

Analysis of a Technology Innovation in the Classroom Applying Technology to a Problem of Practice in Education

Overview	Name of reviewer: Jennifer Waters The technological and educational innovation is Senteo Clickers. <i>Product information can be found at this link.</i>	
Problem of Practice	The educational needs that I am addressing are student engagement during a lesson and providing immediate feedback. Success will be measured by a graph showing participation rate to academic achievement.	
Setting These are the characteristics needed for each aspect of the project.	<u>Teacher-</u>	The teacher involved with this technology must be able to use the software properly and input student information. They will need to know how to export results into excel. As the facilitator, it is important to be open and adaptable to the technology.
	<u>Learner-</u>	The learners, or students, need to be both interested and motivated to use the technology. It is also imperative that they know established policies for proper usage.
	<u>Subject Matter-</u>	The subject matter must be formatted into questions with either true/false, multiple choice, numeric value, or multiple response answer settings.
	<u>Setting-</u>	An effective setting for this technology is any classroom with a computer that is connected to a projector. Also, a screen will be needed to see what is being projected.
Technology Integrated Solution	<u>Summary</u>	<p>For many teachers, when a question is asked to the classroom there is a silence where one could here a cricket chirp. This is a valid problem in a learning environment. Without student engagement, a teacher can not check for understanding and provide necessary feedback. Students today need more than just learning by listening. They need us to provide them with tools that can motivate them to participate. Technology such as Senteo clickers can be that motivation and a form of communication from student to teacher. With this communication, teachers can provide feedback based on the learned content.</p> <p><i>To see a demo click on the link.</i></p>

	<p><u>Rationale</u></p>	<p>Education is now serving a generation that Prensky calls digital natives. These are students who have grown up surrounded by technology and using computers, cell phones, and video games as second nature. In order for classrooms and educators to keep up in the 21st century we need to start adapting our techniques to the needs of this generation. Senteo clickers are just a digital tool that can be implemented in the classroom. Prensky makes the statement, “digital tools are like extensions of students’ brains.” We need to use these extensions as methods to inspire motivation and engagement in the classroom. (Prensky, 2006)</p> <p>In order for students to be inspired to participate we must provide them with opportunities. “Teachers must practice putting engagement before content when teaching.” Teachers can practice this by implementing a simple technology such as the Senteo clickers. This strategy gives each student a way to communicate their knowledge to the teacher through a cell phone like interface. The software notifies the teacher when students have answered the question. This awareness can trigger an opportunity for teachers to provide more individualized attention to students who need more time. Requiring an answer from each student results in a 100% class participation rate. This is the most efficient way of checking for understanding during a lesson. (Prensky, 2006)</p> <p>Checking for understanding is a key element of any lesson. Being able to do this in a timely manner is what Marzano focuses on in his book, <i>Classroom Instruction that Works</i>. When a Senteo assessment is complete, results can be pulled up immediately. Each question will have a visible graph stating the response results from the entire class. Information such as number of students that choose a particular answer is available. The power of these results is unlimited. This is a golden opportunity to discuss and provide specific feedback for each question. Marzano emphasizes the importance of explanations to why a particular answer is correct. In addition, “feedback given immediately after a test-like situation is best.” Students seeing their results immediately and informed on the rationale of their answers is the most effective way to communicate with the students. With all of these positive reinforcements to their learning, increases in achievement are inevitable. (Marzano, 2001)</p>
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	<p><u>Logistics of the Solution</u></p>	<p>The Senteo clickers will be implemented into weekly lessons in the classroom. Weekly lessons seem more reasonable due to the amount of curriculum taught in a short period of time. The Senteo assessments will be 10-15 questions resulting in 10 minutes for assessment and 10 minutes of feedback and discussion. Teachers will be using the actual program while students are using the clickers individually at their desks.</p> <p>Several resources are required for the development and implementation of this technology. Development will include creating 10-15 questions based on the weekly curriculum. Answers will need to be developed for each question. Student information such as ID number and name must be inputted into the Senteo teacher software. Each student must have their own clicker they can use during the lesson. The teacher must have access to a computer with both Senteo and Notebook software.</p> <p>Implementation will also take several resources for correct use of the Senteos. Students will need to be aware of the usage policies of Senteos in the classroom. Students will need an option for writing down work or questions throughout the assessment. The teacher needs to be familiar with the functions of the software and how to show results. It is also recommended to have additional batteries available in case of clickers dying in the middle of an assessment.</p> <p>Finally, an important task to implement technology successfully is through the use of scaffolding. Brophy discusses the importance of preparing students for a new method, guiding them through the process, and providing time for accurate feedback and discussion at the end. Without these components, any method like the Senteo clicker will not be as effective.</p>
<p>Benefits of Solution</p>	<p>The benefit of using the Senteo clickers is the instant engagement from the students in the class. The clickers are set up very similar to cell phones; thus, students have an instant familiarity with the technology. This was evident based on student feedback given and the speed of which answers were inputted during the assessment. With the software, you are able to see the length of time it takes each student to answer a question. Also, you can see the names of students you are still waiting on before you move to the next question. The accountability is on the student to participate since it is visible when they do not.</p> <p>Another benefit is the instant feedback that is given to both the</p>	

	<p>teacher and the student. When the assessment is finished, the individual clickers inform the students of which questions were answered correctly. For the teacher, the software provides a graph for each question based on how many students choose a particular answer. This is an essential way to check for understanding and common errors. These graphs can be used as a catapult for discussion and reflection after the assessment. Students are able to receive feedback on common misconceptions and why certain answers are more correct than others. As students become aware of their mistakes, they are able to dialogue on ways to correct their work. Overall, the results showed a rise in achievement.</p> <p>I believe that any teacher with the proper training of the software for both Senteo and Notebook could achieve the same results. However, it is also imperative that they scaffold the activity as Brophy suggests. Changing the technique or strategy for student engagement does not mean a different approach to introducing it. Even though students may be more familiar with technology, it is important that they respect it in an educational setting.</p> <p>It is also imperative to note that if the teacher does not have the requirements for the technology or provide policies then the results and benefits will not happen. This technology innovation is not for educators who are uncomfortable with students having control in the lesson or fear of trying something new. The point of using response systems is allowing students to become active participants in the classroom though the control of their own clicker. If teachers are uncomfortable giving up their power, the innovation is useless.</p>
Implications	<p>When technological innovations are applied to the classroom many factors are necessary to make it effective. Teachers must be properly trained in the technology that is being implemented. Updated software and hardware are necessary for proper functionality. Last, scaffolding of the new strategy is imperative for student awareness of policies and proper usage. In conclusion, implementing technology is collaboration between information technology personnel, teachers, and students.</p> <p>I will be implementing a variation of this project in my own setting in two different ways. First, I will try the weekly assessment format for checking for understanding as explained in this project. I will be incorporating questions that include multiple choices, true/false, and numeric values. Second, after trying the first method, I am going to try to do daily assessments as exit tickets. These would consist of 2-3 quick questions as formative ways to check for understanding. Obviously, much planning and scaffolding will take place to transition students to a daily routine. I am excited to try out my new innovation and gather my results.</p>

References

Marzano, R.J., Pickerine, D.J., & Pollock, J.E. (2001). *Classroom instruction that works*. Alexandria, VA: Association for Supervision and Curriculum Development.

Brophy, J. (1999). *Teaching*.

Prensky, M. (2006) *Listen to the Natives*. Educational Leadership. December 2005/January 2006.