

Title	モバイルテクノロジーに支援された英語読解のためのリフレクション学習モデル
Author(s)	Wang, Fei
Citation	
Issue Date	2024-09
Type	Thesis or Dissertation
Text version	none
URL	http://hdl.handle.net/10119/19384
Rights	
Description	Supervisor: 由井 蘭 隆也, 先端科学技術研究科, 博士

氏名	WANG FEI		
学位の種類	博士（知識科学）		
学位記番号	博知第 366 号		
学位授与年月日	令和 6 年 9 月 24 日		
論文題目	A Reflective Learning Model for English Reading Supported by Mobile Technology		
論文審査委員	由井 蘭 隆也	北陸先端科学技術大学院大学	教授
	藤波 努	同	教授
	ヒュン ナム ヤン	同	教授
	金井 秀明	同	准教授
	羽山 徹彩	長岡技術科学大学	教授

論文の内容の要旨

Reflection is an essential part of the learning process. People learn not only through the active process of gaining experiences but also through the reflective process of regaining those experiences. Reflective practices in learning are said to promote the development of cognitive skills, enrich content knowledge, and facilitate the management and evaluation of the learning process. As higher education prioritizes active and life-long learning as well as critical/innovative skill development, reflective learning has gained growing attention from academic and educational circles, including the domain of language education. However, research on reflection in language education has been predominantly invested in the field of teacher education whereas implementation of reflective practices for language skill improvement has been paid less attention. In addition, there is little research on designing a comprehensive reflective model to guide the whole process of language study, especially reading study, which is a fundamental part of language acquisition. Therefore, It is important to understand how reflection can affect the whole reading-learning process and how to implement it effectively throughout the whole learning process with mobile technology. The development of a reflective learning model for English reading is crucial for both learners and instructors.

The main research objective (**MRO**) of this dissertation is to design a reflective learning model for English reading supported by mobile technology to improve students' reading proficiency, self-regulated learning, and critical thinking skills. Accordingly, Three sub-objectives are set. The first sub-objective (**SRO1**) is to explore students' learning habits and perception of mobile learning in English reading learning.

The second sub-objective (**SRO2**) is to investigate students' perceptions of and preferences for reflective practices in mobile English reading. The third sub-objective (**SRO3**) is to design a reflective learning model for English reading supported by mobile technology and examine the effectiveness of the proposed learning model in improving students' reading proficiency, self-regulated learning, and critical thinking skills. Three studies were designed and implemented to achieve the three sub-objectives.

Study 1(Chapter 3) was conducted to achieve SRO1. We conducted action research to examine students' mobile device usage for studying and their willingness to integrate self-paced mobile extensive reading into their regular learning routine. After implementing extensive mobile reading as an off-curricular activity for one semester, we investigated students' perception with questionnaires and interview questions. Its finding revealed that despite the deep penetration of smartphone use in daily life, those students didn't form the habit of mobile reading. However, most students approved of this reading-learning approach and reported improvement in their reading and listening abilities. Smartphone-assisted reading was accepted for its abundance of resources and convenience. Language learning applications and video resources were greatly favored among students. But at the same time, many problems concerning this approach emerged in the study such as distraction, cost, motivation, evaluation, etc. In addition, we attempted to apply reflection to monitor students' learning process in this study. The results showed that students valued process management techniques such as reflective journals and reflective questions but they perceived them as uninteresting, overly simplistic, or lacking in diversity.

Study 2 (Chapter 4) was conducted to achieve SRO2. Based on the insights gained about students' mobile learning habits and preferences, we conducted a class experiment to explore the role and diversity of reflection in mobile-assisted language learning by integrating reflective activities into a mobile-assisted reading program and then investigating students' perception of the reading program, reflective practices, and the reflection modes adopted. A mixed research method was utilized involving the use of pretest/posttest, questionnaires and semi-structured interviews. In the experiment, students are required to read passages on mobile apps and then complete reading reflections and upload them onto online learning platforms. The students completed four reflections in four different modes in order: paper journal, e-journal, audio reflection, and collaborative reflection. Its findings revealed that learners generally considered mobile reading programs beneficial for their language learning process. The reflective practices adopted could stimulate their learning interest, promote understanding, and cultivate reflective and summarizing abilities without a heavy study load and inconvenient operation. Yet students didn't consider reflection a good way of process management and supervision. The most favoured journal modes were paper journal reflection and audio reflection, while collaborative reflection and e-journal reflection remained the least two favoured reflection modes.

Study 3(Chapter 5) was conducted to achieve SRO3. Inspired by Cowan's reflective diagram, we designed a reflective learning model for English reading supported by mobile technology. The proposed learning model was subsequently tested in a classroom experiment to assess its impact on students' learning outcomes. During the implementation phase, the insights obtained from Study 1 and Study 2 regarding learning preferences for mobile learning and reflection were utilized to design reflective activities or strategies for reflection. A comprehensive mixed research method was utilized involving the use of pretests/posttests, reflective journals, reflective writings, post reflection exercises, pre-questionnaires/post-questionnaires, and semi-structured interviews. Quantitative findings from

tests and questionnaires indicated that the proposed learning model significantly influenced students' reading proficiency while showing no significant impact on their self-regulation and critical thinking skills. Nevertheless, qualitative findings from reflective journals, exercises, written assignments, and interviews demonstrated that the proposed learning model also contributed to the enhancement of students' metacognitive self-regulation, reflective thinking skills, and deep thinking abilities

The study provides many practical implications. Based on students' perception of reflection and preferences for reflection mode in the mobile reading from **Study 2**, some implications were put forward concerning the application of reflective activities in app design and course design. For app developers, some preferable reflection modes facilitated with stimulative measures may be offered to cater to more learners to conduct reflective activities. For language teachers, based on the understanding of students' age, learning experience, and possible preferences, they may create a good reflective environment with technical and instructional support, and then provide two or three popular modes for students to reflect on whatever they read. Drawing upon the analysis of issues and suggestions identified in **Study 3**, several implications regarding the implementation of the reflective learning model were proposed, encompassing aspects such as conducting careful program design like suitable activities and proper timing, providing coaching, guidance, and scaffolding, promoting motivation from various perspectives, and creating more opportunities for collaboration.

This research contributes to the study of reflection and language education. It will provide theoretical support for individuals as they define and design reflective learning frameworks. The developed learning model can guide leaders, language instructors, and learners in managing and implementing reflection in specific language classrooms. It could also be applied to enhance learning in various domains or among students at different proficiency levels.

Keywords: reflective learning, model, language education, English reading, mobile technology

論文審査の結果の要旨

学習者中心の教育を考える上で、内省（Reflection）を考慮した学習モデルは重要である。モバイル技術を用いることによって、講義前後を含めて、自身の学びを内省する学習環境へと変革できる。従来の第二言語教育（英語教育）における内省研究では、モバイル技術を用いた多様な内省技術を包括したモデルとはなっていなかった。また、読解に注目した研究は少なかった。その中、本論文は、3つの研究を段階的に進展させて、英語読解学習を対象に、モバイル技術による多様な内省手法を用いた継続的な学習モデルの効果および課題をまとめ上げており、国際的にも有用性の高い研究成果となっている。

研究1では、英語読解学習における生徒の学習習慣とモバイル学習に対する認識を探ることを目的とした。その結果、モバイル技術であるスマートフォンが日常生活に深く浸透しているにもかかわらず、モバイル多読の習慣が身につけていないことが明らかになった。しかし、ほとんどの学生がモバイル技術を用いた学習法を認め、読解力と聞き取り力の向上を報告すると共に、豊富な学習

教材と利便性があるために受け入れられる傾向がわかった。

研究2では、英語読解学習における生徒の学習習慣とモバイル学習に対する認識を探る授業実験を行った。その結果、学習者は、内省を考慮したモバイル読解プログラムが言語学習プロセスにとって有益であると考えていることがわかった。また紙と音声入力による内省モードは好まれるのに対して、共同やデータ入力による内省モードは好まれない傾向がわかった。

研究3では、モバイル技術によってサポートされる英語読解のための反省的学習モデルを Cowen の内省学習モデルを拡張したモデルを提案・設計し、その有効性を対照授業実験で調べた。その比較は講義前後の内省手段がモバイル技術を用いて、充実しているかどうかであった。その結果、内省手段を充実させた授業は、定量的な比較において、従来の内省手段をもつ授業と比べて、生徒の読解力に有意な影響を与えたが、自己調整能力と批判的思考力に対する影響は見られなかった。一方、内省手段を充実させた授業は、質的な内容分析（振り返り日記、インタビューなどのデータにもとづく）により、学生のメタ認知的自己調整能力、振り返り思考能力、深い思考能力の向上に寄与している様子がわかった。

以上、本論文は、知識の実践的な定着・獲得に重要とされる内省に関わるものであり、第二言語学習の研究分野と IT 分野のモバイル技術を統合した研究成果となっており、学術的に貢献するところが大きい。よって博士（知識科学）の学位論文として十分価値あるものと認めた。