Theoretical Framework for shifting to Self-Regulated Learning skills in Nursing Education

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Abstract

Current nursing curricula rely heavily on teacher-centered approaches to student learning. However, researchers challenge educators to shift to student-centered learning approaches (Murphy et al., 2011). This study proposes a theoretical framework which aims to shift the learning approach from teacher-centered learning to student-centered learning. It supports nursing students by fostering the skills needed to activate their self-regulated learning when acquiring clinical skills.

Keywords: Nursing clinical skills, independent learning, self-regulated learning.

Introduction:

Self-regulated learning (SRL) is an active, constructive process whereby students set goals for their learning based on past experience and the contextual features of the current environment (Zhao, 2016) . The individuals take responsibility to manage their personal learning processes. Researchers have shown that self-regulation is the predictor that best explains both learner achievement and the learning environment (Balapumi, 2015). Furthermore, self-regulated students are more inclined to transfer successfully their knowledge from an e-learning system into real-world situations. The motivation behind this research is to investigate the potential of using Mobile Augmented Reality (MAR) technology in term of enhancing self-regulated learning among nursing students. The first stage of the research, which we report here, is a theoretical background.

The Theoretical Framework

Current nursing curricula rely heavily on conventional teacher-centered approaches to student learning. For instance, in clinical skills acquisition, the student-centered approach is compromised through lecturers providing information and demonstrating activities in a traditional, teacher-centered manner, where students are passive recipients with limited practice under direct supervision. Teachers should step back from their traditional role, and allow students to develop analytical and decision-making skills in simulated practice, by providing quality assured learning resources for students, facilitated through learning technologies (Docherty et al., 2005).

Problem-based learning (PBL) is promising as a pedagogy of integration when applied to the gathering of both internal (class-based) and external (real-world-based) knowledge to solve a problem (Mary et al., 2005). As the problem is presented at the beginning of the learning process, before other curricular inputs, students engage in aspects of self-directed and lifelong learning, taking greater responsibility for their own learning.

Additionally, as human error is inevitable, educators need to plan learning activities to safeguard students and patients alike. Teachers who use PBL in simulation labs can guide acute events to ensure that students will be exposed to commonly occurring critical situations, rather than depending on chance during real-life situations. Also, PBL guides the students to think aloud, discover knowledge, think critically and develop self-confidence. It provides a practical clinical teaching approach to guide them in the acquisition of critical reasoning and practical skills (Williams & Beattie, 2008). In other words, within the context of the clinical skills laboratory, where outcomes are measured in terms of clinical competence, the challenge for educationalists is to achieve the fine balance between giving instruction

and promoting enquiry, in order that efficient and effective skills acquisition occurs in the short-term (Docherty et al., 2005).

PBL is an instructional approach whereby students learn through facilitated problem solving that centres on a complex problem and does not has a single correct answer (English & Kitsantas, 2013). Studies have shown that improving self-regulated skills leads to improved problem-solving skills (Raaijmakers et al., 2018 ,Kramarski & Gutman, 2006). Recent studies in nursing education have indicated that students are more active in self-regulated skills when they use PBL. It enhances their deeper understanding of the topic and improves their individual skills (Anh Phuong Nguyen et al., 2016).

In order to be successful with problem-solving skills in a course, students should take responsibility for their learning process by setting goals, monitoring, reflecting and sustaining their motivation from the beginning of the course until the end. This study adopts the widely used Zimmerman's cyclical phase model (Zimmerman, 2002) and a theoretical model of the relationship between PBL and SRL by English and Kitsantas (2013), in which the role of the teacher in the face-to-face classroom has been replaced with an interactive MAR device application, which helps students to access the learning resources in or outside the classroom.

In PBL, the teacher's main role is to structure activities, stimulate motivation, facilitate learning material, and provide feedback and prompts for thinking. However, the student's role is to take responsibility for their learning and creating meaningful knowledge and concepts. To achieve those roles effectively, the learning environment should motivate the students to learn, and support them to focus their efforts and attention appropriately, monitor and evaluate their progress, and seek help as needed.

Research shows that self-regulatory processes are teachable and can lead to increases in students' motivation and achievement (Raaijmakers et al., 2018). However, the most important task for instructional designers and educators is to develop effective learning environments that encourage students to become active, autonomous, and self-regulated learners.

Figure 1 below illustrates the proposed new learning strategy in the nursing clinical lab by creating an interactive MAR environment. It describes the relationship between the three phases of PBL and the three phases of SRL, based on the proposed model of English & Kitsantas (2013).

During phase 1 (Problem Launch) a problem defined with clear learning goals and structured activities leads to support for independent learning and achieving the learning objectives. It supports the SRL skills of goal setting and strategic planning. Moreover, enjoyment is a key factor of AR design technology which might support self-motivation skills through SRL. In the nursing MAR application which the authors have developed, for example, the patient's scenario with heart disease is the problem, and students should learn heart anatomy, the blood flow through the human's heart, and the reasons behind heart failure, in order to solve the patient's scenario. Solving the patient's scenario means achieving the learning objectives.

During phase 2 (Guided Inquiry / Solution Creation) the MAR system supports the SRL skills of self-control and self-observation by providing students with all the content related to heart diseases. Also, it allows them to interact with the manikin independently. in order to solve the scenario the MAR has a video which shows a real patient's symptoms, audio, and a 3D heart model. It allows them to think critically as an active learner and discover the solution.

During phase 3 (Problem Conclusion) the system can support the SRL skills of reflection through self-assessment features. It allows the students to correct their thinking after solving the patient's scenario and receiving feedback on their answers.

The teacher's role is facilitating and supporting students' development of their SRL skills, especially those who do not know how to do so. The direction by the teacher direction will be faded out once the students' self-regulated skills have improved. In the end, students can use the MAR system with or without teacher assistance in acquiring clinical skills.

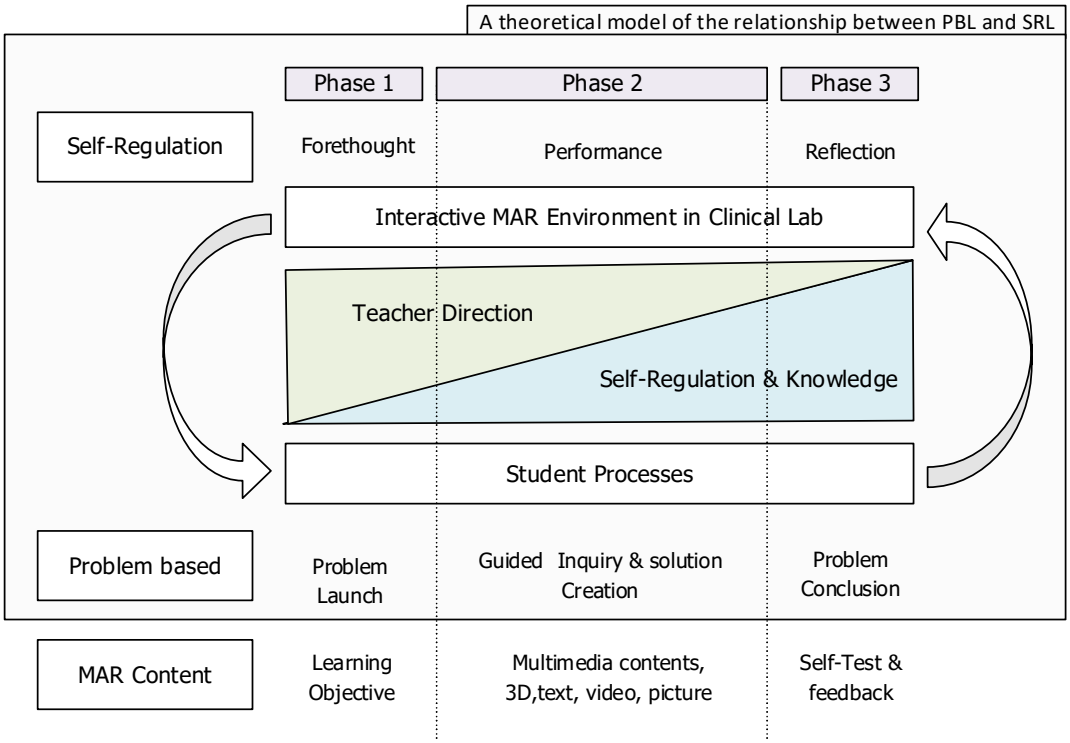

Figure 1: Links between Zimmerman's cyclical phase model and PBL

Conclusion:

This work modifies the theoretical model of English & Kitsantas (2013) by replacing the teacher's role in a face-to-face classroom with an interactive MAR environment. Also, it describes how the MAR features fit within the cycle of SLR. Heart anatomy and heart diseases form an example case used when developing the MAR. Using the MAR allows students the freedom to discover the solution independently and activate their learning.

A brief biography of each author

Mike Joy received a MA degree in mathematics from Cambridge University, a MA degree in post-compulsory education from the University of Warwick, and a PhD degree in computer science from the University of East Anglia. He is currently Professor at the University of Warwick. His research interests focus on educational technology and computer science education.

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