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Activity 2

Digital toolkit for innovative curriculum and methodological development

Module - Problem solving

Method - Logic Games and Puzzles

Case study

Module 4 – Problem Solving

Case study - Active Learning Through Puzzles: A Real-World Intervention for Adult Learners in Healthcare

Related Method - Logic Games & Puzzles

Context and Background

Organisation: A professional development initiative within a large healthcare institution.

Target Group: Adult learners, specifically surgical technology students.

The intervention which is at the core of this case study aimed to improve knowledge retention and cognitive function related to Coronary Artery Bypass Grafting (CABG) surgery procedures.

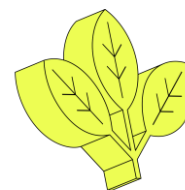
Problem / Challenge Presented

Surgical technology students often struggled to remember complex procedures and to visualise the sequence of surgical steps, tools, and equipment. Traditional teaching methods were not enough to help them improve their problem-solving skills and ability to plan and carry out tasks effectively.

Actions Taken / Method Applied

An innovative approach was introduced by integrating puzzle-based training into the curriculum. This method involved designing puzzles that reflected the sequential steps of CABG surgery, incorporating visual aids to represent surgical tools and equipment, and encouraging problem-solving through interactive activities. Group discussions were also facilitated to reinforce learning outcomes. Overall, this approach aimed to create a dynamic learning environment that fostered active engagement and stimulated critical thinking.

Outcomes and Results



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The implementation of puzzle game-based training resulted in several positive outcomes. Students showed improved retention of surgical procedures and enhanced cognitive abilities, particularly in problem-solving and executive function. The training also supported better visualisation of surgical steps and equipment sequences, while boosting student engagement and motivation. Together, these effects contributed to a more effective and engaging learning experience.

Lessons Learned

A few key lessons emerged from this experience. First, engagement is crucial: interactive and game-based learning methods can greatly boost student motivation. Second, practical application matters — designing activities that connect with real-world scenarios enhances both the relevance and effectiveness of learning. Finally, continuous feedback is essential, as regular assessments help track progress and address any gaps in understanding.

Key Success Factors

Several key factors contributed to the success of the activity. The puzzles were carefully aligned with the specific learning objectives of the surgical technology programme, ensuring relevance and purpose. The game-based, interactive design encouraged active participation and collaboration among students, while instructors fostered a supportive environment by providing guidance and encouragement throughout the learning experience.

Challenges Encountered and How They Were Addressed

Some students initially showed hesitation in engaging with the new learning method, which was addressed by clearly explaining its benefits and offering support to ease the transition. Additionally, occasional technical issues with the digital puzzles were managed by ensuring backup materials and readily available technical support.

Applicability / Recommendations for Educators

For educators looking to try similar approaches, it helps to tailor puzzles to the course content and learning goals. Using these activities regularly can reinforce learning, and providing the right support and resources makes it easier for students to engage. Regular feedback is also important, helping teachers see how learners are doing and adjust as needed. These



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strategies can make the learning experience more effective and enjoyable for adult learners in any field.