

Nga Giap Binh

Creativity and Innovation in Education

The Effects of Problem-Based Learning on the
Creative Thinking Abilities of University Students
in a General Psychology Course



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Münchner Beiträge zur Bildungsforschung

herausgegeben von

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Abstract

In the present study a newly developed instrument for university course evaluation in term of technology, innovative teaching, creative learning, and creative potential (TIC-c) is tested on a sample of participants of the courses of general psychology at the Hanoi National University of Education ($N = 440$). This TIC-c addressed both issues of creativity and innovation in education consisted of 4 dimensions: technology, innovative teaching, creative learning, and creative potential. Aside from its prospective practical purposes, the TIC-c showed good psychometric properties, with regard to the internal consistency of subscales and overall factorial validity. Of the 440 participants, 60 were assessed by pretest and posttest of the Torrance Tests of Creative Thinking-Figural (TTCT-Figural). In order to investigate the relationship between adherence to the TIC-c and creativity, 60 Vietnamese students' scores on a measure of TIC-c were compared with their scores on a measure of creativity (TTCT-Figural). This study found that some dimensions of the TIC-c, mainly technology, innovative teaching, creative learning, present benefits to creativity in general. However, when creativity is broken into the two types of Innovative and Adaptive, the TIC-c is found to be more positively related to the Adaptive type than the Innovative type. This Adaptive type consists of Abstractness of Titles and Elaboration. Finally, the relationships between some items and the subscales of the TTCT-Figural are discussed.

INDEX WORDS: Technology, Innovative teaching, Creative learning, Creative potential, Education, Problem-based learning, Adaptive, Innovative, Torrance Tests of Creative Thinking (TTCT-Figural).

Chapter 1

Introduction

In this era of unprecedented breakthroughs in technology and constant change in many aspects of life, educators are challenged more than ever before to develop graduates who will be adaptable in fast-changing environments. This calls for equipping students with better creative thinking abilities and learning abilities. Concomitant with the quest for the development of skills pertaining to creative ability is the call for a paradigm shift in education [176]. New educational paradigms such as life-long learning, problem-based learning, and creative thinking will dictate the development of the real estate curricula. Information technology tools will change the traditional learning environment. To meet the challenges of these changes, both academic institutions as well as professional bodies need to re-examine the type of real estate graduate that will fit the future work place and the education that will give the desired outcome [157]. Thus, universities or colleges of education should also modify their curricula to match the requirements of society's needs. Curriculum should be reformed to create classrooms in which students are challenged to think creatively about subjects by discovering, understanding, analyzing and applying knowledge in new situations [7].

Creativity is increasingly valued as an essential capability in this age of information. As such, the role of education in fostering creative competencies has received greater emphasis. At the same time, traditional methods of instruction have been criticized for their inadequacies in preparing students for the present climate of change and innovation. The need for flexible

thinking, an issue that has pervaded discussions of classroom reform, has sparked interest in the potential of the problem-based learning instructional method for meeting today's educational needs [177].

In Hanoi National University of Education, Vietnam, efforts are being made to foster creative thinking abilities and problem solving through curricular and co-curricular activities. Teachers are encouraged to use innovative methodologies to promote creative thinking abilities, and students are encouraged to be innovative and come up with creative products. Students can be encouraged to participate in this process by enabling them to become aware of the ways in which they think, learn and problem-solve. This way of instruction will also attempt to involve students in the teaching-learning process through evaluations of what is taking place during learning and can provide a window into the student's creative thinking processes.

In light of these developments, it's urgent to carry out a comprehensive revolution in education immediately: reforming thoroughly and profoundly in terms of technology, assessment, culture; curriculum; individual skills, pedagogy, tools, transforming traditional courses into problem-based learning courses, moving the focus of education from equipping knowledge to fostering creative learning, and supporting innovative teaching [51].

1.1 Purposes of the study

The purpose of this study is to determine the effects of Problem-based learning on the creative thinking abilities of university students. In order to do so, we must first transform traditional courses into problem-based learning in order to enable innovative teaching and creative learning in Hanoi National University of Education, Vietnam.

1.2 Research questions

The research questions that are addressed in this study are:

1. *What factors are likely to enable (or inhibit) creative learning and innovative teaching?*
2. *What role does Information Communication Technology play in creative learning and innovative teaching?*
3. *Are there effects of Problem-based learning on the creative thinking abilities of the students through the Unit of Psychology as Cognitive Science in a General Psychology course?*

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