Designing a Model for the Implementation of Work and Technology Curriculum Based on Design Thinking in the First Year of High School

Zahra Abolhasani[1], Marzieh Dehghani [*2], Mohamad Javadi Pour[3], Keyvan Salehi[4], Nasrin MohamadHasani[5]

1. *Ph.D of Department of Educational Methods and Planning, College of Psychology and Educational Sciences, University of Tehran, Tehran, Iran.*
2. *Associate Professor, Department of Educational Methods and Planning, College of Psychology and Educational Sciences, University of Tehran, Tehran, Iran. (Corresponding Author)*
3. *Associate Professor, Department of Educational Methods and Planning, College of Psychology and Educational Sciences, University of Tehran, Tehran, Iran.*
4. *Assistant Professor, Department of Educational Methods and Planning, College of Psychology and Educational Sciences, University of Tehran, Tehran, Iran.*
5. *Assistant Professor, Department of Educational, College of Psychology and Educational Sciences, Kharazmi University, Tehran, Iran.*

Abstract

Introductoin: Design thinking is an approach based on problem solving and appropriate to the skills of the 21st century, which seems to be consistent with the work and technology curriculum. Therefore, the current research has been done to design a model for implementing work and technology curriculum based on design thinking.

Method: This research is conducted through studying documents using the method of regular review. In the present study, Latin electronic articles include all electronic articles published in Eric, Science Direct, Taylor & Francis, Springer, Google Scholar databases and educational sites related to work, technology, and design thinking educational resources; Internal databases such az Noormgaz; MagIran and SID and education site without time limit. After searching in databases, 1345 articles were obtained, removing similar articles, 216 articles were selected for detailed review and were evaluated with CASP evaluation criteria. finally, 90 articles were analyzed and thoroughly reviewed. 42 articles, books, and sites were used for design thinking; 5 books, meta-documents, data, and resources from 6 countries and 37 articles and resources were used for work and technology.

Results: Data analysis showed that the most important dimensions of the model are: the learning approach, learner, education presentation, content, evaluation, class, design tools, and metacognitive methods and processes. Also, to verify the implementation pattern, an expert review was used using the focus group method. Validation of the model was done by forming a virtual online group with the presence of 8 experts.

Discussion and Conclusion: Finally, the designed model includes two main variables: 1- Execution prerequisite and 2- Execution; In the prerequisite stage, the basic works and infrastructures needed for successful implementation were considered. First, the learner and the content were examined to determine the need and the existing situation. Then the infrastructures and learning approach and design thinking model were determined. According to all the mentioned issues, the educational strategy is determined and the model enters the implementation stage. The four main elements of the implementation of the learner and the teacher, the problem and the evaluation, and the processes between them according to the components were identified in this stage.

Keywords: Design thinking, implementation, work and technology, pattern.

*Email: Dehghani_m33@ut.ac.ir