

應用 MP4 Players 的數位教材於護理學生管路照護之學習成效：前驅性研究

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摘要

目的：本研究目的在探討使用 MP4 player 的數位教材在護理學生照護「豬尾巴引流管」(pig-tail drainage) 及「經皮腎臟造瘻管」(percutaneous nephrostomy tube；PCN tube) 的認知及技能成效。

方法：採實驗性研究設計，研究對象為東部某技術學院護理系五專部之四年級學生共 48 人（實驗組 27 人、對照組 21 人）。實驗組接受「口頭、示範及書面技術教材指導與 MP4 Player 管路照護數位教材結合」，而對照組則接受「口頭、示範及書面技術教材指導」，二組在前測時接受「基本資料問卷」、「照護管路認知問卷」，二星期及三個月後再接受「照護管路認知問卷」及「豬尾巴引流管及經皮腎臟造瘻管路照護技術評核」。

結果：二組在管路認知上於介入措施前、後及三個月後施測沒有顯著的差異，但實驗組的第二星期及第三個月的得分高過控制組。介入措施後第二星期，二組在豬尾巴引流管照護技能、經皮腎臟造瘻管路照護技能上有顯著差異 ($p=.002$ ； $p=.000$)。介入措施後第三個月，二組在豬尾巴引流管照護技能在後測得分上有顯著差異 ($p=.044$)；在經皮腎臟造瘻管路照護技能在後測得分上沒有差異 ($p=.550$)。

結論及建議：二組使用不同的教學方法，在豬尾巴管路照護及經皮腎臟造瘻管路照護的認知雖無顯著差異但得分有提升，實驗組的認知平均分數的提升高於對照組；在技能層面上，在二星期的後測，實驗組在二種技術技能上的表現優於對照組，且達顯著差異。在三個月後，實驗組在豬尾巴管路照護技能上的表現優於對照組，且達顯著差異；在經皮腎臟造瘻管路照護技能上的表現二組雖沒有差異，但此介入措施整體而言強化了技能的進步。此研究提供了數位教材對於學習的助益的資訊；另也證明了經濟、簡便的行動化載具也可做為貼近學習的工具。建議未來的研究可記錄學生技能練習時間及使用 MP4 Player 的頻率，做為分析成效差異的佐證以增加研究的完整性。

關鍵字：數位教材、MP4 Player、行動載具、輔助教學、學習成效

The Learning Effectiveness of MP4 Players in Tubing Care for Nursing Students : A Preliminary Study

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Abstract

Goal: The objective of this research is to examine the effectiveness of MP4 players as a digital teaching material for improving nursing students' knowledge and skills in providing care for "pig-tail drainage" and the "percutaneous nephrostomy (PCN) tube" .

Methods: This research adopts a experimental research design. The research participants comprise 48 fourth year students (27 in the experimental group, 21 in the control group) from the 5-year program for a nursing department in a technical college in the eastern region of Taiwan. The experimental group receives "combined oral, demonstrative, and written technical material guidance and MP4 player-based digital materials on tube care," whereas the control group receive only "oral, demonstrative, and written technical material guidance." The 2 groups are required to complete the "Basic Information Survey" and the "Tube Care Knowledge Survey" during the pre-test, and the "Tube Care Knowledge Survey" and "Pig-tail Drainage and PCN Tube Care Skill Assessment" 2 weeks and 3 months later.

Results: The 2 groups' knowledge on tube care before and after the intervention, as well as 3 months after commencing the experiment, shows no significant difference; however, the experimental group scored higher than the control group for the second week and third month assessments. For the second week after the intervention, the two groups' skills for pig-tail drainage care and PCN tube care show a significant difference ($p = .002$; $p = .000$). On the third month after the intervention, the scores for the 2 groups' pig-tail drainage care skills in the post-test show a significant difference ($p = .044$), whereas the scores for PCN tube care skills in the post-test are show a non-significant difference ($p = .550$).

Conclusion and Recommendations: With the 2 teaching approaches, although there was no significant difference between the 2 groups' understanding of pig-tail drainage care and PCN tube care, the scores improved. The average score of the experimental group improved more than the control group. For the skills, in the post-test on the second week, the experimental group performances for both technical skills were greater

than those of the control group, and achieved statistical significance. After 3 months, the performances of the experimental group on pig-tail drainage care skills were greater than those of the control group, and also achieved statistical significance. Although the difference in performances for PCN tube care skills between the 2 groups is non-significant, the intervention successfully strengthened the improvement of skills overall. This research provides information on the benefits of digital teaching material on learning, and proves that cost-efficient, simple, and convenient mobile devices can be employed as effective and suitable learning tools. For future research, we recommend recording the time that students spend practicing their skills and the frequency of MP4 player use for the analysis and verification of effectiveness differences, thereby improving the comprehensiveness of relevant research.

Keywords : digital teaching material, MP4 player, mobile device, assisted teaching, learning effectiveness