

國立中興大學圖書資訊學研究所
碩士學位論文

解謎遊戲化虛擬導覽運用於圖書館利用教育之研究

The Research on the Integration of Gamified
Puzzles into Virtual Tour for Library Orientation

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摘要

近年來許多圖書館利用創新的科技來滿足讀者的需求，而圖書館利用教育奠基於圖書館服務，自然需要更多的方式來吸引讀者的目光，過去研究也指出許多的圖書館均利用遊戲推廣圖書館的資源，除此之外為了符合 Library2.0 的以使用者為中心思考的原則，許多圖書館為了打破空間、時間上的限制，並提供遠距離的讀者相同的服務，也運用了虛擬導覽的技術來服務讀者，本次研究也藉由以上兩者的特性聚焦於學習者在導入與未導入解謎遊戲化機制與 VR 頭戴式設備的圖書館利用教育導覽下的學習成效表現，並進一步探討學習動機與情境興趣在其之間的差異性。

因此本研究將受試者分為三組進行試驗，並分別接受「無遊戲化網頁式 VR 導覽」、「遊戲化網頁式 VR 導覽」和「遊戲化頭戴式 VR 導覽」，導覽內容來自國立大學圖書館與公共圖書館等多個權威單位，並經由本研究篩選及彙整後編撰而成，研究的對象為國立中興大學的在校生，有效樣本共計 95 位，運用實驗研究法，將受試者隨機分入組別中進行自由導覽，並以本研究自編的試卷進行學習成效的前後測、ARCS 學習動機、及 SIS 情境興趣的五點量表填寫，主要目的是分析不同模式導覽下的受試者在不同的變項下的差異。另外，本研究也透過半結構式的測後訪談補充量化資料不足之處，並試著說明受試者對於所填寫的量表與試卷結果的可能歸因。

本研究結果為(1)遊戲化元素不足的遊戲學習無法有效增加學習成效；(2)遊戲機制與頭戴式裝置並不會影響學習動機；(3)導入遊戲化元素的導覽會顯著的增加挑戰性；(4)導入頭戴式裝置的導覽會顯著的增加新穎性。期望上述研究結果能對未來相關研究提供基礎，深入調查本次研究未探討之因素或對上述研究結果進行深入分析，以期研究成果能提升圖書館資源的使用率及有效性。

關鍵詞：圖書館利用教育、虛擬導覽、遊戲化、實境解謎、讀者服務

Abstract

In recent years, libraries have increasingly employed innovative technologies to meet the needs of their patrons. Library orientation is centered around library services, which finding new ways to capture patrons' attention. Previous research has shown that libraries have used games to promote their resources. Additionally, to adhere to the principles of Library 2.0, which is based on user-centered thinking, libraries have also utilized virtual tours to serve patrons from remote locations, overcoming the limitations of space and time. This study hence aimed to examine the impact of puzzle game and head-mounted device use during library orientation on learners' effectiveness in using the library. The differences in learners' perceived motivation and situational interest were also investigated.

This study divided the subjects into three groups to conduct the experiment: "web-based VR," "gamified web-based VR," and "gamified HMD-based VR." The subjects of this study were from NCHU students, and a total of 95 samples were used. The content of the virtual tour was obtained from National university libraries and public libraries of authoritative organizations, and was screened and compiled by this study. An experimental research method was used to randomly assign subjects to groups for orientation. A self-developed questionnaire was used for pre- and post-tests of learning achievement, as well as five-point scales of ARCS learning motivation and SIS situational interest instruments. The purpose of these surveys was to examine the differences between subjects who received different modes of orientation under different variables. In addition to the quantitative data, the study conducted a semi-structured post-test interview to supplement the data and provide explanations for the the results of the scales and questionnaires.

The study found that (1) learning without sufficient gamification did not effectively increase learning achievement; (2) the game mechanism and head-mounted device did not have an impact on learning motivation; (3) the integration of gamification significantly increased the challenge; (4) the usage of the head-mounted device significantly increased the novelty. The findings of this study may serve as a foundation for future research to investigate unexplored factors or to conduct a more in-depth analysis based on the results of this study for effectively enhancing the usage of library resources.

Keywords: Library Orientation, Virtual Reality, Gamification, Puzzle solving, Reader service