The Pedagogies Having Potential to Bridge School-to-Work Transition of Undergraduates

* Sasanun Bunyawanich
Faculty of Education, Early Childhood Education Program
Suan Dusit University

Abstract

Many bachelor's graduates have lack job readiness. These graduates have struggled with transition from university to workplace. Pedagogies have exerted great influence on building desirable working skills and attributes of undergraduates that help ease their transition. This article aims to shed light on theory and pedagogies having potential to increase job readiness and bridge school-to-work transition among the undergraduate. Constructivism and its pedagogies consisting of work-based learning, work-integrated learning, problem-based learning, and project-based learning have been proven of potential to do so.

Keywords: constructivism, constructivist pedagogy, school-to-work transition, undergraduate

* Sasanun Bunyawanich (Corresponding Author)

Email: pinky_delphin@hotmail.com

Introduction

Higher education plays an important role in sustaining Thailand's development through producing qualified graduates based on modern knowledge (Pimpa, 2011). In the present world, a great series of technologies has affected lives of people in wide range of aspects (Lamprini & Bröchler, 2018). For instance, in relation to cognitive science, Neuralink, a new medical research company led by Elon Musk, has been exploring how to merge computers with brains to fight aged brain conditions that affect human cognitive abilities (Pisarchik et al., 2019). In the construction work, Dubai announces that 25% percent of city's state new buildings will be constructed relying on 3D printers by 2025; the 3D printing approach is aimed to reduce labor cost by 70% and other costs by 90% across different sectors (World Economic Forum, 2018). Noticeably, the pace of automation is raised with the arrival of driverless cars, pilotless drones, and automated retail systems such as ATMs, restaurant kiosks, and self-service checkouts (Peters, 2017). The changes in technologies even in international level absolutely affect employment of graduates in terms of their attributes and skills for employability in the increasingly globalized world.

In general, to survive in a modern world, employers seek employees who are willing to continue learning to be able to respond with rapid changes that are important for driving an organization forward. Graduates need to be able to work as a team with their roles switching between a team member and a team leader as assigned in different projects concurrently. They need to communicate effectively not only in speaking, but also in writing with good interpersonal skills so as not to upset colleagues. Graduates are expected to be motivated to seek new opportunities to support organizational development and be creative in solving problems caused by new initiatives with acceptable risks. They also need to be comfortable in using new digital platform or programs to produce work and communicate with colleagues productively (Finch et al., 2013; Hill et al., 2016; Lowden et al., 2011; Prikshat et al., 2019; Yorke & Harvey, 2005).

However, higher education fails to produce graduates who have job readiness. Distinctive differences between universities and workplaces bring 'reality shock' to graduate students (Newton & McKenna, 2007). For example, new graduates find that it is difficult to get to know their colleagues because employees are regularly secluded and focus on completing their own tasks. They also need to be aware of seniority of coworkers when communicating in workplaces. This culture of communication differs from that in university where students interact with their classmates who are in the same age range (Wendlandt & Rochlen, 2008). In addition, universities emphasize theoretical and technical knowledge in each profession while workplaces search for effective practice in delivering their services or products (Le Maistre & Pare´, 2004). Thus, bridging school to workplace transition is essential for enhancing professional career and the development of professional competence of new graduates (Tynjälä and Newton, 2014). Smooth transition helps reduce stress and insecurity among new graduates leading to professional retention (Dhakal et al., 2018).

Constructivism and constructivist pedagogies

Constructivism is a theory of active learning in which active learning involves engaging in appropriate cognitive processing during learning (Mayer, 2009). Instructional methods or pedagogies underpinned by constructivist framework include work-based learning (WBL), work-integrated learning (WIL), problem-based learning, and project-based learning (Bailey et al., 2004; Kintsch, 2009; McRae & Johnston, 2016; Serafín et al., 2015). Overall, characteristics of learning process formed on constructivist principles include (Richardson, 2003):

• attention to the individual and respect for students' background and developing understandings of and beliefs about elements of the domain (student-centered);

• facilitation of group dialogues that investigates an element of domain aiming for knowledge creation and sharing of a topic;

• introduction of formal domain knowledge into the conversation through direct instruction, reference to text, exploration of a Web site, or other approaches;

• provision of opportunities for students to determine, challenge, modify their beliefs and understandings through engagement in tasks that are structured for this purpose; and

• development of students' meta-awareness of their own understandings and learning processes.

The main constructivist pedagogies and their details are described as the following.

1.1 Work-based learning

Work-based learning (WBL) is a subset of experience-based learning. WBL refers to a dynamic and unfolding process connecting learning to the role of work which focuses on enhancing university-level critical thinking upon work (paid or unpaid), so as to facilitate the acquisition and application of transferrable skills to achieve outcomes in the university and workplace (Little & Brennan, 1996; Garnett, 2016; Raelin, 2011; Sweet, 2013). WBL emphasizes learning in real work environments through participation in authentic work activities and interactions (Atkinson, 2016). WBL consists of three integral elements i.e. (1) learning is acquired in the midst of action and dedicated to the task at hand; (2) knowledge creation and utilization is a collective activity where learning becomes everyone's job; and (3) learners demonstrate a learning-to-learn aptitude, which frees them to question underlying assumptions of practice (Raelin, 2008; Williams, 2010).

WBL differs from conventional pedagogy in a few distinctive ways. Firstly, it is centered around reflection of reviewing and learning from experience. Secondly, WBL views learning as arising from action and problem-solving within a working environment. Knowledge is created from shared and collective activity through discussions of problems and solutions. Lastly, WBL requires not only acquisition of new knowledge but metacognition which learners question knowledge and have an awareness in comparing the new and possessed knowledge (Gray, 2001; Raelin, 1997; Raelin, 2008).

1.2 Work-integrated learning

Work-integrated learning (WIL) is an educational strategy for students in higher education that integrates theory with the practice of work by combining learning with some time spent in a workplace relevant to their program of study and career aims (Coll et al., 2011; Patrick et al, 2008; Smith et al., 2014). WIL has two main characteristics. First, it involves tripartite partnership between the employer, the teacher, and the student (Martin et al., 2011). Second, it embraces reflection on learning from experience (Rampersad, 2015). WIL is different from WBL. Learning in WBL mostly occurs in a workplace through apprenticeships or traineeships or under a contract that a university forms with a company (Cooper et al., 2010). In WIL, most learning takes place in a classroom and students spend only some time for apprenticeships or traineeships (Atkinson, 2016). WIL is an umbrella for other educational terms. These terms include experiential learning programs, externships, field-based learning, field placements, internships, practice-orientated education, professional practice, sandwich courses, work-based education and cooperative education (Bates, 2005; Ferns et al., 2014).

1.3 Problem-based learning

Problem-based learning means instruction that is designed to give students with a guided experience in solving a problem in a real-world context. Learning in problem-based instruction departs from students' initial questions about a problem situation (Gallagher et al., 1992). In problem-based learning students use a problem case or scenario to define their own learning objectives (Wood, 2003). The problem in problem-based learning is not a kind of problem with general meaning that people need to get rid of as soon as possible. On the contrary, the problem in problem-based learning is considered as an incentive for students, a challenge to begin their learning process (Graff & Kolmos, 2007). Problem-based learning relies on active learning of students in a small group (Farmer, 2004). Problem-based learning is first developed in medical education and then has been adopted into other fields of higher education (Hung et al., 2008; Hmelo-Silver 2004).

General characteristics of problem-based learning include the following.

• It is problem focused. Learners begin learning by addressing simulations of an authentic, ill-structured problem. The content and skills to be learned are organized around problems. Thus, a reciprocal relationship exists between knowledge and the problem.

• It is student centered.

• It is self-directed. Students individually and collaboratively assume responsibility for deciding learning issues and processes through self-assessment and peer assessment. Students access their own learning materials.

• It is self-reflective. Learners monitor their understanding and learn to adjust their learning strategies.

• Tutors are facilitators (Hung et al., 2008).

1.4 Project-based learning

Project-based learning is an instructional method that organizes learning to investigate real-world problems around projects (Zancul et al., 2017). Learning in this instruction method is context-specific that allows the learner to actively engage in the learning process. They achieve their goals through social interactions and sharing of knowledge and understanding (Kokotsaki et al., 2016). There are two significant components of projects. Firstly, the projects are grounded on challenging questions or problems that can organize or drive activities. Secondly, these activities generate a series of artifacts, or products that forms a final product which addresses the driving question. The questions should not be narrowed and limited that the outcomes are predetermined, leaving the learner with little room to develop their own approaches to answering the question. The learner's freedom to generate artifacts is critical for construction of their knowledge. Artifacts are representations of the learner's problem solution that reflect emergent states of knowledge. Artifacts are concrete and explicit that can be shared and critiqued such as a model, report, videotape or computer program (Aksela & Haatainen, 2019; Blumenfeld et al., 1991).

Project-based learning and problem-based learning are quite similar. However, they are distinctive from one another. In comparing project-based learning (PtBL) and problem-based learning (PmBL), the learner in PtBL control the learning process (teacher gives advice at a distance) and in PmBL the learner initiates the learning process (tutor is available throughout the learning process). Both methods operate with small group of learners and begin with a problem. But, in PmBL, the learner's activity is directed to 'studying' while in PtBL, the learner's activity is directed to constructing the product (Bédard et al., 2012).

Summary

Bachelor's graduates have lack of job readiness and desirable attributes and skills demanded by employers. These contribute to a problem in university to workplace transition. Constructivist pedagogies under constructivism theory have exerted positive influences in creating job readiness and narrowing university to workplace transition basically by integrating real-world context or experience with classroom learning. The main constructivist pedagogies that have been mainly adopted to ease the problem consist of work-based learning, work-integrated learning, problem-based learning, and project-based learning.

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