Results supported the children and parents' reading of an augmented reality picture book can effectively enhance students' internal reading motivation and cognitive structures. Based on these findings, suggestions are proposed.

Keywords: child-parents' reading, AR books, cognitive structure, reading motivation

磨課師於翻轉教室之應用

Applying a MOOC on a flipped classroom

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摘要

因著科技進步及多媒體的應用，數位學習備受矚目，也掀起了磨課師的浪潮。磨課師的特色是將課程設計成許多約 10-15 分鐘影片的小單元，所有教材皆放在公開網站上，學員可以自行安排學習時間及地點。學習過程中有形成性評量，課程結束後有總結性評量，可讓學員自行測試學習成效。若有不了解的地方，可以反覆觀看影片，直到完全了解。網站上有討論區，是給講師與來自世界各地學員互動的園地，可彼此分享想法、疑問或心得。磨課師除了提供大眾在網路上自主學習以外，也可在實體教室中，搭配團隊導向學習，進行翻轉教室。團隊導向學習具有某些特定架構，包括課前預習、課中個人準備保證測試(Individual Readiness Assurance Test, iRAT)、團隊準備保證測試(Team Readiness Assurance Test, tRAT)，申訴、短講、團隊活動、同儕互評等。本研究以「輕鬆學力學」磨課師課程中的數學課題為例，探討南臺灣某大學某系大一學生課前先上網預習之後，在課堂中進行 iRAT 及 tRAT 的成果。t-test 統計結果顯示，tRAT 的成績顯著高於 iRAT ($p < .001$)。在課堂中，可感受到不同於傳統教師授課方式的歡愉氣氛。教師可聚焦於多數學生不會回答的問題，加強說明。磨課師於實體教室中，結合團隊導向學習之應用，有助於將以教師為主的被動學習，轉換成以學生為主的主動學習，進而提升學習成效。

關鍵詞: 磨課師、翻轉教室、團隊導向學習、準備保證測試

Abstracts

Due to the progress of scientific technologies and applications of multi-medium, e-learning has attracted lots of attentions. As a result, massive open online courses (MOOCs), a new wave of distance education, emerge and grow rapidly. MOOCs are characterized by arranging the curriculum contents into many small units with 10-15 minute videos. All the curriculum materials are placed on a public Web site, Students can freely arrange the time and place of learning by themselves. There are several formative assessments during the learning process and there is a summative assessment in the end of the course for students to test their learning outcomes. If there is something students do not understand, they can watch the videos repeatedly

until all the teaching materials have been completely understood. A forum is available on the website for lecturers and students from all over the world to communicate with each other sharing ideas, questions, or suggestions. In addition to providing the public with self-learning on the web, MOOCs can be combined with a team-based learning (TBL) strategy in a flipped classroom on campus. TBL has a specific structure including pre-reading, individual readiness assurance test (iRAT), team readiness assurance test (tRAT), appealing, mini-lecture, team activities, and peer review etc. This study aimed to evaluate the learning outcomes of a MOOC combined with TBL applied in a flipped classroom. The MOOC used was “Easy to learn mechanics” and the teaching material in the flipped classroom was Topic 1: mathematics in the MOOC. The participants were freshmen of a university in the southern Taiwan. After the students completed pre-reading before the class and iRAT and tRAT during the class, the scores of iRAT and tRAT were compared using t-test statistical analysis. The result shows that the score of tRAT is significantly higher than that of iRAT ($p < .001$). In the classroom, there were loud cheers and laughter when students were answering the tRAT questions. This mood was different from that in a conventional lecture-based class. Furthermore, the instructor could immediately find which questions students had the wrong answers according to the scores of the tRAT and could spent more time and explain more clearly on those questions to make students understand the contents well, In summary, applying a MOOC and TBL on a flipped classroom might be helpful to transform a passive teacher-centered learning into an active student-centered learning and promote the learning outcomes.

Key words: massive open online course, flipped classroom, team-based learning, readiness assurance test