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Application of multimedia design principle in learning

Medical Science

KEYWORDS : animations, learning, multimedia

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ABSTRACT

The study is conducted for application of multimedia design principle as a cost effective tool for must know cardiac muscle knowledge. Two groups of first year MBBS Students- group A (n-20) were taught theory lectures and group B (n-20) were taught theory lectures with animations. In MCQ of 90% of Group B shows good to excellent performance; 65% of Group A gave good performance to excellent performance. The student's feedback shows that-lecture with the animations received good and excellent remarks. The role of teacher as a source of knowledge and role model cannot be replaced by technology. Whereas Application of multimedia design principle in learning is useful for improvement in understanding, reviewing and self-study.

INTRODUCTION:

Physiology is pillar of medical sciences. Only memorizing knowledge is useless for these subjects. The understanding knowledge is important. This subject contains designs and hypothesis. Hence imagination power is needed for understanding these subjects. Keeping this view, Video animations can help student's learning, many software for animations are available in market and internet.

The animations based learning is a dynamic form of multimedia learning. The use of information and communication technology in medical field is transforming MBBS education. Compact discs (CDs) and digital animations discs are the tools of information and communication technology[1]. In this study the traditional teaching theory lecture is compared with theory lectures with animations.

CONTEXT OF STUDY:

Aim – Impact of animations on Ist MBBS student's learning.

Objectives – To improve learning and increase confidence of students,

Overall goal-Application of multimedia design principle as a cost effective tool for must know cardiac muscle knowledge for Ist MBBS students.

Material –

- First MBBS Students- two groups of 20,
- Group A-theory lecture for 45 minutes
- Group B- theory lecture with animations for 45 minutes.
- Topic of theory lecture anatomy and physiology of cardiac muscle
- Material for cardiac muscle from textbook and available software compact discs.

Method-

1. Permission of the Dean, MGM College & Hospital, Aurangabad.
2. Approval from the Institutional Ethical Committee
3. Preparation of checklist for MCQ evaluation,
4. Pear review of documents
5. Consent of all students.
6. Group A – received theory lecture followed by MCQ,
7. Group B – theory lecture with animations followed by MCQ,

OBSERVATIONS-

MCQ of cardiac muscle topic performed both groups.

Table No: I MCQ performance

GROUPS	PERFORMANCE					
	AVERAGE Students	%	GOOD Students	%	EXCELLENT Students	%
Group A	7	35	11	55	2	10
Group B	2	10	14	70	4	20

Graph No:I- MCQ Performance Vertical axis (VA)-percentage of students, Horizontal axis(HA)- grading of performance.

2)Students feedback –Students were guided to fill the feedback forms after the MCQ evaluation. The eight points were asked to grade as poor, average, good, excellent in all groups.

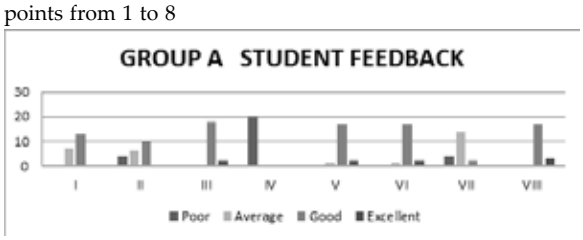
Table No:II- feedback of Group A

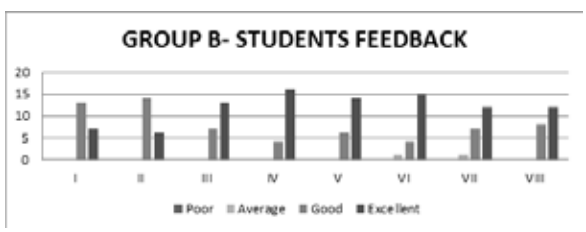
SR NO	CHARECTERISTIC	Score Poor-1	Score Average -2	Score Good-3	Score Excellent -4
I	Understanding of all steps	0	7	13	0
II	Ability to recollect	4	6	10	0
III	Relevance of subject	0	0	18	2
IV	Opportunity to review	20	0	0	0
V	Opportunity to interact	0	1	17	2
VI	Content of knowledge	0	1	17	2
VII	Confidence of performing	4	14	2	0
VIII	Satisfaction of learning	0	0	17	3

Table No:III students feedback, Group B

SR NO	CHARECTER-ISTIC	Score Poor-1	Score Aver-age -2	Score Good-3	Score Excellent -4
1	Understanding of all steps	0	0	13	7
2	Ability to recollect	0	0	14	6
3	Relevance of subject	0	0	7	13
4	Opportunity to review	0	0	4	16
5	Opportunity to interact	0	0	6	14
6	Content of knowl-edge	0	1	4	15
7	Confidence of performing	0	1	7	12
8	Satisfaction of learning	0	0	8	12

Graphs II & III VA-Number of students, HA–the feedback points from 1 to 8





a)Best in theory lecture –student's feedback

1. Live perception of Topic,
2. Interaction with teacher,
3. Increased confidence of student,
4. Decrease fear & apprehension to learning.

b)Best in Theory Lecture with animations-student's feedback

1. It shows the internal anatomical structures illustratively..
2. Cardiac musle nicely demonstrated ,visually excellent,
3. Modifications seen better,
4. Increased ability to recollect and reviewing.
5. Helps to improve confidence.
6. Interest in the subject is increased
7. Each individual can see the field area as compared to theory lecture.
8. Better Clarity & magnification.

Evaluation –

1. From Table No I, in MCQ of cardiac muscle the 90% of Group B shows good to excellent performance; 65% of Group A gave Good performance to excellent. Thus the students with both performed better than those with only theory lecture.

2. The **student's feedback** shows that-For understanding of steps and ability to recollect the animations received good and excellent remarks. The theory lecture has the best ability to interact and animations gives opportunity to review. Group B had more confidence of performance and satisfaction of learning. 80% students mentioned that reviewing helped in improvement of learning.

DISCUSSION

Videos can have a strong effect on the mind and senses. Students can experience the powerful cognitive and emotional impact.2 In a study conducted by Durham et al. (2009) on the effectiveness of video-based teaching, much less figure of 64.6% was quoted by students that watching the animations(videos) made it easier for them to put theoretical knowledge to clinical action. The use of animations was thought to have been useful for improving capabilities to deal with exams, thus attributing to MBBS education in an effective way.3 It has been suggested that Information Communication Technology and online learning will replace many of the traditional methods of teaching. However, it could not replace the physical presence of teachers nor should it be seen as a substitute for curriculum content.4

Conclusion -

The present study shows that students with both i.e. lecture with animations were better in all aspects. Thus the combination of theory lecture and video animations is the best Teaching Learning method for the anatomy and physiology. The role of teacher as a source of knowledge and role model cannot be replaced by technology. Whereas Application of multimedia design principle in learning is useful for improvement in understanding, reviewing and self-study.

REFRENCES

1. L. Feeney British Medical Journal 204, 19 - 28 (2008), A description of the new technologies used in transforming Medical education
2. Berk, R. A. (2009). Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom. International Journal of Technology in Teaching and Learning, 5(1), 1–21.
3. Durham, J.A., Brettel, S., Summerside, C., McHanwell, S. (2009). Evaluation of a virtual anatomy course for clinical undergraduates. Eur J Dent Education; 13: 100-109.
4. Mahyunah Masud et al, Validating e-Teaching and Learning Innovation in MBBS Education; European International Journal of Science and Technology Vol. 2 No. 6 July 2013;199