

論文 / 著書情報
Article / Book Information

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Title(English)	Study on the Influence of Interactive Learning Materials on Self-Regulated Learning for the Professional Development of Primary School Teachers in Mongolia
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種別(和文)	論文要旨
Type(English)	Summary

論文要旨

THESIS SUMMARY

専攻：	国際開発工学	専攻
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申請学位 (専攻分野)：	博士	(工学)
Academic Degree Requested	Doctor of	
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要旨 (英文 800 語程度)

Thesis Summary (approx.800 English Words)

1. Background

This chapter reviews the global and Mongolian national trend in education, specifically regarding policies and project implementations on teachers' development to promote quality education. This study aims to 1) identify important self-regulated learning processes that affect teachers' learning outcome, and 2) find out the influence of interactive materials on teachers' learning in self-development based on self-regulated learning (SRL) theory.

2. Literature review

2.1 Self-regulated learning theory

Self-regulated learning theory explains the process of planning and cyclically adapting self-generated thoughts, feelings, and actions to influence one's learning outcome. Self-regulation processes comprise motivation and learning strategies. While motivation refers to various motivational beliefs such as goal orientation (purpose of doing a task) and self-efficacy, learning strategies contain cognitive strategies, metacognitive strategies, and resource management strategies. Cognitive strategies refer to mental operations, procedures and processes that the learner engage in to acquire, integrate, organize, and retain new information. Metacognitive strategies refer to specific processes by which the learner evaluates or monitor their own thinking and knowledge structures, such as setting goals and self-monitoring. Finally, resource management strategies refer to learners' behaviors regarding changing tasks and learning conditions. Therefore, self-regulated learning is concerned with how learners activate and sustain their motivation and learning strategies to attain the learning objectives, hence influencing one's learning outcome. Among different types of learning outcome, this study looks at learning satisfaction as a learning outcome, supported by Zimmerman.

2.2 Self-regulated learning and interactive materials

In this study, self-regulated learning is used to understand the effectiveness of interactive materials in facilitating self-learning since the interactive materials are considered to promote learning motivation and learning strategies. For example, the learning tasks that are of appropriate difficulty can help learners establish self-efficacy for learning, by letting learners experience success with their own effort. Interactive materials also have the feature to provide feedback to the learners, which elevates learner's belief that their learning efforts can lead to positive learning outcomes.

3. Development of interactive materials

The interactive materials were developed using the authoring tool "Xerte" in cooperation with Mongolian professionals in three teacher training subjects: Man and Environment, Man and Society and Art and Technology. Teacher training guidelines and teacher training videos were utilized to develop 3 interactive materials. There are 107 quizzes in total combining different types of questions including true and false questions, multiple choice questions, fill in the blank, and ordering sequences.

4. Methodology

4.1 Study design and data collection

This study employs the two-group experimental design where experimental and control group were formulated in the Gobi Region of Mongolia, involving 285 primary school teachers. Experimental group teachers utilized interactive materials, teacher training video and guideline for self-development while the control group teachers did not utilize interactive materials. Data collection took place 6 months after teachers utilized interactive materials, using the localized Motivated Strategies for Learning Outcome questionnaire (Pintrich et al., 1991) and the learning outcome questionnaire (Pintz et al., 2013, Zhao et al., 2009).

4.2 Preparatory data analysis

Exploratory factor analysis and reliability analysis were applied on the data collected from two groups of teachers. Six latent variables were created. Five variables correspond with SRL processes: 1) internal motivation, 2) motivation for better assessment, 3) planning and organizing skills, 4) critical and positive thinking skills, and 5) effort regulation. One variable, learning satisfaction and intention to apply learning contents, correspond with learning outcome.

4.3 Research questions

The study has formulated three research questions.

Research question 1: What are the factors among internal motivation, motivation for better assessment, critical and positive thinking skills, planning and organizing skills, and effort regulation that affect learning satisfaction and intention to apply learning contents?

Research question 2: Are there any differences in internal motivation, motivation for better assessment, critical and positive thinking skills, planning and organizing skills, effort regulation, and learning satisfaction and intention to apply learning contents between those who used interactive teacher training materials and those who do not?

Research question 3: Does the use of interactive materials affect the relationship between learning satisfaction and intention to apply learning contents with internal motivation, motivation for better assessment, critical and positive thinking skills, planning and organizing skills, as well as effort regulation?

5. Data analysis

Multiple linear regression analysis is used to answer research question 1. Among the five factors, three factors are found to affect learning satisfaction, namely, internal motivation, planning and organizing skills, and critical and positive thinking skills. These three factors explain 53% of the variance in teachers' learning satisfaction and intention to apply learning contents.

T-test is utilized to answer research question 2. The analysis revealed: 1) teachers conducting self-development with interactive learning materials were highly motivated to achieve better teacher assessment, 2) teachers with interactive learning materials had higher learning satisfaction.

Moderation analysis is used to answer research question 3 through testing 5 moderation models. The result reveals 2 significant models which show that: 1) the internal motivation has stronger influence on learning satisfaction for teachers using interactive materials, and 2) the motivation for better assessment has stronger influence on learning satisfaction for teachers using interactive materials.

6. Discussion and conclusion

The data analysis results agree with the discussion in the current literature confirming the importance of learning motivation and the use of learning strategies in promoting learning satisfaction. In terms of interactive materials, they are confirmed to be beneficial in promoting learning motivation and learning outcome. Further, the result illustrates the moderating effect of interactive materials on the relationship between learning motivation and learning outcome. Interviews and focus group discussions with local teachers and educational experts provided details explaining how self-regulation processes affect learning satisfaction and the role of interactive materials in teachers' self-development. The outcome of this study confirms the positive effects of interactive materials on learning. This study provides insights on self-regulated learning in ICT enabled distance learning context and the findings are of value in designing effective interactive materials for educational practitioners.

備考：論文要旨は、和文 2000 字と英文 300 語を 1 部ずつ提出するか、もしくは英文 800 語を 1 部提出してください。

Note: Thesis Summary should be submitted in either a copy of 2000 Japanese Characters and 300 Words (English) or 1 copy of 800 Words (English).

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