ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 08, Issue, 02, pp.18852-18857, February, 2018

ORIGINAL RESEARCH ARTICLE OPEN ACCESS

STRATAGIC ASSESMENT OF USE OF "ENJOY" AUIDENCE RESPONSE SYSTEM (CLICKER) IN GRADUATE STUDIES IN KING KHALID UNIVERSITY COLLEGE OF DENTISTRY-ABHA-KINGDOM OF SAUDI ARABIA

[1,*]Dr. Sultan Mohammed Kaleem, [2]Dr. Asif Shaik, [3]Dr. Naheeda Shaik and [4]Dr. Kamran Bokhari

[1]Assistant Professor, Dept. of Diagnostic Sciences and Oral Biology, King Khalid University College of Dentistry, Abha-61471 KSA
[2]Assistant Professor, Dept. of DDS, King Khalid University College of Dentistry, Abha-61471 KSA
[3]Periodontist, Private Practioner Warangal -Andhra Pradesh
[4]Assistant Professor, Dept. MDS, King Khalid University College of Dentistry, Abha-61471 KSA

ARTICLE INFO

Article History:
Received 27th November, 2017
Received in revised form
23rd December, 2017
Accepted 11th January, 2018
Published online 28th February, 2018

Key Words:
ARS,
SRS,
Clicker.

Corresponding author:
Dr. Sultan Mohammed Kaleem
Assistant Professor, Dept. of Diagnostic Sciences and Oral Biology, King Khalid University College of Dentistry, Abha-61471 KSA.

ABSTRACT

Over the past decade, instructors in colleges and universities increasingly have used Audience Response Systems (ARS) typically in large classes to increase the level of student engagement and learning. Research shows that both students and instructors perceive ARS to be beneficial, although evidence of improved learning has been less clear. Experts emphasize that instructors must consider how technology might enhance good pedagogy in order for increases in learning to occur. However, professional groups propose goals for students in higher education that focus on deep learning rather than the knowledge-centered emphasis of many large classes. Recent research shows that Student response system coupled with pedagogical enhancements can promote deep learning when teaching and questioning strategies center on higher-level thinking skills. A framework integrating the levels of student responses with principles for good pedagogical practice is provided as a guide for using ARS to foster deep learning.

Objectives: To investigate student's perception of learning using clickers in comparison to classroom discussion & to what degree was the use of SRS perceived to motivate attendance and participation of students in the class. To provide a framework for teaching and learning with SRS in Dental education and suggested directions for using Technology based education.

Expected Outcome: Believed that SRS will enhance the students learning in the course
Believed that the students will more actively get engaged in the lectures.
Believed to improve interaction with their fellow classmates and their evaluation over time.
Analysis of the faculty perspective.

Materials to be Used: Conventional Class Room Projector with e smart podium.
ENJOY Audience response System software & hardware including student and faculty remotes with Receiver and cable connection

System Description: Hardware consists of Student keypad, Instructor keypad, receiver, main receiver and Software for ENJOY ARS. The ENJOY Audience Response System (ENJOY ARS) is an easy-to-use response system that obtains immediate feedback from every person synchronously in a classroom or conference room. It's a system composed of hardware (instructor remote, audience (student) remote, receiver and cable, etc.) and software.

The ENJOY ARS often be used to conduct the following activities: Normal Quiz, Rush Quiz, Elimination, Voting, Survey, Grade, Ad-lib Quiz, Oral Response, Attendance (Roll call), Grouping and Multi-Mode. Almost simultaneity, the ENJOY ARS can display the result histogram and score board. It will produce 11 statistics reports about these activities.

The ENJOY software include 3 interactive modes: "Quiz master" uses a PowerPoint plug-in to enrich the presentations, and this makes it very easy to learn and use; "Standard Exam" is used for self-paced / paper - based test; "Quiz freedom" can be used in some other software interfaces (such as IWB, Internet online exam software, FLASH, WORD and so on), no need prepare for questions, and easy to capture the reply result chart and save them in user's own documents.

Citation: Dr. Sultan Mohammed Kaleem, Dr. Asif Shaik, Dr. Naheeda Shaik and Dr. Kamran Bokhari. 2018. "Stratagic assesment of use of "enjoy" auidence response system (clicker) in graduate studies in King Khalid University college of dentistry-abha- Kingdom of Saudi Arabia, *International Journal of Development Research*, 8, (02), 18852-18857

INTRODUCTION

As the references, to a Chinese proverb (Tell me, I forget. Show me, I remember. Involve me, I understand) learning is active and social. In other words, learning is interactive. One way to incorporate interactive learning in the classroom is with the use of interactive student response systems, known as classroom communication systems, classroom performance systems, personal response systems, student response systems, wireless response systems, and electronic response Systems. Interactive student response systems use wired or wireless communication systems in which the students are able to answer questions electronically while in the classroom.

One advantage of this approach is that students are able to get immediate feedback to their answers, either in the form of a histogram showing class results, and/or as a signal on their individual remotes/keypads. This immediate feedback can then be used in reciprocal teaching, where the students learn from each other by discussing their correct/incorrect answers in collaborative groups. The interactive system also informs the instructor, in real time, of student understanding, which enables him/her to focus on misconceptions and concept areas that are confusing. Of course, this depends on the question asked. For example, asking, "Do you understand this," and getting a reply of "yes" does not guarantee understanding.

RESEARCH METHODOLOGY

This study took place in College of dentistry classrooms at King Khalid University during the year 2012-2013/14 first and second semesters. The university is located in the city of Abha in south Aseer province of Kingdom of Saudi Arabia. Participants are the students enrolled in college of dentistry in their 4^{th}, 5^{th} and 6^{th} years (Level 7,8,9,10,11 &12). During the academic year 2011 at College of dentistry, King Khalid University Abha KSA, an interactive Student response system was implemented for the active participation of the students to interact with the course provider during lectures. As a trial and error all the faculty were given workshop to get trained how to conduct the clicker sessions and many of the trainers had succeeded in conducting the session in spite of minor technical and practical problems faced during the sessions.

Treatment Group

The treatment (or experimental) group consists of students enrolled for BDS (Bachelor of Dental Surgery) course in college of dentistry King Khalid university. The instructors of the treatment group, used the same pattern of lecture format with addition of one variable, i.e.; the common lecture PPT supplemented with interactive questions mediated through an interactive student response system manufactured by ENJOY Audience Response System (RF-218) This study was conducted as a survey during the clicker sessions held soon after completion of lectures. A small quiz was conducted with questions in MCQ format pertaining to that particular lecture and students were asked to mark the correct answers through ENJOY ARS software Remotes distributed to them. After the quiz their overall response attained was displayed graphically as a histogram which directly reflects their attitude towards understanding the lecture in tote, their responses were saved and used later for grading purpose. Their attendance is recorded automatically. Later the students were asked to complete a survey regarding their experience with the new technology-based intervention introduced in the class.

Data Collection

Two surveys were administered to the students in the treatment group to determine their attitudes toward the interactive student response system. The first survey was a preliminary questionnaire, administered after the class period, to probe for students' first impressions of the interactive student response system. And to determine students' attitudes after having used the interactive student response system. This survey was survey, administered at the end of the study, to determine if students wanted to continue using the interactive student response system throughout the rest of the semester, if time permitted. The Second instrument was a daily journal that is kept during the study. This journal would ultimately assist in determining the instructor's attitude toward the interactive student response system. The clicker outcome survey consist of 10 outcome criteria against which scores from 0 to 3 are allotted for their level of ability to accept clicker in class room. The scores were recorded in the following format shown below (Templet 1) and this reflected as personal assessment modality for clicker based lectures. Demographic data thus collected on variables such as student gender, academic level, previous course experience, previous course performance, student attitude about the topics including attendance of lectures, perceived increase in student engagement in lectures, perceived enhanced learning, student satisfaction, and perceived sense of community with classmates and comparison with other instructional techniques used in the course were statistically ruled out to get the results.

RESULTS

There are 7 groups defined for the purpose of this study. Which include (Level 6,7,8,9,10,11,12 students enrolled in the BDS course in college of dentistry King Khalid University in the years 2011& 2012).Different instructors followed class Quiz in ENJOY ARS software after completion of their regular lectures. Small group discussions were held in Level 12 Students with different instructors followed by approximately 40 students in two sections. The topics covered were different based on the course syllabus they are enrolled.

Assessment: The Student participants were assessed accordingly in the classroom after Clicker Session with 10 parameters (a to j) with scores 0 to 3 as shown in the (Template 1). The participants were assessed in small group discussions and scored 0 to 5 depending upon the criteria followed as shown in the template below (Template 2). In the student's survey for scoring clicker sessions, parameter which stand out with highest scores are, Ability to apply knowledge, Ability to percept what is taught followed by ability to answer without fear and to attend lectures. It is obvious from the above graph that attendance to the clicker session was higher in Level 10 and level 7 courses followed by level 12 course. Class room discussions were continuously amended in level 12 course and to know whether the student perception has increased by use of clicker-based discussion, a clicker-based session was conducted during routine class room discussion. Each student actively participated in both the sessions and later both student and the instructor were given a short survey form to be filled, the following inferences were drawn by the result.

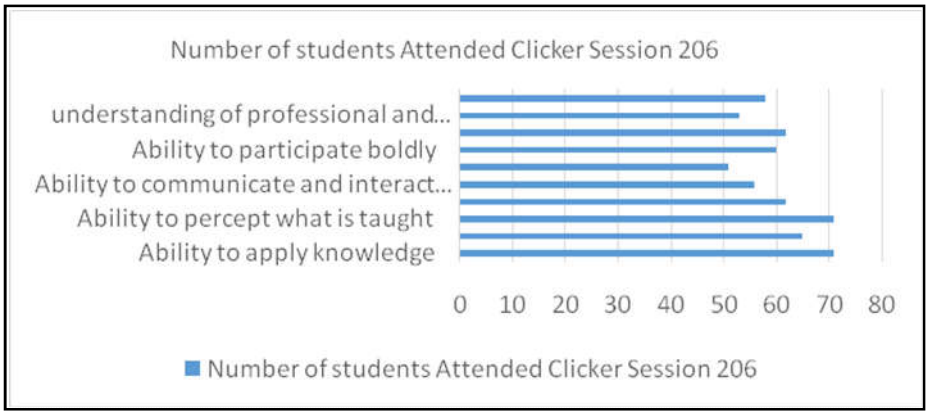
Table 1. Template for clicker-based lecture outcome survey

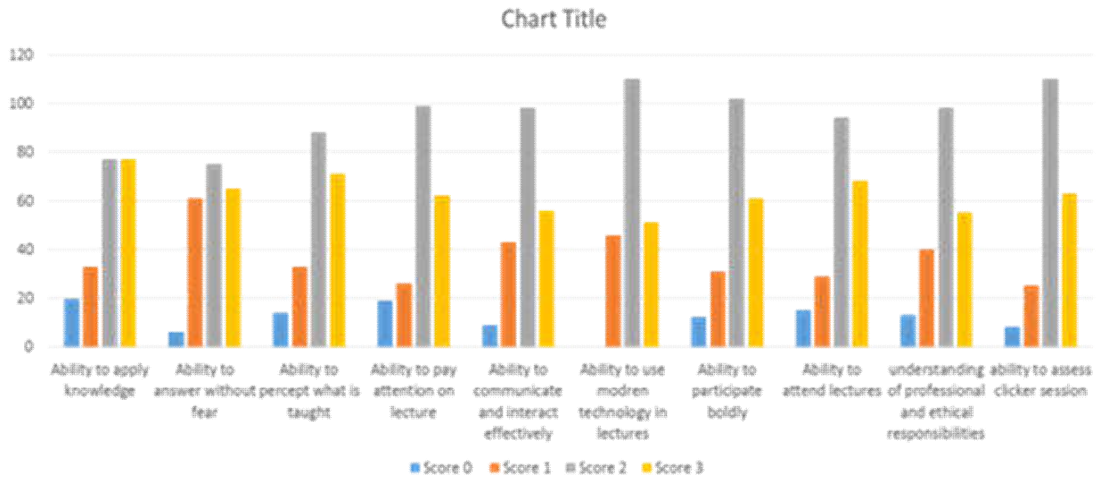
Clicker outcome	Not able to asses	Ability below acceptable	Minimum acceptable level	Highest level of ability
2012-2013/14	Score 0	Score 1	Score 2	Score 3
a) Ability to apply knowledge				
b) Ability to answer without fear				
c) Ability to percept with a thought				
d) Ability to pay attention to lecture				
e) Ability to communicate & interact effectively				
f) Ability to use technology in lectures				
g) Ability to participate boldly				
h) ability to attend lectures				
i) Understanding professional and ethical responsibilities				
j) Ability to Assess clicker session				

Table 2. Template for short discussion group

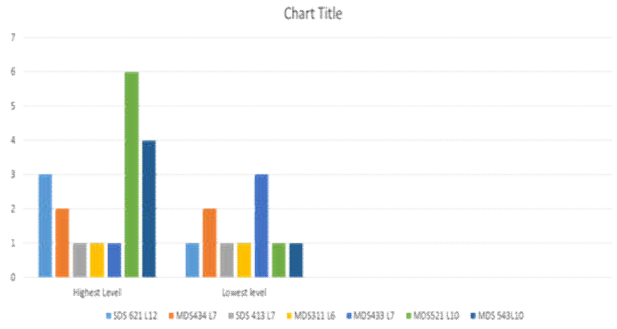
evaluation sheet for short discussion group				
Area:	Poor---	Average---	Outstanding	Comments
Content:				
Is the student able to substantiate and demonstrate the understanding of the subject?	0.5	1	1.5	
Accuracy:				
Is the answer to the question is accurate/reasonable?	0.5	1	1.5	
Clarity of answers:				
Is the student answer clear to the examiner?	0.5	1	1	
General impression:				
Is Overall presentation of the student is impressive?	0	0.5	1	
Total Score (5)		5		

Inference of results



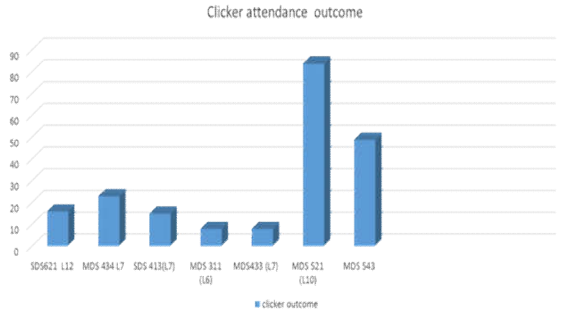


Graph 1. Students Perception on Clickers ENJOY ARS



Course Code & level	Highest level of ability	Lowest level of ability	Highest Percentage score	Lowest Percentile score
SDS 621 L12	3/16	1/16	18.75%	6.25%
MDS434 L7	2/23	2/23	8.6%	8.6%
SDS 413 L7	1/15	1/15	6.6%	6.6%
MDS 311 L6	1/8	1/8	12.5%	12.5%
MDS 433 L7	1/8	3/8	12.5%	37.5%
MDS 521 L10	6/84	1/84	7.1%	1.1%
MDS 543 L10	4/49	1/49	8.1%	2%

Table 1 and Graph 2. Highest and Lowest Level of Ability of student in Clicker Sessions



Graph 3. Attendance for clicker sessions

SDS 621 Level 12	ENJOY ARS	Group DISCUSSION	Percentage ARS	Percentage Group discussion
Number of students attended	16	16	100%	100%
Highest level of ability	3	6	18.75%	37.5%
Lowest Level of Ability	1	10	6.25%	62.5%

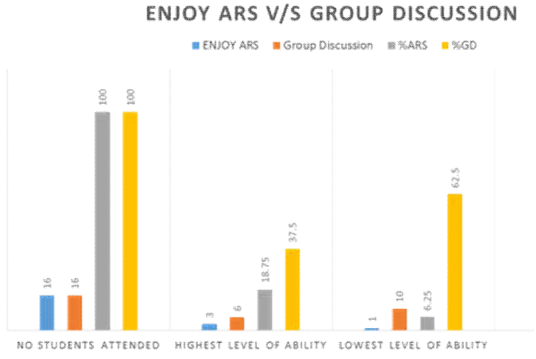
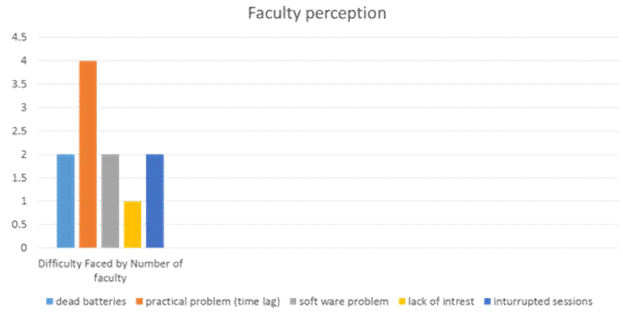


Table 2 and Graph 4. Perception of student for ENJOY ARS System in comparison to class room discussion

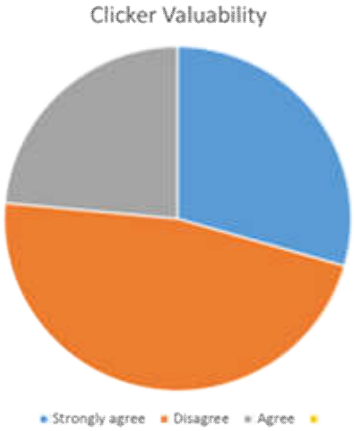
Highest level of ability to answer in group discussion = 6/16 (Score 5) = 37.5%
Lowest level of ability to answer in group discussion = 10/16 (Score 2) = 62.5%
Highest level of ability in clicker session = 3/16 Score 21= 18.75%
Lowest level of ability in clicker session =1/16 Score 10 = 6.25%



Graph 5. Difficulty Factor for Using Clickers In class By Faculty

Since lowest level of ability to answer is high in group discussion (62.5%) it is clear that students can score more during clicker session rather in group discussion as they get equal chance to answer without fear. By the survey conducted Among the faculty members conducting the clicker session in class room it was inferred as, Four faculty members faced practical problem like Time lag, two of the faculty faced interrupted sessions due to dead batteries in the student remotes, Two of them faced Software problem and one of the faculty faced lack of interest among students.

Pie Diagram: Evaluability of Clicker ENJOY ARS in Class room



The above pie diagram infers that Clicker or ENJOY ARS in a classroom as a learning modality proves Ineffective even though it creates interest in student for attending lectures and improving communication skills , due to many such practical problems implementing it in Undergraduate studies remains questionable.

DISCUSSION AND SUMMARY

This research describes the methods used in carrying out the study with the goal of answering the following research

questions like 1) does the use of interactive student response system increase the perception of student in comparison to class room discussion? 2) Does this system provide motivation to attendance and participation in the class? 3) What is the instructor's attitude towards ARS? 4) Overall, is this ARS system an effective tool for instruction in Traditional college lecture environment?

Q1. Does the use of interactive student response system increase the perception of student in comparison to class room discussion? (Graph4 Table2)

Based on the survey results, Student perception of using clickers and small group discussion was inferred in Table 2. The seven question perception survey which uses a scale from zero'0' (not able to assess) Score 1(able below acceptable) Score 2(Minimum acceptable level) Score 3(Acceptable level of ability) was used in clicker based lecture outcome (Templet 1).In small group discussions, score of 0.5(poor) 1(Average) 1.5(outstanding) was used with four areas of evaluation criteria such as Content, Accuracy, Clarity and General impression (Templet 2). Although not satisfactorily significant in some areas of perception mean scores were higher for students who attended small group discussion in level 12 compared to the students who attended Clickers.

	Class Room Clickers (n = 40)	Small Group Discussion (n=40)
Average Mean	2.045	2.12
Standard Deviation	0.040	0.852

Q2. Does this system provide motivation to attendance and participation in the class? (Graph 3)

According to the survey conducted by the research team during all the clicker sessions the following conclusions were drawn. Lowest percentage of attendance was recorded in two courses in level 7(7students) & 6 (8students) with highest percentile attendance is recorded in level 10 course (84Students). In comparison with classroom discussion and clicker session in Level 12 both session score equal percentage of attendance (100%) 16 students in both sessions. Hence can be concluded that clicker sessions help in motivating the student to attend classes.

Q3. What is the instructor's attitude towards ARSs? (Graph 5)

INSTRUCTOR'S ATTITUDE

The following conclusions were drawn from the study, Maximum number of faculty did not feel any difficulty in managing the clicker sessions in the beginning, later few of them face difficulties like Software and technical problems including dead batteries in operator's remotes. Few instructors faced Interrupted sessions due to lack of time slots and enthusiasm. In our study the instructor's attitude towards ENJOY ARS was satisfactory in conducting the small classroom quizzes rather than experimenting with Major examinations. Many instructors have an opinion that lack of separate time slot for conducting quiz is a major drawback and also each clicker session takes minimum of 10 minutes for Distributing Students Remote's and starting the session. Each session also has some preliminary arrangements with loading the questions and desire answers in the ARS Software.

Q4. Overall, is this ARSs system an effective tool for instruction in traditional college lecture environment? (Table 2, Graph Pie diagram)

According to the survey conducted by the research team during all the clicker sessions it has been concluded that, ARS can be an effective tool for instruction in a traditional classroom settings provided the session has its own time slot, with proper training.ARS system can improve interest in subject for the student and also aids in his attendance parameters. Due to backfills in implementation of the ENJOY ARS system our faculty opts for traditional classroom lectures and examinations in college lecture environment. Hence ENJOY ARS Clicker Session Proves Ineffective as a tool of instruction in College of dentistry King Khalid University.

Conclusion

Is ENJOY ARS Effective Tool for Instruction?

The student attitude surveys, revealed that students perceived that the use of the interactive student response system (ENJOY ARS) provided problem-solving practice, increased understanding and was a good learning tool, increased attentiveness (but not attendance), and made Subject more interesting and fun. Furthermore, ENJOY ARS anonymity encouraged participation in class. Overall, students generally liked using ENJOY ARS and felt that they had benefited from its use. Based on These positive student attitudes, we believe an interactive student response system is an effective tool for instruction, in general. However, based on the instructor's attitude, we do not believe it is an effective tool for instruction in a "traditional" college lecture environment. That is, due to the fast pace, set schedule, and predefined curriculum of Lectures at King Khalid University-Abha, and the time involved with incorporating an interactive student response system into a traditional lecture class as currently taught is not an ideal setting for an interactive student response system such as ENJOY ARS. We believe that ENJOY ARS would be better suited for a course that is more flexible in its structure, schedule, and content. It is not possible to cover the amount of material typically covered in a traditional lecture. Furthermore, academic achievement was not statistically significantly higher for the section of students that used the interactive student response system (treatment group) versus the sections that did not (control group). This supports the results of King Khalid University in that Semesters. However, "Interest can affect the degree to which a student persists in an activity… &interest has also been linked to deeper processing of information during learning…" Therefore, we still believe that over time, the increase in interest (enjoyment) and attentiveness in class when using an interactive student response system, as revealed by the student attitude survey, could positively impact students' grades provided a separate lecture could be incorporated in the curriculum based on ENJOY ARS. Based on these results, we believe it would be beneficial to instructors and to students if the traditional instruction method of college were revised in order to effectively implement an interactive system. Therefore, maybe the research question should not have asked if the interactive student response system was an effective tool for instruction in a traditional college lecture format, but rather, if a traditional college lecture is an effective format for an interactive student response system.

Future Studies

The following paragraphs explore some ideas and questions for future research studies. We found that ENJOY ARS "lesson" slides to be well written.

In fact, we would have enjoyed incorporating these lessons into our own lectures like a Microsoft PowerPoint presentations, and we wonder how students would have responded to that approach. Unfortunately, incorporating PowerPoint- like lectures would be an additional change from the traditional lecture environment, and thus, may have skewed the results of this study. Presentation of "lesson" slides is something to consider for future studies, The infrared remotes used in this study imposed some challenges or "quirks" that frustrated the students. Would students' attitudes significantly change if these newer/better remotes were used?

The overall student attitudes toward the interactive system were positive. However, we wonder if students' attitudes would change if the system had been used for a longer period of time. That is, would the novelty factor wear off after extended use? It is possible that both the time constraint (limiting the interactive system's use) and the number of variations between clicker sections affected the academic achievement results of this study. However, further research may help to determine if these factors do in fact affect academic achievement. We believe ENJOY ARS has the potential of being a very effective tool for instruction in a non-traditional lecture format, and its implementation is worth exploring.

Final Remarks

The attitude surveys show that the students enjoyed class more, and they seemed to think they were learning more, using ENJOY ARS, but the empirical evidence on academic achievement is that they did not learn more. The results of this indicate that simply incorporating new technology into a traditional class without also including pedagogical changes matched to the new technology is ineffective at anything but affective improvement. The attitude improvement alone justifies further study, but lack of learning gains strongly implies that future work should include appropriate pedagogical techniques.

REFERENCES

Abrahamson, A.L. 1999. *Teaching with Classroom Communication System - What it Involves and Why it Works*. Paper presented at the 7th International Workshop "New Trends in Physics Teaching", Puebla, Mexico, May 27-30, 1999. Downloaded on 5/26/04 from http://www.bedu.com/publications/html.

Beatty, I. 2004. Transforming Student Learning with Classroom Communication Systems. *EDUCAUSE Center for Applied Research – Research Bulletin*, 4 (3).

Cue, N. 1998. *A Universal Learning Tool for Classrooms?* Proceedings of the "First Quality in Teaching and Learning Conference," Hong Kong International Trade and Exhibition Center (HITEC), Hong Kong SAR, China, December 10-12, 1998. Downloaded on 7/20/04 from http://celt.ust.hk/ideas/prs/pdf/Nelsoncue.pdf.

Eric E. Fredericksen, 2008. Molly Ames- Evaluation of Personal responses system in large Classroom settings. *J Edu cause quarterly no* 2.

Hake, R.R. 1998. Interactive-Engagement vs. Traditional Methods: A Six-Thousand-Student Survey of Mechanics Test Data for Introductory Physics Courses. *American Journal of Physics*, 66, 64-74.

Harry L. dangle. 2008. Charles Xiaoxue Wang- Student Response Systems in Higher Education: Moving beyond Linear Teaching and Surface learning. JETDE journal of educational technology development and exchange vol 1, No 1, Nov.

Jeff Cain Ed D and Evan Robinson- A primer on Audience Response Systems: Current Applications and Future Considerations. AJPE 2008; 72 (4) Article 77.

Keller, C., Finkelstein, N., Perkins, K., Pollak S. 2009. Research-based Practices for effective clicker use.proceedings.aip.org Mar.

Margle Martyn-Clickers in Classroom:An Active Learning Approach, number 2 2007 EDUCAUSE QUARTERLY.

Robin H. Kay and Ann Le Sage- A Strategic assessment of Audience response systems used in higher education. AJET Australasian journal of Educational Technology. 2009, 25(2), 235-249.

****