COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF DEMONSTRATION AND VIDEO ASSISTED TEACHING ON SUBCUTANEOUS INJECTION ADMINISTRATION ON THE SKILL DEVELOPMENT OF NURSING STUDENTS

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Those who know, do. Those that understand teach.

-Aristotle

INTRODUCTION

In the twenty-first century, significant changes are occurring related to new scientific discoveries. The most observable phenomenon is now the Internalization of society and the penetration of digital technologies into learning.

Rapid changes of modern world have caused the Higher Education System to face a great variety of challenges. Therefore, training more eager, thoughtful individuals in interdisciplinary fields is required. Thus, research and exploration to figure out useful and effective teaching and learning methods are one of the most important necessities of educational systems. The choice of teaching method to be used largely depends on the information or skill that is being taught, and it may also be influenced by the aptitude and enthusiasm of the students.

Different instructional techniques are used for clinical education including: clinical demonstration on patients by the instructors and demonstrations in the laboratory. Demonstration refers to visual presentation of the activities aiming to facilitate learning since the students directly watch the procedure being performed on actual patients or mannequin and can ask questions during the procedure or simulation. It provides experiences to the students. They can enhance their clinical skills and put that into their practice. However, demonstration method has some drawbacks as well. A crowd of students makes it difficult for all students to fully watch the procedures performed.

Use of advanced technology such as videos on computers, laptops and even on mobiles are very popular now a days. These provide new learning experience for students. Moreover, the ability to repeat some parts or the entire film is a big advantage.

Given the education quality, attention to students' education as a main product that is expected from education quality system is of much greater demand in comparison to the past. There has always been emphasis on equal attention to research and teaching quality and establishing a bond between these two before making any decision; however, studies show that the already given attention to research in universities does not meet the educational quality requirements.

BACKGROUND OF STUDY

Subcutaneous injection administration is administration of medicine into the subcutaneous layer of the skin directly below the dermis and epidermis. It is one of the common nursing procedures which can be demonstrated on patients, on mannequin as well as can be shown through video to enhance the practical skills of the students.

With respect to effectiveness, different researchers support the use of different type of teaching methods. In this institute, researcher has observed clinical demonstration as a contemporary method of teaching. But with the increasing number of students and their use of technology in the institute, emphasis should be given on the different methods of teaching so as to meet the requirements of the students. Due to different techniques opted by different instructors in doing same nursing procedure and in consideration of patient safety issues; video was developed as one of the teaching method to see its effectiveness as compared to demonstration. Hence, the researcher has felt the need to identify which teaching method is more effective in developing skills among the students.

PROBLEM STATEMENT:

A comparative study to assess the effectiveness of Demonstration and Video Assisted Teaching on subcutaneous injection administration on the skill development of nursing students.

OBJECTIVES

- To assess the level of knowledge regarding subcutaneous injection.
- To compare the effectiveness of demonstration and video assisted teaching on skill development in administration of subcutaneous injections

OPERATIONAL DEFINITIONS-

Effectiveness-

Effectiveness is the capability of producing a desired result. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep, vivid impression.

In this study it will be the difference in skill development in administration of subcutaneous injection using demonstration method and video assisted teaching.

Demonstration-

Demonstration is a practical exhibition and explanation of how something works or is performed.

In this study demonstration is exhibition and explanation of steps of subcutaneous injection administration on a patient.

Video Assisted Teaching-

A system of recording and reproducing moving visual images and sound used to communicate with a group of people.

In this study Video Assisted Teaching is recording and reproducing a video on administration of subcutaneous injections.

Subcutaneous injection-

A subcutaneous injection is administered as a bolus into the layer of skin directly below the dermis and epidermis.

In this study it is the same.

Skill development-

An ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carryout complex activities or job functions.

In this study it is the ability to administer subcutaneous injections following steps of the procedure in a sequential manner using aseptic techniques.

HYPOTHESIS:

H0- There is no difference in skill development in administration of subcutaneous injection using demonstration method and video assisted teaching at 0.05 level of significance.

H1- There is a significant difference in skill development in administration of subcutaneous injection using demonstration method and video assisted teaching at 0.05 level of significance.

ASSUMPTIONS:

- It is assumed that there is a difference in skill development in administration of subcutaneous injection using demonstration method and video assisted teaching.
- Video assisted teaching is an effective method in skill development of nursing students.

DELIMITATION:

- The study is confined to 70 students
- It is confined to students of II-year Basic BSc and GNM

RESEARCH METHODOLOGY:

Research Design: Quasi experimental research design.

Research approach: comparative study, quantitative approach

Sampling technique: Simple Random sampling technique by lottery method

Sample size: 70 students of II- year Basic BSc nursing and GNM

Population: students of selected school and college of Nursing

CRITERIA FOR SELECTING SAMPLE

Inclusion Criteria:

- Both male and female students of II- year Basic BSc nursing & GNM
- All students of II- year Basic BSc nursing & GNM who are willing to participate in the study

Exclusion Criteria:

- Students who are absent on the day of data collection

TOOL:

The tool consists of:

1. **Questionnaire:**

Section A. Demographic data

Section B: Structured Multiple-Choice questionnaire used to assess the knowledge regarding subcutaneous injections

2. Section C: Observational checklist: with each step scoring 1.

DATA COLLECTION:

Data collection was done in FON lab. A pre-test was conducted to assess the knowledge of subjects regarding subcutaneous injection. The samples were divided into two by simple random sampling technique. The procedure was demonstrated to one group using demonstration technique and simultaneously the procedure was shown to another group using video assisted teaching after which post-test was taken using a questionnaire and return demonstration was assessed using a performance check list.

PLAN FOR DATA ANALYSIS

The data obtained in this study was planned to be analysed on the basis of objectives and hypothesis of the study. Collected data was organized in master sheet. Demographic variables were analysed using frequencies and percentages. The effect of study was evaluated by using t Test. Result was presented in the form of tables, graphs and diagrams.

FINDING OF THE STUDY

SECTION A

Description of analysis of the demographic data:

It was observed that 90% (63) i.e. majority of the subjects belonged to the age group of 18-21 years whereas 6% (4) belonged to the age group of 22-25 years and 4% (3) belonged to the age group of 26- 29 yrs. Majority i.e. 63% (44) were day scholars whereas 37% (26) were hostilities.

SECTION B

Table 1. Comparison of knowledge scores of subjects in demonstration and video assisted teaching

N=70

Knowledge score	Demonstration n=33 n (%)		Video assisted teaching n=37 n (%)	
	Pre test	Post test	Pre test	Post test
Excellent (16- 20)	0	14 (43%)	0	17 (46 %)
Good (11-15)	0	7 (21%)	0	10 (27 %)
Average (6-10)	2(6%)	8 (24%)	4(11%)	7 (19 %)
Poor (< 6)	31 (94%)	4 (12%)	33 (89%)	3 (8 %)

It was observed that after intervention 43% (14) subjects in demonstration group had excellent knowledge whereas 46% (17) subjects of video assisted teaching had excellent scores. 21% (7) subjects in demonstration group had good knowledge whereas 27% (10) subjects of video assisted teaching had good scores. 12% (4) subjects in demonstration group had poor knowledge whereas 8% (3) subjects of video assisted teaching had poor knowledge scores.

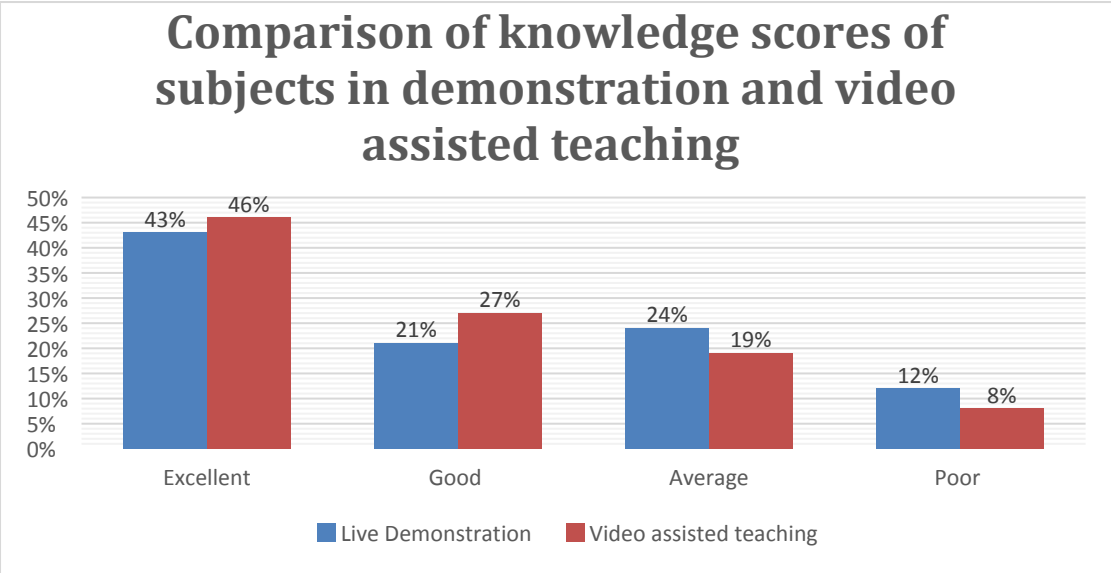

Figure 1. Comparison of knowledge scores of subjects in demonstration and video assisted teaching

Section C

The comparison of performance scores of demonstration group and video assisted teaching group is analysed using t test.

Table 2. Comparison of performance scores of subjects in demonstration and video assisted teaching

N=70

Performance score	Demonstration n=33 n (%)	Video assisted teaching n=37 n (%)	
Excellent (16- 20)	12 (36 %)	11 (30 %)	t= -0.97
Good (11-15)	9 (27 %)	16 (43 %)	p = 0.16795
Average (6-10)	9 (27 %)	8 (22 %)	
Poor (< 6)	3 (9 %)	2 (6 %)	

It was observed that demonstration group performance score mean is 12.55 and the video assisted teaching group performance score mean is 14.53 & t value is -0.97 and p value is 0.16795. The calculated value was lesser than the table 't' value at 0.05 level of significance so there is no significant difference between the performance score of two groups.

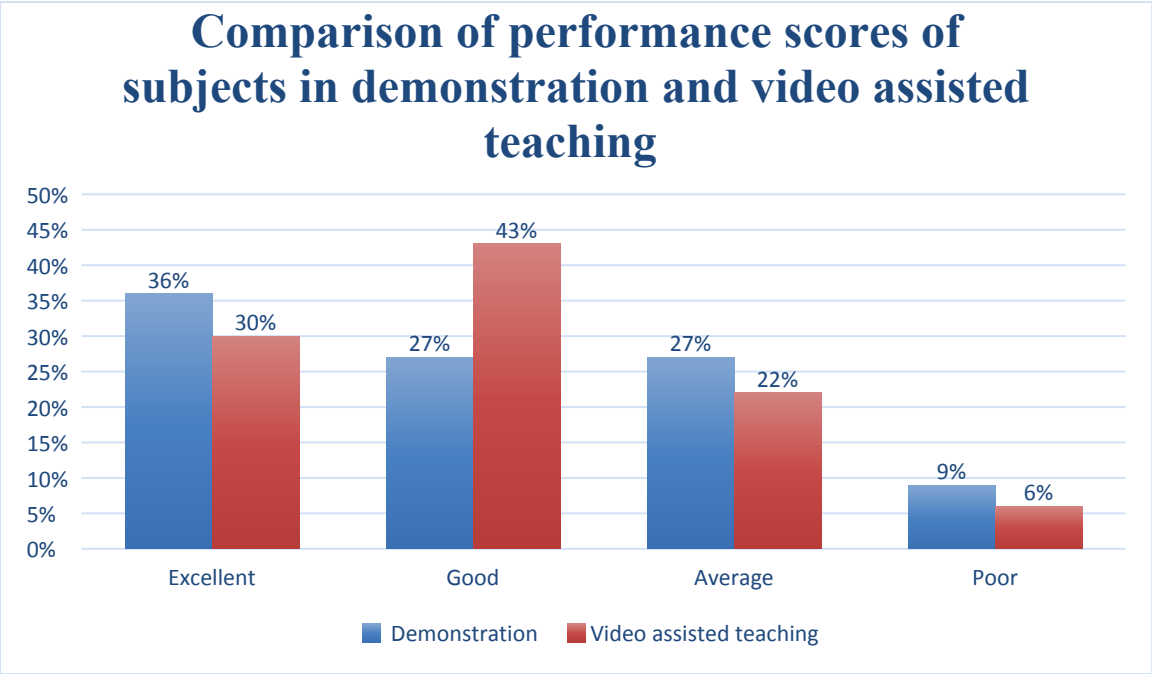

Figure 2. Comparison of performance scores of subjects in demonstration and video assisted teaching

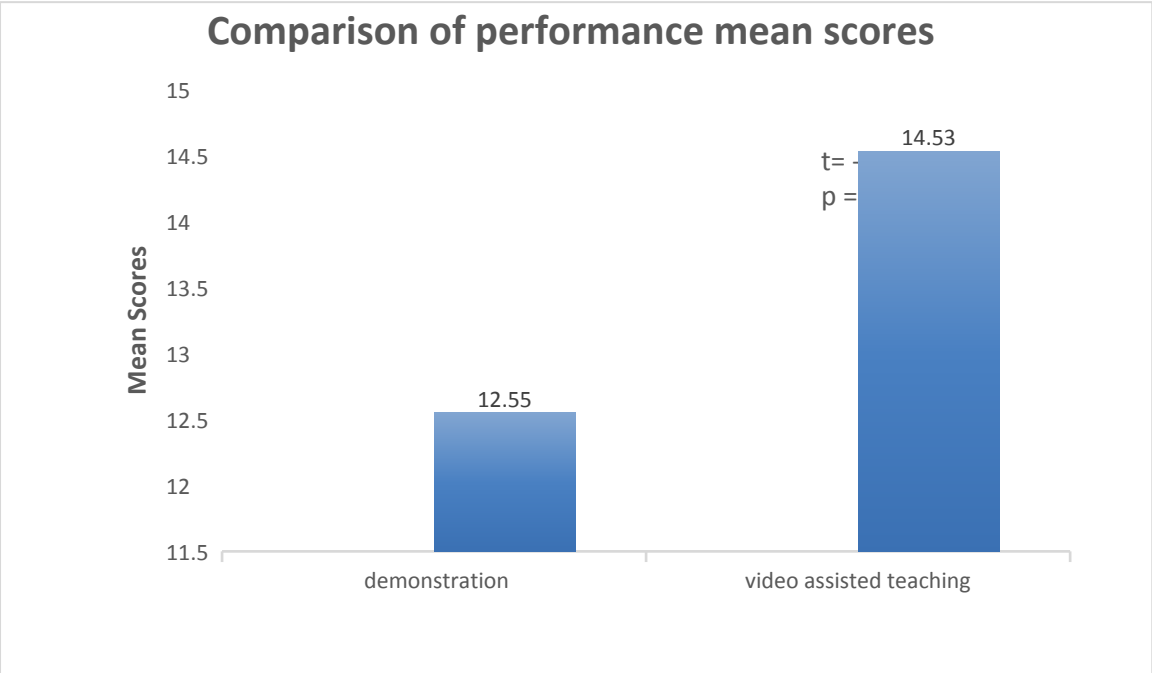

Figure 3. Comparison of performance mean scores of subjects in demonstration and video assisted teaching

Discussion

Digital technologies change our way of life, ways of communication, way of thinking, feelings, channels of influence on other people, social skills, and social behaviour. As Myamesheva states, “the high-tech environment - computers, smart phones, video games, Internet search engines - reshape the human brain”. New methods and materials of instruction are evolving every day.

The researcher wanted to evaluate the effectiveness of video assisted teaching in comparison of demonstration hence this study was conducted. Results of various studies support the use of different teaching methods. In the present study the mean scores of video assisted teaching was greater than demonstration group, but no significant difference was observed. Hence both teaching methods are equally effective.

Nowadays with the boon on internet and smart phone usage video assisted teaching is convenient as it increases the interest of the students as well as when a large group of students is involved the steps of the procedure can be visualised easily. The students can also review the steps of the procedure as and when required.

Recommendations

- Video assisted teaching can be used in teaching students various other procedures
- Other combinations of teaching methodology can be compared to know its effectiveness.
- A video prepared with proper steps can be used repeatedly by the students whenever they have a doubt.
- Video assisted teaching can be used during induction classes of novice nurses joining a new hospital according to their protocols.
- Video assisted teaching can be used in patient education of self administration of subcutaneous injection.

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