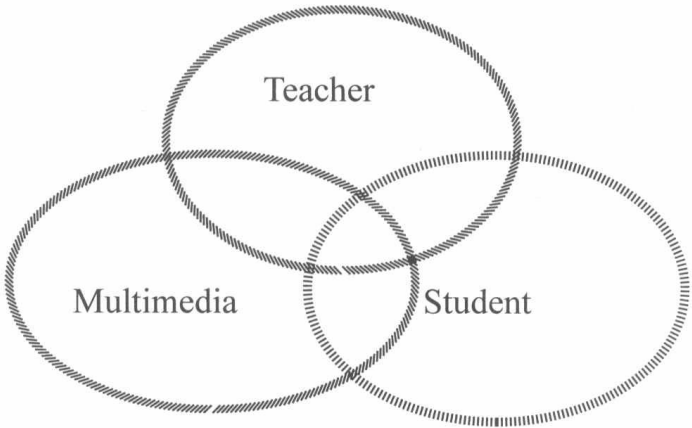


Figure 1-4: Multimedia learning (an interactive learning process)

Enablers are indicators of the kind of environment which could nourish creative learning and innovative learning. The most effective of these enablers are:

Appropriation of technology

There are different ways in which users interact with technology in learning processes (Loveless, 2008). Interaction with technology is primarily based on how users understand the capacity of technology. Loveless calls this level of learning the “active learning process”.

Interaction with ICT provides users with new ways of doing things:

“extend or enhance ability; novel ways of dealing with a task which might change the nature of the activity itself or provide limitations and structure which influence the nature and boundaries of the activity”. When learning to use a new technology, there are different ways users interact with it.

As Loveless argues, it is the interplay of human intention and activity which exploits the potential of a technology.

Literature in this area demonstrates that the digital generation, which is assumed to be totally proficient with technology, often lacks basic technological skills and IT knowledge (Herold, 2009). Thus if we want children to be creative with technology, we have first and foremost to teach them how to use it. A longitudinal study carried out by the CIBER research team demonstrates that the Google Generation tends to rely heavily on search engines and does not possess the critical and analytical skills to assess the information they find on the Internet (Rowlands & Fieldhouse, 2008). This is another example which demonstrates how the potential of a medium is not exploited because students have not been taught the basic skills which are required when searching for information online.

The role of teachers

Literature and research suggest that technology is endowed with a potential to innovate education (Blandow & Dyrenfurth, 1994; Tarrago, 1993). However, teachers need to modify their teaching methods to accommodate the changed interaction patterns. The effective use of new technologies requires innovative teaching skills. When students are not provided with adequate understanding of what technologies can do, there is a high probability that they will replicate familiar forms and ideas using the new tools, as opposed to using the new tools to explore new connections and different ways of fashioning. A study conducted in primary schools on how students used online tools to communicate and participate in online communities highlights the same point (Turvey, 2006).

Despite relative autonomy in virtual spaces, most children did not attempt to experiment with the potential of the tools but rather followed predictable patterns of behaviour. This shows that provision of creative spaces and freedom for exploration does not necessarily lead to creative learning. The role of the teacher within and outside virtual spaces is important in teaching students how to be creative and innovative. Teachers' proficiency in using technology is another issue covered in the literature (Shaffer, 2006). Teachers who are not conversant with the technologies they use in their