

A MODEL OF STEM EDUCATION LEARNING MANAGEMENT COMPETENCIES VIA OPEN EDUCATIONAL RESOURCES FOR TEACHER UNDER OFFICE OF THE BASIC EDUCATION COMMISSION

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ABSTRACT

The objectives of the research study were to 1) design a model of STEM education learning management competencies via open educational resources for teacher under office of the basic education commission and 2) assess the suitability of a model of STEM education learning management competencies via open educational resources for teacher under office of the basic education commission. The samples included learning management, STEM learning management and evaluation experts of 8 people. The research tools composed of the model's suitability assessment form using 5-point Likert scale. The research results were to 1) a model of STEM education learning management competencies via open educational resources for teacher under office of the basic education commission that can be divided into three main parts (1) open educational resources which were the resources for developing the teacher STEM education competencies, (2) the development of teacher learning management competencies in order to enable teachers to collaboratively design and create a STEM learning management plan, and (3) the results of the development of teachers learning management competencies and the teachers' opinions on the model of learning management competencies would be the feedback or suggestions for developing the teacher learning management competencies. 2) assessment the suitability of a model revealed that (1) the open educational resources in the competency section learning management, engineering design, measurement and evaluation were appropriate at the highest level, followed by content knowledge of STEM education. Knowledge of learning management according to the STEM approach 21st century skills and collaborative learning activities which is appropriate at a high level (2) the development of competence in learning management in the part of the study of knowledge in the knowledge repository together to design a learning management plan jointly assess the learning management plan. The first assessment of teachers' learning management competency was the most appropriate, followed by the creation of a learning management plan. Teachers organize learning according to plans and teaching notes, discussions, expanding knowledge with fellow teachers. And the second assessment of teachers' learning management competency, which was appropriate at a high level; (3) in terms of the teachers' opinions on the model for improving the learning management competency of teachers with the STEM approach through open educational resources was the most appropriate, followed by the learning management competency effect. And (4) the overall picture of the implementation of the STEM education competency development model through open education resources for teachers under the Basic Education Commission was at a high level. The most the experts also provided additional comments and suggestions: an overview of interesting work. It is beneficial to the development of teaching and learning. However, it should be considered that the implementation through the open system is how to achieve real results. Teachers are truly involved in the exchange of learning.

KEYWORDS: *Learning Design and development, Learning Management Competencies, Open Educational Resources, STEM Education*

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