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Identifying SRNAs individual learning preferences utilizing the VARK Learning Inventory Tool

James Eads
Southern Illinois University Edwardsville

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Identifying SRNAs Individual Learning Preferences
Utilizing the VARK Learning Inventory Tool

Introduction of the Problem

Student Registered Nurse Anesthetists (SRNA) are required to pass the National

Certifying Exam (NCE) after they complete their didactic and clinical training. SRNAs were

recognized as a Certified Registered Nurse Anesthetist (CRNA) after they passed the NCE. The

NCE national average first-rate passage rate was 89.1% in 2011. The first-time passage rate

decreased to 84.1% in 2021. The number of anesthesia providers decreased as the percentage of

retirees increased. The number of nurse anesthesiology educational programs were increased to

decrease the shortage of anesthesia providers. The doctoral level students were placed in an

environment that required significant study time. Meanwhile, they had to maintain social

interaction with family and friends (Pierre, 2021). The educational and social demands influence

the SRNAs ability to pass the NCE. Expanding students' capabilities to complete their respective

programs and pass the NCE is a priority. This capstone project is an educational quality

improvement project that aims to increase the percentage of NCE first-time graduates at the

project site.

Literature Review

The literature review included content that pertained to learning styles, factors affecting

learning, and learning theories. Ramadhevi's (2022) article introduced the history of learning.

The article discussed traditional methods changes and focused on conceptual learning in science.

The incorporation of conceptual learning employed the use of video and audio. A longitudinal

study examined the impact of using search engines as a means of gaining knowledge

(Bhattachary, 2022). Articles involving anesthesia education were reviewed. Hands-on learning had been realistic and beneficial (Chandran, 2021). Problem-based learning was used in anesthesia education (Chilkoti, 2014). An open forum, recognized as grand rounds, involved open discussions among students and instructors (Siddiqui, 2017).

A descriptive study examined the increased knowledge retention when students' experiences and interests were integrated with classroom instruction (Gaunkar, 2019). In 2015, Ozdemir studied the impact that culture had on learning and retaining information. Self-assessment and self-regulated learning were incorporated to transfer didactic learning into clinical interventions (Strachan, 2015). In 2021, Hertel reported that successful students carried out self-regulated learning with metacognitive knowledge.

There were two learning theory assessments identified: the Kolb Learning Style Inventory and the VARK Learning Theory. According to Kolb (2001), individuals could learn by using their past experiences to interact with their current situation. The latest version (4.0) of the Kolb learning style identified learning preferences into nine categories. Neil Fleming introduced the Fleming VARK Theory in 1987. Fleming's theory summarized that every individual had a primary method of learning that benefited him/her the greatest. The four main methods were Visual, Auditory, Reading, Kinesthetics. The Fleming VARK theory would later conclude that some individuals had a hybrid method of learning. The individuals utilized more than one method for learning (Atkinson, 2017).

Project Methods

The capstone project was an educational quality improvement project that aimed to increase the percentage of NCE first-time graduates at the project site. The primary goal was that

each project participant's learning project was identified in phase 1 using the VARK Learning

Inventory Tool. A secondary goal was to increase the students' capabilities that led to an

increased percentage of NCE first-time graduates at the project site. The project group involved

with the project was the United States Army Nurse Anesthesiology program. Thirty-eight

military SRNAs were provided with a pretest survey questionnaire about self-perception of

utilizing individual learning styles. The project participants were given a 15-minute presentation

about the VARK learning theory and the VARK learning inventory tool. The project SRNAs

were administered the VARK learning inventory tool that assessed their individual learning

preference. A post-survey questionnaire that replicated the pre-survey questionnaire was

administered to the project SRNAs. After the individual learning preferences had been identified,

the SRNAs were provided with a 10-page learning profile specific to their individual learning

preference.

The educational quality improvement project was submitted to the IRB at Southern

Illinois University Edwardsville (SIUE). It was required that the educational quality

improvement was submitted to the MCOE IRB at Fort Sam Houston, Texas. This was a military

requirement as the project participants were military officers. The project was approved IRB

exempt by the SIUE IRB and the MCOE IRB.

Evaluation

The presurvey and postsurvey questionnaire consisted of 9 questions. The possible

responses to the 9 questions utilized a 5-point Likert scale for answers. The responses for each

SRNA were entered into an Excel spreadsheet. The average score for each question response was

calculated. The presurvey average score for each question was compared to the postsurvey

average score for each corresponding question. The responses of the 16 question VARK

inventory tool assessment was submitted to VARK Learn Limited. The company identified the individual learning preference for every project SRNA. The individual learning preferences that were identified were entered into an Excel spreadsheet. Statistical analysis was completed by computing the different learning preferences into groups. The percentages of each group were calculated relative to the entire project. The individual learning preference that was most prevalent in the individual learning preference was noted.

Twenty military SRNAs were identified with a single type and eighteen military SRNAs were identified with a hybrid learning preference. Very Strong Kinesthetic was identified as the group's highest single learning preference (21%). Very Strong Reading and Mild Visual learning preferences were each identified as the lowest single learning preference (3%). The group's highest hybrid learning preference was the Aural Kinesthetic (21%) and the lowest was the Reading Kinesthetic (3%). The components of Visual, Aural, Read, Kinesthetics were compared with group's individual learning preferences. Twenty-six percent of the individual preferences contained the Visual component and thirty-nine percent contained the Aural 39% of the individual preferences. The Read component was included in thirteen percent of the individual preferences. Seventy-four percent of the individual preferences contained the Kinesthetics component.

The 9 question presurvey group average (4.43) was compared with the postsurvey group average (4.57). The presentation for individual learning preferences produces a positive effect on the group's understanding of individual learning preferences. Question 8 "Do you think awareness of learning style can cause change in behavior like capability improvement and in implementation/application to learning your course materials" had an average score (4.24) for the group presurvey. The group postsurvey average score (4.59) for Question 8 had the highest

increase between presurvey and postsurvey scores for the 9 questions. This reflected a positive effect on the military SRNAs for implementing the actions identified on their 10-page learning profile.

The foremost limitation was that the primary objective could not be evaluated. First-time passage of the NCE for every participant wasn't measurable until three years after the SRNAs had completed the military educational program. How the information in the 10-page learning profile was presented limited the materials context. The information could have been presented in more than one format. A visual format, such as a video, could have been used with the 10-page learning profile.

Impact on Practice

For the project SRNAs, the results identified that hands on learning (Kinesthetics) is more relevant than lectures (Aural, Visual) for understanding doctoral education material. The long-term impact is that other educational programs implemented the project for their students. A change that would be made is to create different modalities for presenting the information contained within the current 10-page learning profile. This would include audio tapes, a podcast session, or an online video presentation on YouTube. SRNAs that drop from the educational program for academic reasons could have their individual learning preference identified. The findings would be evaluated for different types of individual learning preferences. Individually, the military SRNAs could be interviewed about whether or not he/she implemented the actions mentioned on the individual learning profile.

Author Contact Information

James Eads: james.a.eads.civ@health.mil