

A study on the effectiveness of knowledge and acquisition for students using innovative teaching methods

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ABSTRACT

Introduction: It is known to us that good teaching methods improve students' standards. The aim is to study how new innovative teaching methods help in students improvement. **Materials and Methods:** About 40 students were involved in this study. These students were selected based on their age. Age limit was 18–21 years. The data collection questionnaire was developed after reviewing different relevant literature. The questionnaire involves about 10 questions mainly based on knowledge about new innovative teaching methods and awareness on new innovative teaching methods available. **Results:** It was clear that most of the students who belong to age limit of 18–21 years were aware of new innovative teaching methods in which 90% of the students believe in new innovative teaching method. Of that 90%, only 60% were able to avail new innovative teaching methods in their schools and college. About 54% of the students were not able to afford for new innovative teaching methods. **Conclusion:** It was noted that the knowledge about new innovative teaching methods on students was high, but still these methods were not available to all due to the lack of technological improvement and lack of civilization. Citizens of each country should help their students get access to new innovative teaching methods for their countries' improvements as "students are the backbone of future generation."

KEY WORDS: Improvement, Knowledge, Lack of access, New innovative teaching methods

INTRODUCTION

Scientific teaching involves active learning strategies to engage students in the process of science and teaching methods that have been systematically tested and shown to reach diverse students. Given the widespread agreement, it is seen surprising that change has not progressed rapidly nor been driven by the communities to improve the knowledge of the students in their community. Many people should demonstrate the effectiveness of active learning techniques to students for their improvement. Quantitative assessment indicates that new innovative teaching methods to acquire knowledge significantly enhance learning, and although time allocated to inquiry-based activities reduces coverage of specific content, it does not reduce knowledge acquisition as measured by standardized exams.^[1]

Teachers nowadays are also using computer systems to engage students, assess learning, and shape a well-knowledge student. Students can be asked to read and

solve problems on a website, and their answers can be analyzed before class to guide the design of lectures. Students can also search literature websites to improve their knowledge in concerned subjects when there is no access to any concerned subject faculties. Impressive results were achieved by Wright in a comparison of active and passive learning strategies in chemistry.^[2] At the University of Oregon, Udovic showed dramatic differences between students who taught biology in a traditional lecture and those who taught "Work-shop Biology," a series of active, inquiry-based learning modules.^[3]

Those teachers who focus on what students do in relation to their efforts to activate students' existing conceptions, and on encouraging them to construct their own knowledge and understandings. This is the base of new innovative teaching method.

Some techniques involve simple, inexpensive materials figured so that they invite students who cannot afford huge amount to get new innovative teaching methods which sometimes cost huge amount. By these ways, you can not only improve the community but also the whole country. Some scientists have replaced lectures almost entirely. Laws

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course “Calculus-Based Physics Without Lectures” at Dickinson University.^[4] Universities and professional societies need to create more vehicles for educating faculty in effective teaching methods so that they can teach their students effectively and it can make faculties understand what method they are following better. By these ways, faculty can interpret what they mean to do without any problem.

“The World According to Microbes,” at Oregon State University, which integrates science, math, and engineering. This course serves science majors and non-majors, and outcome assessments indicate high content knowledge and student satisfaction.^[5]

Improvement of the quality of the teaching learning processes calls for the implementation of educational innovations in the classroom and of the evaluation thereof. Hence, with the aim of presenting and evaluating the good teaching learning methodology.^[6,7]

Researchers have different views of the stability of approaches to teaching. These views come from their experience and belief. Some researchers see ways to teaching new innovative techniques as relatively stable.^[8] The same researchers further argue that enormous efforts are needed to be made to change teachers’ underlying belief.^[9] On the other hand, some researchers emphasize the phase that approaches to teaching methods are dynamic.^[10-12]

MATERIALS AND METHODS

About 40 students were involved in this study. These students were selected based on their age. Age limit was 18–21 years. The data collection questionnaire was developed after reviewing different relevant literature. The questionnaire involves about 10 questions mainly based on knowledge about new innovative teaching methods and awareness on new innovative teaching methods available.

RESULTS AND DISCUSSION

There was evidence that approaches to teaching were related to teachers’ discipline. Teachers from “hard” disciplines concentrated more on how teacher focused on approach to teaching, whereas those teaching “soft” disciplines were more student focused. This result obtained was in relation with previous research by some researchers.^[13]

However, a closer look, using the hard–soft, pure–applied categories did not reveal significant differences in the approaches to teaching between the “pure” and “applied” groups or either “hard” disciplines or “soft” disciplines by some researchers.^[14] This indicates that there were more differences between the teachers who are having either “soft” or “hard” disciplines than

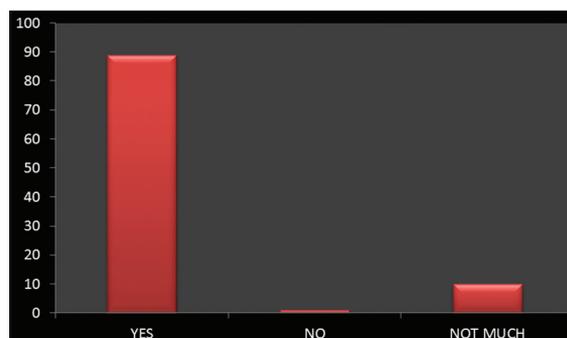


Figure 1: Do you think new innovative teaching methods are useful?

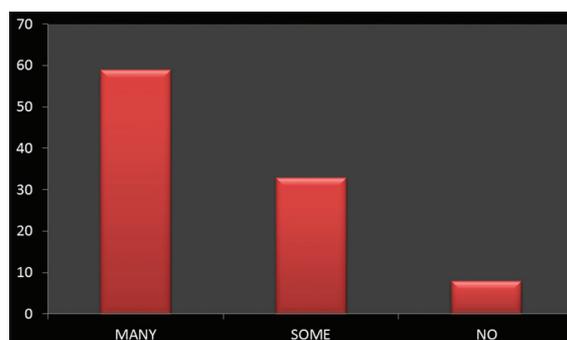


Figure 2: Do you have any new innovative teaching methods in your school or college?

within these two groups when divided into “pure” and “applied” subgroups.

As evidence shows that teachers’ approaches to teaching are related to the quality of students’ learning,^[15] the results of the present study offer the possibility that one way of improving student learning is to support teachers in developing more student-centered approaches to teaching. In these ways, new innovative teaching methods help a lot. However, when aiming at a student-centered approach to teaching in all teaching contexts, rapid changes in the use of different approaches to teaching cannot be expected.

Researchers have shown that only after a long process of pedagogical training does the shift in teaching generally from a teacher-centered to a student-centered.^[16]

Self-efficacy beliefs of university teachers are required for creation of their own new innovative techniques. Self-efficacy beliefs can be defined as individuals’ beliefs about their performance in a particular job and capabilities in a particular domain.^[17] Thus, self-efficacy beliefs are relative and situational in nature.^[18]

CONCLUSION

It was noted that the knowledge about new innovative teaching methods on students was high, but still these

methods were not available to all due to the lack of technological improvement and lack of civilization. Citizens of each country should help their students get access to new innovative teaching methods for their countries' improvements as "students are the backbone of future generation." "Read More, Acquire More, Live."

REFERENCES

1. Ebert-May D, Brewer C, Allred S. Innovation in large lectures: Teaching for active learning. Oxford university press on behalf of American institute of biological sciences. *BioSci* 1997;47:601-7.
2. Wright JC, Millar SB, Kosciuk SA, Penberthy DL, Williams PH, Wampold BE, *et al.* A novel strategy for assessing the effects of curriculum reform on student competence. *J Chem Educ* 1998;75:986.
3. Biernacki JJ, Ayers JB. Teaching cellular automation concepts through interdisciplinary collaborative learning. *Chem Eng Educ* 2000;34:304-9.
4. Heuvelen AV. Learning to think like a physicist: A review of research-based instructional strategies. *Am J Phys* 1991;59:891-7.
5. Buxeda RJ, Moore DA. Transforming a sequence of microbiology courses using student profile data. *Microbiol Educ* 2000;1:1-6.
6. Lambert N. Ban happy sheets! Understanding and using evaluation. *Nurse Educ Today* 2012;32:1-4.
7. González Chordá VM, Maciá-Soler ML. Evaluación de la calidad del proceso enseñanza aprendizaje en estudios de grado en enfermería. *Rev Latino Am Enfermagem* 2015;23:700-7.
8. Kember D, Kwan K. Lecturers' approaches to teaching and their relationship to conceptions of good teaching. In: Hativa N, Goodyear P, editors. *Teacher Thinking, Beliefs and Knowledge in Higher Education*. Dordrecht: Kluwer; 2002. p. 219-40.
9. Kember D. A reconceptualisation of the research into university academics' conceptions of teaching. *Learn Instr* 1997;7:255-75.
10. Prosser M, Trigwell K. *Understanding Learning and Teaching. The Experience in Higher Education*. Buckingham: Open University Press; 1999.
11. Prosser M, Trigwell K, Taylor P. A phenomenographic study of academics' conceptions of science learning and teaching. *Learn Instr* 1994;4:217-31.
12. Samuelowicz K, Bain J. Conceptions of teaching held by academic teachers. *Higher Educ* 1992;42:93-111.
13. Lueddeke G. Professionalising teaching practice in higher education: A study of disciplinary variation and 'teaching-scholarship'. *Stud Higher Educ* 2003;28:213-28.
14. Biglan A. Relationships between subject matter characteristics and the structure and output of university departments. *J Appl Psychol* 1973;57:204-13.
15. Prosser M, Trigwell K. *Understanding Learning and Teaching. The Experience in Higher Education*. Buckingham: Open University Press; 1999.
16. Vermunt JD, Verloop N. Congruence and friction between learning and teaching. *Learn Instr* 1999;9:257-80.
17. Zimmerman B. Attaining self-regulation. A social cognitive perspective. In: Boekaerts M, Pintrich P, Zeidner M, editors. *Handbook of Self-Regulation*. San Diego, CA: Academic Press; 2000. P. 13-39.
18. Bandura A. *Self-efficacy: The Exercise of Control*. New York: W. H. Freeman; 1997.

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