“Click This”   
A study focused on Student Response Systems in the Elementary Classroom

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   Introduction:

This Action Research Project centers on the lack of student involvement during review over classroom content. As teachers in upper grades (5th and 6th), we are constantly teaching new content and having to review that content with our students several times over. We have noticed that students struggle with being engaged in the review because lack of interest or a feeling that they have already mastered the content. This poses problems within the classroom for two reasons: first, when students are not engaged with the rest of the class, they cause disruptions through their behavior, and second, they have not truly mastered the content and thus struggle when it comes to assessments.  
 Our goal is to introduce this Action Research Plan at the beginning of the 2012-2013 school year in both of our classrooms. Throughout the first semester, we will observe student involvement with content review; collecting data to use as a baseline. During the second semester, we will incorporate the use of the Student Response System (SRSs) during our review sessions and record data. This will give us a strong understanding of how well the SRSs affect student participation, engagement, and achievement.

An Area of Focus Statement:

As stated above, students struggle with engaging in review of content in the classroom. As a way to focus our students and get them more engaged with what we are reviewing, our idea is to implement a Student Response System when reviewing. The purpose of our Action Research Plan is to determine if a SRSs increases student involvement during review sessions, and which technique results in the highest student involvement.

Research Questions:

1. Would a Student Response System (SRSs) be an effective way to get students involved? And how?
2. Does a SRSs increase student engagement/enjoyment in the classroom? If so, how much?
3. Does the use of a SRSs increase the level of student achievement in the classroom? If so, how much?
4. What are the best methods to use SRSs to increase student motivation?

Related Literature:

Gok (2011) examined the use of SRSs within the classroom as a way to determine the advantages and the disadvantages of using the device. His study outlined the responses to the SRSs from both teachers and students. It was noted that “Student engagement and increased attendance were commonly mentioned by the instructors interviewed as a benefit of clicker technologies.” (Gok, 2011, p.74). Students also had a positive reaction to the use of SRSs in the classroom. “Students expressed a desire for more use of clickers across campus and within their individual courses.” (Gok, 2011, pg. 78). This study was very telling about the importance of using SRSs in the classroom and describing the advantages for such a system for teachers and students alike.

Bibles (2011) outlined different types of questions that can be used to enhance student engagement and learning within the classroom. He provided examples that explain how to offer different leveled questions to students at different points in the lesson. These questions then become a way to enhance student participation through added discussion and peer-instruction.

In Karaman’s study, (2011) he examined the long-term effects of using SRSs in the classroom. The purpose of the study was to examine “The effects of audience response systems (ARS) on students’ academic success and their perceptions…” (Karaman, 2011, pg.1431). Karaman concluded that student achievement did increase within the first four weeks of the study, but that after that first four weeks, the achievement was comparable to that of the control group, showing that the ARS did not increase achievement on a long-term basis. Although, when students were asked about their perceptions of the ARS, 100% of the students said they wanted to use the ARS more. 75% of students said the ARS made them learn more. So even though the data did not support the student perception, students felt more engaged and had gained more from the use of ARS.

Bartsch and Murphy (2011) also did a study on the engagement of students using Electronic Clicker Response System (ECRS). In this study they gathered 52 college participants into lectures on The Great Fire of London. The students were given a ten minute lecture that was read verbatim. The participants were asked 7 yes or no questions throughout the presentation. The groups were given a survey based on their engagement during the lecture. It was stated that “Many students may not have used an ECRS and may have become more engaged due to the novelty and may have become more engaged because they knew their answer would be anonymous.” (Bartsch and Murphy, 2011, p. 29) The groups were given a surprise quiz ten minutes later, to test their understanding of the lecture. The results showed little difference between the variable group (given clickers) and the control group (without clickers).

As a result of our research, so far, we have found several studies that support our idea that SRSs increase student engagement, achievement, and the use of technology in the classroom; however there were studies that had the opposite results as well. One of our concerns is that the studies to date have focused on college level courses which are a very different group of students than 5th and 6th graders. The results of our current studies can’t be generalized to all grade levels, and therefore, it is important to have a line of research that draws on the results of current studies, but also takes in the differences between college students and 5th and 6th graders.

Description of the intervention or innovation:

We will implement the use of a Student Response System as a way to review content with our students. We will use several different techniques with the SRSs, such as instant poll, word insert, and short summative quizzes. Throughout the process, we will collect data in each subject using each response technique.

Overview of your Data Collection strategies

Qualitative data collection techniques will be used for this study, with the exception of the quantitative testing results that will be used to compare student achievement. The study will be done in two grade levels, 5th and 6th, in which one out of two classes of 5th graders and one out of three classes of 6th graders will use the SRSs for their specific lessons. The other classes in those grade levels will act as the control groups, and will use normal methods of learning. All 5th grade classes will be taught by the same teacher, and all 6th grade classes will be taught by the same teacher as a way to ensure consistency throughout the study.

For this study, students will be separated into classes evenly without bias. The same lesson observer will be in both grades and classes in order to provide for a consistent assessment about the effectiveness of the SRSs. Also, students and teachers will be surveyed immediately following the lesson in order to have timely responses to the survey questions. In order to ensure that the students are protected, each student’s parents will be advised about the study and asked to sign a permission form allowing their student to participate. Student names will not be included in any of the results from this study; they will be kept confidential in order to protect them.

Data Sources

* Teacher and Student Surveys -Teachers and students will fill out a survey based on their opinions of the impact of the SRSs in their classroom. This survey will be given throughout the year in order to see if there is a change over time. Items on the survey include questions about student enjoyment, student participation, and personal opinions about the SRSs.
* Lesson Observations- Each lesson within the study will also have an observer. This observer will basically record what goes on throughout the lesson. They are there to observe reactions to the SRSs, participation levels, and enjoyment levels.
* Pre-test and Post-test- These tests will be used to determine student achievement compared to the control groups. We will analyze whether or not students in the test group achieved more, less, or the same as those students who were in the control groups. This is our only quantitative data.

Data Analysis plans

Our plan starts with giving all students a pre-test to see how much they already know about the topics in the lessons. We will use this data to compare the control group’s responses with the test group’s responses. The teachers and students will be given a pre-lesson survey; we will compile their answers to questions in two different ways. The first will be to put certain question answers into a likart scale where we will analyze the percentage of the responses to the individual choices. Then we will group similar answers to the remaining questions to see what the preconceived notions are about the use of clickers in the classroom. As the lessons are given, there will be an observer in each classroom filling out a survey of what they notice. Their responses will be compiled into comparable answers for each of the categories on their observation sheet, including student motivation, student participation, and methods of SRSs use. The students and teachers in the test groups will be given a post-lesson survey. The answers will be compiled in a similar manner as their pre-lesson answers, and will be used to see how each person involved with the lesson views the effectiveness of the clickers in the lesson. The final instrument that we will use is a post-test to see how the use of the clickers impacted the learning in the classroom. We will compare the individual questions based on the involvement of the clickers, by the mean of each group, and compare it to the pre-test answers of all of the students.

Section III:

1. Will there be other people involved in your action research project? If so, who are they and what would be their responsibilities? Including Shelley and I, there will be an observer involved in our ARP. The observer is required to observe three lessons without the use of clickers (for a baseline) and all the lessons that include the use of clickers to observe and record student responses.  
2. What negotiations would you need to undertake prior to beginning your project? For example, would you need to secure an administrator's permission? Parents' permissions? Before we began this ARP, we would need to gain permission from both our administration and a signed permission form from the parents of the students involved. In both of these cases, we would need to explain the purpose and plans for our ARP.  
3. What is the projected timeline for collecting, analyzing, and interpreting data? *Summer*- Shelley and I will come up with lessons that include the SRSs; as well as obtain our unbiased observer and set up dates for the observations. *Fall Semester*-This will serve as our baseline. We will collect data using traditional forms of reviewing; paying attention to student participation, engagement, and achievement. The baseline observations will occur during this time. *Spring Semester*-Shelley and I will introduce the SRSs into our lessons with the test group. We will use this semester to collect data from the observer, students, and teachers. *Summer*-We will analyze the data collected from the year and determine an appropriate Plan of Action for the following year. We will continue to collect data throughout the next year to determine if our Plan of Action was successful.  
4. What is the projected timeline for developing your recommended actions? Three months during the summer after our ARP is implemented; we want the Plan of Action to be ready for the following Fall.  
5. What would be your overall strategy for implementing any recommended actions resulting from your project? Overall, Shelley and I will be implementing the use of the SRSs first; after our second year of observation, if the results still prove positive, than our hope is to take our findings to the other 5th and 6th grade teachers to encourage their use of SRSs in their classrooms. One of the struggles may be that some teachers will chose not to implement the new technology in their classroom, in which case, we would need the support of our principal to encourage participation.  
6. What would be your process for ongoing monitoring (data collection and interpretation) of recommended actions? For ongoing monitoring, teachers will be required to fill out a post-lesson survey twice a quarter at their own discretion as a way to assess whether or not the SRSs increase motivation in their students during the lesson. We will also have the teachers continue the practice of pre-testing and post-testing to monitor whether or not there is an increase in student achievement.

References:

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Student Engagement and Performance. *Journal Of Educational Computing Research*, *44*(1), 25-33.

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Resource Courses. *Journal Of Forestry*, *109*(7), 417-420.

Karaman, S. (2011). Effects of Audience Response Systems on Student Achievement and Long-

Term Retention. *Social Behavior & Personality: An International Journal*, *39*(10), 1431-1440.

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Appendix A: Literature Matrix

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Author/s** | **Year** | **Variables Considered in the Study** | | | | | |
| **Student Achievement** | **SRS techniques** | **Subject enhancement** | **Student enjoyment** | **Technology in the classroom** | **Instant Teacher feedback** |
| Gray, K. & Owens, K. | 2012 | **\*** |  | **\*** |  |  |  |
| Gok, T. | 2011 | **\*** |  |  | **\*** | **\*** | **\*** |
| Bibles, B. | 2011 |  | **\*** |  | **\*** | **\*** | **\*** |
| Doe, C. | 2010 |  | **\*** |  |  | **\*** |  |
| Karaman, S. | 2011 | **\*** |  |  | **\*** | **\*** | **\*** |
| Bartsch, R. & Murphy, W. | 2011 | **\*** |  |  | **\*** | **\*** | **\*** |

Appendix B: Data Collection Matrix

|  |  |  |  |
| --- | --- | --- | --- |
| **Research Questions** | **Data Source** | | |
| 1 | 2 | 3 |
| 1. **Level of participation with SRSs?** | Student Survey | Teacher Survey | Lesson Observation |
| 1. **Level of engagement/enjoyment with SRSs?** | Student Survey | Teacher Survey | Lesson Observation |
| 1. **Methods of use with SRSs?** | Student Survey | Teacher Survey | Lesson Observation |
| 1. **Teacher Feedback?** |  | Teacher Survey | Lesson Observation |
| 1. **Student Achievement?** | Student Survey | Teacher Survey | Pre and Post-test |

Appendix C: Data Analysis Matrix

|  |  |  |  |
| --- | --- | --- | --- |
| **Data Collection Technique** | **Data Analysis Strategy** | | |
|  | **1** | **2** |  |
| **1. Student Survey about the use of SRSs in the classroom.** | Compile answers to questions 1 and 5 on a likart scale | Compile similar answers from questions 2-4 and 6 & 7. |  |
| **2. Teacher Survey about the use of SRSs in the classroom.** | Compile answers to questions 1 and 5 on a likart scale | Compile similar answers from questions 2-4 and 6 & 7. |  |
| **3. Lesson observation of SRSs lesson in classroom** | Compile similar answers together under each category |  |  |
| **4. Pre/Post-Test** | Look at pre-test answers from both groups of students | Compare the grades in the post-test of students in control group to test group |  |

Appendix D: Instrument

**Teacher Survey**

Pre-lesson:

1. Do you use the Student Response System (SRSs) in your classroom? If Yes, how often?
2. Do you believe using SRSs is a good way to increase student participation during a lesson? If yes, please provide your reasons for why you think it is a good way to increase student participation. If no, please explain why you don’t think it is a good way to increase student participation.

Post-lesson:

1. What was your initial reaction to the lesson that incorporates the SRSs?
2. Do you think that the SRSs impacted the level of participation during the lesson? If yes, please explain how you think it impacted the lesson. If no, please explain why you think it did not impact the lesson.
3. Do you think the use of the SRSs increase engagement/enjoyment of your students during the lesson? If yes, then please explain why you think it increases engagement/enjoyment. If no, then please explain why you think it did not increase engagement/enjoyment.
4. Circle the method below that you believe had the most impact on your students during the lesson.

Instant polling Short quiz word seed

1. In what ways did you use the instant feedback from your students during the lesson?
2. Did you think the SRSs had an impact on your students’ achievement? If yes, then please explain why you think there was an impact. If no, then please explain why you do not think there was an impact.

**Student Survey**

Pre-lesson:

1. Do you use the Student Response System (Clickers) in your classroom? If yes, then how often?
2. Do you believe using Clickers is a good way to increase your participation during a lesson? If yes, please provide your reasons for why you think it is a good way to increase your participation. If no, please explain why you don’t think it is a good way to increase your participation.

Post-lesson:

1. Do you feel the Clickers impacted your level of participation during the lesson? If yes, please explain how you think it impacted your participation. If no, please explain why you think it did not impact your participation.
2. Do you think the use of clickers increased your enjoyment during the lesson? If yes, please explain how you think it increased your enjoyment. If no, please explain why you think it did not increase your enjoyment.
3. Circle the method below that you enjoyed the most during the lesson.

Instant polling Short quiz word seed

1. Do you think the use of clickers increased your understanding of the lesson? If yes, please explain how you think it increased your understanding of the lesson. If no, please explain why you think it did not increase your understanding of the lesson.
2. Do you think you will do better on the test as a result of using the clickers? If yes, please explain why you think the clickers helped you prepare for the test. If no, please explain why you think the clickers did not help you prepare for the test.

**Lesson Observation**

Directions: Observe the classroom during the lesson; comment, in detail, on how both students and teachers respond during the lesson in the following main categories. Use the last area to add any other observations during the lesson.

1. Observations of student participation:
2. Observations of student engagement/enjoyment:
3. Observation of SRSs methods used during the lesson and impact on students:
4. Observation of teacher feedback from SRSs and what it led into during the lesson:
5. Other observations: