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Research Article

THE COMPARISON BETWEEN MEDIA/ TEACHING AIDS AND DISCUSSION GROUPS OF EPIDEMIOLOGY LECTURE AMONG PUBLIC HEALTH SCIENCES' STUDENTS

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ABSTRACT
The aim of study was to compare different types of teaching in epidemiology lecture among public health sciences' students. It was a comparable study (cross-sectional study), among public health sciences' students who registered in year 2011- 2012, at the faculty of health sciences, Ahvaz Jundishapur University Medical Sciences, Iran. Twenty two subjects (n= 22) of public health group, faculty of Health Sciences who registered in year 2011- 2012 were involved. The investigator was taught two different types of teaching of topics, with using media such as power point slides, films or videos and creating discussion groups. The epidemiology lecture was included of types of prevention in different categories of diseases, experimental and observational studies in Epidemiology. At the end of each lecture, the students were tested by an exam. The exam consisted of 20 optional questions. Each correct answer was marked as one score. The total and highest score was 20. The results of students were compared to evaluate the best type of teaching. The results showed that mean score of fundamental epidemiology lecture in both first and second semester was higher in teaching by making discussion groups compare to teaching using media. Similar trend was noted for observational and experimental study in first and second semester ($p < 0.05$ for all parameters). It could be concluded that teaching by making discussion groups is most effective than teaching by using media aids for the three epidemiology subjects.
Key world: Epidemiology, Teaching, Discussion group

INTRODUCTION

Educational Technology (ET) is the efficient organization of any learning system adapting or adopting methods, processes, and products to serve identified educational goals. This involves systematic identification of the goals of education, recognition of the diversity of learners' needs, the contexts in which learning will take place, and the range of provisions needed for each of these. The challenge is to design appropriate systems that will provide for and enable appropriate teaching-learning systems that could realize the identified goals[1].

The key to meeting this challenge is an appreciation of the role of ET as an agent of change in the classroom, which includes not only the teacher and the teaching-learning process but also systemic issues like reach, equity, and quality[2]. Over the past decades, educational technology has taken two routes: The first route involved a large number of experiments aimed at the qualitative improvement of schools, adopted the systems approach to analyse the problems plaguing the particular situation, and have evolved a range of solutions[3]. These have included the development of flexible systems, alternative curricula, multilevel organization of classes; low-cost teaching-learning materials, innovative activities, continuous support systems for teacher training, etc. While many of these experiments have demonstrated intrinsic merit, they have been restricted to pockets of intense practice and have failed to influence the larger school system. The second route is government sponsored schemes such as the Educational Technology (ET).[4]

Scheme and the Computer Literacy also Studies in Schools (CLASS) and their present-day analogues, including partnerships with global players. This included the supply of radio-cum-cassette players, colour televisions, microcomputers, present-day computer labs, and even satellite-receiving terminals. These schemes have largely remained supply-driven, equipment-centered, and disseminative in design[5]. Scant attention has been paid to the development of the entire support system that would establish ET as a reliable, relevant, and timely intervention, and despite clear indications of the necessity for this action. Information and Communication Technologies (ICTs) have brought in a convergence of the media along with the possibility of multi-centric participation in the content-generation and disseminative process. This has implications not only for the quality of the interchange but also for drastic upheavals of centre-dominated mindsets that have inhibited qualitative improvement. Modern ET has its potential in schools, in the teaching of subjects, examinations, research, systemic reforms, and, above all, in teacher education, overcoming the conventional problems of scale and reach through online, anytime, anywhere.[6]

There exists today a well-established publishing industry, including desktop publishing, with know-how and capabilities in producing kits, teaching aids, etc. There also exist production capabilities for audio and video, multimedia, broadcast channels, Internet connectivity, trained manpower, and institutions with these mandates that can be leveraged to address the challenges of education. Alternative models of education such as distance and open-learning, on-demand education, and other such flexible models of learning, will have to be tried and tested. Flexible systems, futuristic curricula, and a twenty-first-century career orientation have become a necessity for today's young people.[7]

The teacher is the most important element in any educational program. It is the teacher who is mainly responsible for implementation of the educational process at any stage. This shows that it is imperative to invest in the preparation of teachers, so that the future of a nation is secure. It is well known that the quality and extent of learner achievement are determined primarily by teacher competence, sensitivity and teacher motivation.[8,9]

Teaching skills would include providing training and practice in the different techniques, approaches and strategies that would help the teachers to plan and impart instruction,

provide appropriate reinforcement and conduct effective assessment. It includes effective classroom management skills, preparation and use of instructional materials and communication skills.[10,11]

Professional skills include the techniques, strategies and approaches that would help teachers to grow in the profession and also work towards the growth of the profession. It includes soft skills, counseling skills, interpersonal skills, computer skills, information retrieving and management skills and above all lifelong learning skills[12].

Therefore, this study **aimed** to evaluate the efficacy of two different types of teaching skills among students.

MATERIALS AND METHODS

Study Design and Location: It was a comparable study (cross- sectional study), among public health sciences' students who registered in year 2011- 2012, at the faculty of health sciences, Ahvaz Jundishapur University of Medical Sciences, Iran.

Subjects: Twenty two subjects (n= 22) of public health group, faculty of Health Sciences who registered in year 2011- 2012 were involved.

Method: The investigator was taught two different types of teaching of topics, with using media such as power point slides, films or videos and creating discussion groups. The epidemiology lecture was included of types of prevention in different categories of diseases, experimental and observational studies in Epidemiology. At the end of each lecture, the students were tested by an exam. The exam consisted of 20 optional questions. Each correct answer was marked as one score. The total and highest score was 20. The results of students were compared to evaluate the best type of teaching.

Statistical Analysis: Data was analysed using statistical packages for social sciences (SPSS), version 17. The normality test was performed using Shapiro Wilk test ($n< 100$). To compare mean of score of two different types of teaching for parametric data, one sample T- test was performed.

Outcomes: In school education the outcomes included as following:

Move from a predetermined set of outcomes and skill sets to one that enables students to develop explanatory reasoning and other higher-order skills. Enable students to access sources of knowledge and interpret them, and to create knowledge rather than be passive users. Promote flexible models of curriculum transaction. Promote individual learning styles. Encourage use of flexible curriculum content, at least in primary education, and flexible models of evaluation.

Table 1   Comparison between Different Types of Teaching during 2 semesters (n=22)

Variable	Mean	SD	Sd error	P
Fundamental epidemiology (Media 1st semester)	14.27	2.18	0.47	0.001
Fundamental epidemiology (Discussion group 1st semester)	16.27	1.58	0.34	0.001
Fundamental epidemiology (Media 2nd semester)	14.32	2.41	0.51	0.001
Fundamental epidemiology (Discussion group 2nd semester)	16.23	1.48	0.31	0.001
Observational study (Media 1st semester)	14.73	2.21	0.47	0.001
Observational study (Discussion group 1st semester)	16.59	1.97	0.42	0.001
Observational study (Media 2nd semester)	14.95	1.89	0.40	0.001
Observational study (Discussion group 2nd semester)	16.14	1.46	0.32	0.001
Experimental study (Media 1st semester)	13.91	2.37	0.50	0.001
Experimental study (Discussion group 1st semester)	15.77	2.37	0.51	0.001
Experimental study (Media 2nd semester)	14.50	1.92	0.41	0.001
Experimental study (Discussion group 2nd semester)	16.00	1.67	0.36	0.001

p < 0.05 is significant using One sample T-Test

RESULTS

The results showed that mean score of fundamental epidemiology lecture using media aids in first and second semester was 14.27 ± 2.18, 14.32 ± 2.41 respectively. The mean score of fundamental epidemiology by making discussion groups in first and second semester was 16.27 ± 1.58 and 16.23 ± 1.48 respectively. There was significant association between mean score of fundamental epidemiology using media device and making discussion groups in first and second semester (p= 0.001) (Table 1).

The mean score of observational study using media in first and second semester was 14.73 ± 2.21 and 14.95 ± 1.89 respectively. The mean score of observational study by making discussion groups in first and second semester was 16.59 ± 1.97 and 16.14 ± 1.46 respectively. There was significant association between mean score of observational study using media assistance and making discussion groups in first and second semester (p= 0.001) (Table 1).

The mean score of experimental study's lecture using media assistance in first and second semester was 13.91 ± 2.37 and 14.50 ± 1.92 respectively. The mean score of experimental study by making discussion groups in first and second semester was 15.77 ± 2.37 and 16.00 ± 1.67 respectively. There found significant association between mean score of experimental study using media device and discussion groups in first and second semester (p= 0.001) (Table 1).

DISCUSSION

Depending on the course which is taken, it is likely the students attend a range of different kinds of classes and be asked to study in a number of different kinds. Effective teaching methods are typically those methods that work well for a particular teacher in a given learning environment. Methods that work well for one teacher in one classroom may not work as well for that same teacher with another group of students, or for a different teacher working with other students. This means it can be somewhat difficult to determine what teaching methods should be using, and might consider utilizing different methods to find which ones work best. Effective teaching methods should allow to present information that is important while ensuring understanding and creating meaning for the students.[2]

There are a number of different effective teaching methods that can be utilized in a classroom, and the teacher should typically be familiar with multiple methods. Group

discussions, for example, can often work well in classrooms of small or moderate size. Teacher typically acts as a moderator for this type of lesson, so might begin the discussion but then pass the process of learning off to the students. This can be one of the most effective teaching methods for students who want to be engaged in their own learning, but can be less effective in other settings.[10]

Small group discussions are similar to full group discussions, but often work better for larger classrooms. Thirty or more students all trying to talk together can become chaotic, but six groups of five students are often easier to monitor and control. Students may also find it easier to be heard and express their opinions more freely in smaller groups. These types of small groups can be effective if the teacher wants his/her students to discuss a particular reading or work on complicated math problems together, though they are often less effective if the teacher wants his/her students to demonstrate individual effort or understanding.[13] According to the above view, in our study, group discussion was more effective rather than teaching by media. This type of teaching showed that our students were more interest to demonstrate their individual effort or understanding.

CONCLUSION

It could be concluded that group discussion teaching for small classroom was more effective than teaching by media device. Further study may recommend in a large classroom to observe the effectiveness of group discussion. There is an urgent need to convince the educational system, which should play an important role in the teaching-learning situation and to make it a more meaningful experience for both teachers and students.

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