Chapter 3
Bridging Creativity and PBL

ABSTRACT

This chapter explores a systematic view to discuss how can we understand the concept of creativity and how we see creativity in learning contexts. Then elements of PBL in supporting creativity will be explored: group learning, problem analysis, interdisciplinary learning, project management, and facilitation. All these elements are calling for a 'student-centered learning' model and a 'co-creation' paradigm. This chapter will also discuss how we use empirical methods to study creativity and use tools of assessing creativity and group creativity in a PBL environment.

INTRODUCTION: A SYSTEMATIC VIEW TO CREATIVITY

Research on creativity was started from 1950s. It is well known that Guilford's address to American Psychological Association has been viewed as a starting point of inspiring the new research area of creativity. During the early stages, creativity studies were mainly carried out from psychological perspectives and focused different determinants of individual of genius and giftedness (Jeffrey & Craft, 2001). As Guilford argued, creativity is a continuous trait among all of us, and those individuals who have been recognized as creative talents because they have more creative traits of what all of us have (Guilford, 1950). Based on Guilford's points in 1950s, research focus on personalities, traits, motivations, cognition, and behaviors of creative individuals have been explored, which has built up founding contributions of creativity research in the decades since (Zhou, 2012).

During 1980s and 1990s, a framework of socio-psychological studies was developed in creativity studies. This recognized that individual creativity is not only influenced by individual traits but also social structures and social environments. (Jeffrey & Craft, 2001). As Rhyammar and Brolin (1999) figured out, we may summarize the following major lines of creativity research since 1950s. As mentioned, from 1950s, the research focused on individual personalities, cognitive process, and methods of stimulating creative thinking. Such focus was supported by some debates from 1970s, as researchers begun to consider creativity should be not only assessed by product outcomes but also connected with imaginativeness. Then a new line was explored that is based on studies on social psychology and system theories, which regarded social environments as conditions of creativity development. Furthermore, the different focuses within these four lines of creativity studies (i.e., individual traits such as personality, cognitive process, methods or techniques of creativity, and social approaches), have shaped the four popular specific perspectives of studies: the Person who creates, the Process of being creative, the Press where involves environmental factors, and the Product which is creative outcome. Therefore, since 1990s, creativity studies have been more and more comprehensive by integrating diverse perspectives, varies focuses and multiple research methods. Additionally, it has been different from studies in early stages that began to focus more on creativity among ordinary people than individual traits of creative talents (Jeffrey & Craft, 2001; Zhou, 2012).

Therefore, we can see the development of scientific research on creativity has been explored a particular trajectory: starting from an early focus on isolated individuals and their internal traits, personalities, and capabilities, to a later focus on the interaction between individuals and their social environments. In other words, creativity researchers have shifted their focuses on nature of creativity from 'what is creativity' to more about 'where and how creativity happens' (Zhou, 2016). This further facilitate us to rethink the following understanding on creativity in depth (Zhou, 2012):

- Creativity in mind: this means we understand creativity from approaches of 'person (personality)', cognition, and psychology; we highlight any creative idea is generated from individual cognitive process in mind. This also means basic cognitive process (e.g. attention, perception, memory, information processing) and individual differences (e.g. intelligence, language, personality style) have close connections with creativity.

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