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Effectiveness of Combined Use Different Teaching - Learning Methods and Media in the Improvement in Each of the Cognitive, Psychomotor and Affective Skills Among Medical Students

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ABSTRACT

Background: Medical education has called for a shift from acquisition of biomedical knowledge to the development of professional skills.

Objectives: The study aims to assess the effectiveness of using different Teaching – Learning Methods and Media in the improvement in each of the Cognitive, Psychomotor and Affective Skills among medical students.

Material and Methods: A study was conducted among 6th semester Medical students in Department of Community Medicine, Katuri Medical College and Hospital, Guntur. It was before and after comparison non-randomized study. Test was conducted after teaching by the traditional methods and after teaching using Blend of Different Teaching – Learning Methods and Media - a combination of lecture with IMNCI videos, photograph, exercises, role play and group discussions of an accompanying Microsoft PowerPoint slideshow. . Marks obtained were recorded, and analysis of data was done.

Results: The study was conducted in Katuri Medical College and Hospital, Guntur. 6th semester Community Medicine clinical batch was taken for study. There were 37 students in the batch out of which 34 were present. 19(56%) were males and 15 (44%) were females. The students were almost similar in their age with two of them from different cultural background. The results of this study showed that there was a statistically significant improvement in each of the cognitive, affective and psychomotor domain of the students using Blend of Participatory Teaching – Learning Methods and Media than the routine method of teaching. ($P < 0.001$).

Conclusion: The results of this study showed that there was a statistically significant improvement in each of the cognitive, affective and psychomotor domain of the students using Blend of Different Teaching – Learning Methods and Media An effective teacher has to combine various methods to achieve the educational objectives in an optimum way.

KEYWORDS : Teaching - learning methods, Teaching – learning media, Cognitive Skills, Psychomotor Skills and Affective Skills

INTRODUCTION:

The outcome of professional education should be appropriate to the development of Skills and not mere acquisition of Knowledge. Medical education has called for a shift from acquisition of biomedical knowledge to the development of professional skills. The current curriculum emphasis is on "what the student must be able to do" than "what the student must know".

A skill could be defined as a refined pattern of movement or performance based upon and integrated with the perceived demands of a situation. A professional skill is not fixed and inflexible action but is an adaptive and flexible action tailored to the demands of a situation. In simple terms, a skill is the ability to act appropriately in response to a situation. A Skill could be classified into three main Domains: (1) Intellectual or Cognitive Skills (2) Psychomotor or Practical Skills (3) Affective or Communication Skills.

The Education process consists of setting educational objectives, providing teaching - learning experiences and evaluating the attainment of educational objectives. A variety of teaching - learning experiences are used to achieve educational objectives of different Domains and this necessitates use of different teaching - learning methods and media. A teaching – learning method is a planned way of providing a teaching - learning experience. Teaching - learning media (T-L media) are the means of communicating educational information. T-L media usually form components of teaching - learning methods [1].

Hence the study aims to assess the effectiveness of using different Teaching – Learning Methods and Media in the improvement in each of the Cognitive, Psychomotor and Affective Skills among medical students.

Material and Methods:

The study was conducted in Department of Community Medicine, Katuri Medical College and Hospital, Guntur. 6th semester Community Medicine clinical batch was taken for study. It was before and after comparison non-randomized study. There were 37 students in the batch out of which 34 were present. A clinical batch was first taught by the traditional methods of taking a clinic social case study of Diarrhea by explaining the case taking and Demonstration of examination. A test was first carried out in a short case format. The total marks assigned for a short case clinical examination was 25. The students were asked to take a brief history, and do a relevant clinical examination on the patient. All these activities were observed by the examiner. The total marks were subdivided into various skill wise distributions; cognitive domain 10 marks psychomotor domain 10 marks and affective domain 05 marks, respectively. Now the same batch is taught using Blend of Different Teaching – Learning Methods and Media - a combination of lecture with IMNCI videos, photograph, exercises, role play and group discussions of an accompanying Microsoft PowerPoint slideshow[2]. Now again the batch was tested for various skills in the same format. Marks obtained were recorded, and analysis of data was done.

Data was entered in Microsoft Excel and analyzed using Epi info Software. Appropriate tests of significance were used wherever necessary.

Results:

The study was conducted in Katuri Medical College and Hospital, Guntur. 6th semester Community Medicine clinical batch was taken for study. There were 37 students in the batch out of which 34 were present. 19(56%) were males and 15 (44%) were females. The students were almost similar in their age with two of them from different cultural background. The results of this study showed that there was a statistically significant improvement in each of the cognitive, affective and psychomotor domain of the students using Blend of Participatory Teaching – Learning Methods and Media than the routine method of teaching. ($P < 0.001$).

Cognitive skill Score of batch with traditional method ranged from 3-6 for 10 marks with Mean ± 2SD is 4.82 ± 2(0.94). Standard error of Mean was 0.16. Cognitive skill Score of batch using Blend of Participatory Teaching – Learning Methods and Media ranged from 6-9 for 10 marks with Mean ± 2SD is 7.35 ± 2(1.12). Standard error of Mean was 0.192. The improvement in Cognitive Skill is statistically significant ($P < 0.001$).

Psychomotor skill Score of batch with traditional method ranged from 4-7 for 10 marks with Mean ± 2SD is 4.97 ± 2(0.96) Standard error of Mean was 0.166. Psychomotor skill Score of batch using Blend of Participatory Teaching – Learning Methods and Media ranged from 6-9 for 10 marks with Mean ± 2SD is 7.59 ± 2(0.74) Standard error of

Mean was 0.126. The improvement in Psychomotor Skill is statistically significant ($P < 0.001$).

Affective skill Score of batch with traditional method ranged from 1-3 for 5 marks with Mean ± 2SD is 2.38 ± 2(0.49). Standard error of Mean was 0.08. Affective skill Score of batch using Blend of Participatory Teaching – Learning Methods and Media ranged from 3-4 for 5 marks with Mean ± 2SD is 3.61 ± 2(0.49). Standard error of Mean was 0.08. The improvement in Affective Skill is statistically significant ($P < 0.001$).

Discussion

"I hear...I forget, I see...and I remember, I do...and I understand" is an ancient Chinese Proverb. The study reveals the same. In the Study there is significant improvement in each of the cognitive, affective and psychomotor domain of the students using Participatory Teaching – Learning Methods and Media than the routine method of teaching ($P < 0.001$). One of the emerging technologies in higher education is a combination of an audio recording of a lecture with video images of an accompanying Microsoft Power point slideshow. This combination has been referred to as a video podcast,[3] computer based learning [4] or audio/visual rich media presentations[5].

As against these findings most of the studies observed that there is no difference in scores between traditional methods of teaching and modern methods of medical education. Schreiber et al., in the study described an experiment in which medical students viewed live and recorded lectures and the study found no significant difference in test scores between conditions, though students expressed a preference for the live lecture[6]. Davis Jet al in their study addressed teaching of evidence based medicine in a medical school in Birmingham, UK and found similar knowledge gain in students randomized to live lectures and those randomized to video podcast with PowerPoint slides™ and audio voiceover but student preferences were not directly assessed[4] .

Sourya Acharya et al in their study observed that the scores after post-sensitization with Role-play in each domain were significantly better than the pre-sensitization scores, cognitive domain (95% confidence interval [CI]: −5.14 to −4.60; $P < 0.001$), affective domain (95% CI −3.26 to −2.65; $P < 0.001$), and psychomotor domain (955 CI −5.56 to −4.62; $P < 0.001$), respectively[7]. Role-plays can be used as an extremely effective tool for teaching of clinical medicine. The same findings were observed in our study.

Of the 353 students who received questionnaires Cardall S et al in their study observed that When using accelerated, video-recorded lecture as opposed to attending lecture, students felt they were more likely to increase their speed of knowledge acquisition (79.3% of students), look up additional information (67.7%), stay focused (64.8%), and learn more (63.7%)[8]. Hence our study shows that Blend of Different Teaching – Learning Methods and Media is necessary to achieve quality in Medical Education.

Conclusion

The results of this study showed that there was a statistically significant improvement in each of the cognitive, affective and psychomotor domain of the students using Blend of Different Teaching – Learning Methods and Media - a combination of lecture with IMNCI videos, photograph, exercises, role play and group discussions of an accompanying Microsoft Power point slideshow than the routine method of teaching. A perusal of various teaching methods and their scope makes it clear that there is no single – ideal method for education. An effective teacher has to combine various methods to achieve the educational objectives in an optimum way. Training to medical teachers should be conducted which includes microteaching sessions and feedback. Limitations of the study are that the study was conducted on a very small sample and sampling is non randomized.

REFERENCES

1. N.Ananthakrishnan, K.R.Seturaman, Santhosh Kumar. Medical Education: Principles and Practice, 2nd Edition, pg 39-71. | 2. Govt. of India. WHO (2003), Students handbook for IMNCI. Integrated Management of Neonatal and Childhood illness. | 3. Copley J: Audio and video podcasts of lectures for campus-based students: production and evaluation of student use. Innovations in Education and Teaching International 2007, 44:387-399. | 4. Davis J, Crabb S, Rogers E, Zamora J, Khan K: Computer-based teaching is as good as face to face lecture-based teaching of evidence based medicine: a randomised controlled trial. Med Teacher 2008, 30:302-307. | 5. Pilarski P, Johnstone DA, Pettepher CC, Osheroff N: From music to macromolecules: Using rich media/podcast lecture recordings to enhance the preclinical educational experience. Med Teacher 2008, 30:630-632. | 6. Schreiber, E., Fukuta, J., and Gordon, F., "Live lecture versus video podcast in undergraduate medical education: A randomized controlled trial," BMC Medical Education, 2010. | 7. Sourya Acharya, Samarth Shukla, Neema Acharya, Jayanta Vagha. Role play – an eff ective tool to teach clinical medicine. Journal of Contemporary Medical Education, 2014, Vol 2, Issue 2 pg 91 -96. | 8. Cardall S1, Krupat E, Ulrich M. Live lecture versus video-recorded lecture: are students voting with their feet? Acad Med. 2008 Dec; 83(12):1174-8.