陳冠良、簡佑宏

精進國中教師實踐大屏課程之探討

Enhancing Junior High School Teachers' Implementation of IFP Teaching

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關鍵字：大屏、紮根理論、數位教學

Keywords: Interactive flat-panel, Grounded Theory, Digital Teaching

論文摘要：

一、研究動機與目的

臺灣近年推動「班班有網路、生生用平板」的政策，配合部分縣市「班班有大屏」的執行，網路以及數位設備的升級，意味著未來教學模式的改變，然而教師們是否具備大屏、平板等設備的能力，將會影響呈現出來的教學效果。當這些科技設備開始進入校園時，學生們從出生就開始接觸觸控式的電子設備，學習速度快，然而教師們在接受大屏研習課程後，如何遷移到自己的課程中使用，這些歷程包括了許多因素。為了了解中學教師在教學現場中，使用互動大屏實施課程的情形，研究團隊開發應用互動大屏的 STEM 課程，在數所國中開設工作坊展示，並且收集教師對於大屏使用的看法。

二、研究方法

本研究採用紮根理論研究法，探究中學教師應用互動大屏於教學中的現況，以立意取樣的方式進行半結構式訪談，藉此獲得訪談者對於大屏使用教育現場的觀察。訪談對象為 8 位現職國中教師，進行訪談後撰寫成逐字稿，進一步對資料進行彙整，由紮根理論的開放性編碼、主軸編碼與選擇性編碼

進行處理。

三、研究結果

經分析訪談資料後，發現教師對於大屏使用現況看法，主要分成「教師自身信念」與「設備優勢」兩個項目。研究結果顯示，在「教師信念」項目中，可以滿足的需求包括「認同其對學生之效益」、「教育科技趨勢之認同」、「行政支持」、「外在因素推力」、「解決困境與挑戰」。而「設備功能」項目中包含「介面優勢」以及「替代產品」。

其中，在教師信念項目可以得知，多位教師認同大屏與其他數位設備所帶來的效益，促使學生獲得多樣化的學習與成長，許多教師已經熟悉大屏與平板的導入，並且應用於教學中。過去幾年受到 Covid-19 疫情影響促成一股推力，教師因有需求而學習使用，而學校行政端亦支持這些活動，透過計畫性地推動相關的措施。

在設備功能的項目中，大部分的教師是作為替代黑板與投影機的使用，而多位教師亦提及大屏的優勢，例如畫質、反應速度、聲光效果、互動功能等，應用於混成環境可以直接在螢幕上手寫註記，讓線上同學觀看。

四、研究貢獻與建議

此研究中，透過訪談 8 位具有代表性的教師，呈現大屏與相關設備在該校、該地區應用的狀況。受訪者主要表述教育科技的成功案例及過程，換言之，經過分析可得出目前使用情形的關鍵要素與歷程，從中提取經驗或發現未能達到預期的項目，提供在師資培育及教育現場之建議，精進教師在實踐大屏課程內容遷移至教學使用上的情形。

Abstract:

Taiwan has recently promoted the policy "Internet for Every Classroom, Tablets for Every Student," some cities also implemented Interactive flat-panels (IFP) for Every Classroom. The upgrade of the internet and digital devices signifies a change in future teaching models. However, the effectiveness of teaching with these technologies depends on teachers' proficiency with IFP and tablets. As these technological devices enter schools, students, who have been familiar with touch-based electronic devices since birth, learn quickly. In contrast, teachers need to understand how to utilize these tools and incorporate them into their curriculum, which entails several components. To understand the current situation of junior high school teachers using interactive screens in their classrooms, a research team developed a set of STEM courses utilizing IFPs. Workshops were conducted in several junior high schools to demonstrate the courses, and teachers' opinions on using IFP were collected.

This study adopts the grounded theory research method to explore the current state of junior high school teachers applying IFP in teaching. Using purposive sampling, semi-structured interviews were conducted to gather the interviewees' observations on the educational use of interactive screens. The interviewees consisted of eight current junior high school teachers. Following the interviews, verbatim transcripts were written, collated, and then processed using grounded theory's open coding, axial coding, and selective coding methods.

After analyzing the interview data, it was found that teachers' perspectives on the current usage of interactive screens can be categorized into two main areas: "Teachers' Beliefs" and "Device Advantages." The results indicate that under the "Teachers' Beliefs" category, the following needs can be met: "recognition of benefits for students," " recognition of educational technology trends," "administrative support," "external driving forces," and "resolving difficulties and challenges." Under the "Device Advantages" category, the items include "interface advantages" and "substitute products.

In the category of teachers' beliefs, it was found that many teachers recognize the benefits brought by IFPs and other digital devices, which facilitate diverse learning and growth for students. Many teachers have become familiar with the integration of IFPs and tablets into their teaching practices. The impact of the COVID-19 pandemic over the past few years has created a driving force, as teachers had to learn to use these technologies out of necessity. Additionally, the school administration has supported these activities by systematically promoting related measures.

In the category of device functionality, most teachers use IFPs as a replacement for blackboards and projectors. Many teachers also mentioned the advantages of IFPs, such as image quality, response speed, audiovisual effects, and interactive features. In a blended learning environment, teachers can write annotations directly on the screen, allowing online students to view them in real time.

In this study, interviews with eight representative teachers were conducted to present the application status of interactive screens and related devices in their schools and regions. The respondents primarily described successful cases and processes of educational technology. In other words, through analysis, key elements and processes of the current usage situation can be identified, experiences can be extracted, or items that did not meet expectations can be discovered. Based on these findings, recommendations are provided for teacher education and in educational settings. These suggestions aim to enhance teachers' implementation of the transition from theoretical curriculum content to practical teaching applications.