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Assessment Tool or Edutainment Toy: Using Clickers for Library Instruction Assessment

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Abstract

The use of Clickers as a tool for library instruction has been growing in popularity because library instructors view this technology as a mechanism to foster interactivity within library instruction sessions in order to increase overall student engagement. However, a newly emerging area of interest for library instructors is the use of Clickers as a tool for library instruction assessment. This paper posits some of the viewpoints of various instructors using Clickers including the viewpoints of library instructors. The central question considered in this paper is whether Clickers are an effective and feasible tool for library instruction assessment. This examination extends further in considering the value of Clicker systems against the value of traditional paper-based methods for library instruction assessment. An example of a substantial library instruction assessment initiative at the University of Nevada, Las Vegas Libraries is provided as a case for consideration of the current feasibility of Clicker systems for library instruction assessment. Additionally, differing configurations for Clicker systems are outlined as are various alternatives to Clickers currently available in the interest of presenting scalable options for library instructors.

Introduction

The use of Personal Response Systems (Clickers) for classroom instruction has been a subject of debate in the field of education. Many educators view these devices as a tool to foster interactivity in the classroom as well as a tool to measure student learning and comprehension. Others view these devices as a source of distraction for students that hinders their engagement in the classroom. The use of Clickers for classroom instruction requires financial resources as well as time and energy for instructors and students to learn how to use them. The time and money required to use Clickers in library instruction may not always prove feasible in cases where instructors have a very limited amount

of time with students already. However, Clickers have potential as an effective tool for measuring the achievement of student learning outcomes in library instruction, even if they are not the only tool or method available for doing so.

Scalable Options for Clickers

There exists a variety of vendors who supply Clicker systems as well as a variety of configuration models for Clicker systems. In regard to the configurations of Clicker systems, there are currently three major types of configurations that can be employed. The most common configuration is a classroom set whereby the students purchase or are provided the answer keypad devices while the instructor maintains responsibility for the classroom response receiver and the Clicker system software. This configuration appears to be the option most widely utilized by instructors but there is variation in regard to whether instructors opt to purchase a classroom set of response devices for their students to use or mandate that students purchase their own response devices. There also exists a configuration whereby response devices are entirely Web-based and use of a physical response receiver is not required. Such a system allows students to provide responses through a proprietary virtual response pad which eliminates the need for physical response devices. This option supports the utilization of Clickers in Web-based instruction which particularly benefits library instruction for students taking Distance Education courses. This option requires the purchase of individual licenses or an institutional site license to the virtual system. An example of this configuration can be seen with the TurningPoint system's ResponseWare Web model.¹ Additionally, there exists a configuration which is entirely based on physical response devices whereby an instructor has a master device which can poll students and receive responses from student devices. This option removes the need for access to the Internet as well as a projector for utilizing a Clicker systems thereby

allowing for use anywhere as opposed to within a classroom setting. An example of this configuration can be seen with the TurningPoint system's ResponseCard Anywhere model.²

Clickers versus Alternative Polling Methods

In his publication "Clickers or Flashcards: Is There Really a Difference," Nathaniel Lasry reports on the results of a comparison of Clickers versus Flashcards on student learning contending that Clickers do not provide any additional learning benefit to students.³ He further claims that Clickers are more beneficial for the teaching side than for learning side of education. Moreover, he provides examples of how Clickers add value to teaching from their ability to automatically record and archive student response data. However, he also acknowledges the cost Clicker use can potentially add for instructors stating that "the capital expense for the purchase of clickers and related hardware may not be available, and passing the expense on to the students may not be possible or desirable."⁴

Clickers are a popular method for polling students but there are other methods in addition to flashcards which are less costly. There are polling capabilities in a variety of Web-based tools which can be utilized in the classroom. A very simple approach would be to utilize blogs for polling such as WordPress, which has a polling feature. Another simple approach would be to utilize a Web-based survey tool for polling such as SurveyMonkey. Also, many of the classroom management software applications that are commonly used for library instruction include basic polling capabilities as well. SynchronEyes and DyKnow are but a few examples of such applications that include polling capabilities. Probably the most significant polling alternative which could substitute for Clicker use is a Web-based application called Poll Everywhere which can be used within and outside of PowerPoint and provides students the option to answer polling questions through text messaging or through the Poll Everywhere Web site.⁵ The significance of Poll Everywhere is that it is the first polling application allowing students to answer questions with their cell phones by text message.

Clickers as a Tool for Library Instruction Assessment

If the results reported by Nathaniel Lasry hold true, then Clickers cannot be shown to be a more effective instrument for aiding student learning but can be shown to add value in archiving student

response data. This latter function could potentially add significant value in the area of student learning assessment. As such, a key question emerges as to the value of Clickers as a tool for assessing library instruction. The expense consideration outlined by Nathaniel Lasry impacts library instructors especially as the opportunity they have for utilizing Clickers is significantly lower than instructors who have exposure to their students for an entire academic term. The relatively small window of opportunity for Clicker use within a very limited amount of library instruction sessions for individual courses makes the option of passing the expense for Clicker device purchases on to students rather unfeasible for library instructors. As such, libraries typically bear the expense of purchasing Clickers for use in library instruction. This greater-cost-and-less-use scenario positions libraries to have a greater need for considering the value added to library instruction from the use of Clickers against the costs.

In their publication "Clicking your way to library instructional assessment," Suzanne Julian and Kimball Benson focus on the value of Clickers for gathering assessment data.⁶ Interestingly, the authors acknowledge that their discovery of the value of Clickers for library instruction assessment was rather serendipitous noting that their original intention was to increase interaction and student engagement in library instruction sessions. The authors highlight the major benefits of using Clickers for library instruction offering that this technology allows for automatic tabulation of student responses which provides a means of instant assessment of class strengths and weaknesses as well as a means to analyze teaching effectiveness. While the authors report that their overall experience with using Clickers within library instruction was positive, they also caution that instructors need to carefully evaluate whether Clicker use adds to the quality of instruction noting that technology such as this can serve as a source of distraction for students. Concern over the extent of class time and student attention devoted to the use of Clickers is common for library instructors. An instance of this concern can be seen in the article "Interactivity in Library Presentations Using a Personal Response System," whereby Evelyne Corcos and Vivienne Monty acknowledge that this technology can require 15 minutes of setup time in a class session.⁷ However, similar to Suzanne Julian and Kimball Benson, the main contention for Evelyne Corcos and Vivienne Monty is that the

ability for instructors to tailor lessons to student needs via Clicker polling more than offsets the setup time that is taken away from class sessions.

Clicker-based Assessment versus Paper-based Assessment

In the ACRL Information Literacy Competency Standards for Higher Education, the section on Information Literacy and Assessment counsels that there are higher order and lower order thinking skills entailed in the learning outcomes and that "it is strongly suggested that assessment methods appropriate to the thinking skills associated with each outcome be identified as an integral part of the institution's implementation plan."⁸ A significant challenge to the effectiveness of using Clickers for library instruction assessment is whether the fixed response format of Clickers is appropriate for measuring higher order thinking skills. In his article "Use of Classroom 'Clickers' to Promote Acquisition of Advanced Reasoning Skills," Gregory DeBourgh posits the argument that Clickers support innovative learning activities which promote higher cognition critical thinking and reasoning skills.⁹ Although the Clicker system the author used supported only fixed response questions, the author contends that questions can be designed in a manner that elicits higher cognition reasoning skills. He further emphasizes that this sort of deliberate question design is the most important aspect of Clicker use for instructors. In his article "Clicker Sets as Learning Objects," Bergtrom similarly contends that Clickers foster the development of critical thinking skills by engaging students in questions that combine text, graphics, and audio.¹⁰ Furthermore, Bergstrom contends that Clickers cater to diverse learning styles as they support collaborative learning and problem-based learning. Much like Suzanne Julian and Kimball Benson, this author cautions instructors to devote significant time to the development of Clicker questions in order to ensure that the questions support the development of critical thinking skills and are used in a manner that contributes to the learning experience of students.

In her article "Creativity in Assessment of Library Instruction," Janet Williams outlines some alternative assessment methods to multiple choice which can be used for library instruction assessment and provides examples for how these alternative methods can be used for measuring specific ACRL Information Literacy Outcomes.¹¹ The alternative assessment questioning techniques

she outlines include selected response (rank order), constructed response, essay, and complex answers (task/problem based). The majority of the type of exercises the author highlights cannot be answered with a fixed response format common to Clickers. For instance, in discussing the constructed response format, the author provides examples of one to one matching questions and one to many matching questions which would be very difficult at best to design in a fixed response format. Moreover, the examples provided in this article of short answer and essay exercises would require an open response format as opposed to a fixed response format. Thus, the limited answering capabilities of Clickers give weight to the advantage of paper-based assessment in supporting flexibility and creativity in library instruction assessment.

Clicker-based Assessment versus Paper-based Assessment at the University of Nevada, Las Vegas Libraries

In fall 2007, UNLV Libraries began a pilot project to incorporate a short quiz assignment into the instruction sessions for a Communications 101 course in public speaking which all undergraduate students must complete to graduate. This quiz was designed by library instructors who have routinely conducted instruction sessions for this course. The quiz exercises were developed around key information literacy learning outcomes for the course which were agreed upon by a team of library instructors and the Public Speaking Course Director. Such learning outcomes include defining a speech topic research question, articulating keywords to use in a search, evaluating information sources for credibility, and identifying parts of a citation. The paper quiz was administered by in instruction class sessions lasting one hour and fifteen minutes. The paper quiz had evolved to include exercises with a variety of question response formats including fill in the blank exercises, matching exercises, and short answer exercises. Not one question was in a fixed response format such as true/false or multiple choice and as such, the quiz did not lend itself well for administering via Clickers. Rather, the paper-based quiz assignments were to be completed in the instruction class session and turned into the course instructor for that section. The term instructor of each section was responsible for grading the quiz assignment rather than the library instructor. However, the format of questioning developed for this quiz assignment required extensive time for

grading as compared to a fixed response type of format. The extent of time required for grading the quiz was greater than originally anticipated which has contributed to a significant change in fall 2008 whereby responsibility for grading is placed with the library instructor for each section. The term instructors and the Public Speaking Course Director receive aggregate results for each class from the library instructors as opposed to grading individual student quizzes. The time intensiveness for grading these quiz assignments could be significantly reduced with the use of Clickers since responses can be automatically tabulated and archived for analysis and grading.

It would appear at first glance to make sense for the library instructors to collaborate with the Public Speaking Course Director in transposing this library quiz assignment to a Clicker format. Toward this end, the learning curve for the Public Speaking Course Director would be small as he has already become very familiar and knowledgeable about Clickers, having evaluated various Clicker models as part of a campus working group to select a campus standard model. However, this option would only become feasible if Clickers fully supported the type of questioning utilized for the quiz assignment. The feasibility of this option has seemed unlikely as Clicker Systems have traditionally supported fixed-response questioning formats. The limited questing capabilities of Clickers presents the library instructors with the significant challenge of designing fixed response questions which elicit critical thinking and reasoning skills from students. As was alluded to earlier in this paper, many instructors utilizing Clickers in the classroom report that the design of questions is the most significant challenge for using this technology effectively. However, the consensus of library instructors is that while it may be challenging, it is possible to design questions in a fixed response format that elicit critical thinking and reasoning skills. As such, it is difficult to speculate as to whether Clicker Systems will evolve to accommodate questioning in multiple formats. However, there currently exists evidence that at least some Clicker systems are striving to accommodate a wider variety of questioning formats. The most prominent example is the release by Turning Technologies of a new add on feature to the TurningPoint Clicker system called TestingPoint which is a Microsoft Word application allowing for a wider variety of question formats to be utilized.¹² Turning Technologies claims that their

TestingPoint application can support short answer and essay questioning as well as fill in the blank and matching questioning with the use of the TurningPoint Clicker system. Such a development provides a glimmer of hope that Clicker systems may evolve to support a wider variety of questioning formats in the near future which would significantly enhance the benefit Clicker systems could provide for library instruction assessment.

Conclusion

The capacity of Clickers to add value to the assessment of student learning is likely to become a major differentiator against its polling alternatives as such alternatives already serve as effective substitutes for the basic functions of increasing interactivity and engagement in the classroom. What remains to be observed is the extent to which Clickers and their alternatives will evolve to support a variety of assessment techniques beyond those that utilize a fixed response format. This is likely to become an important consideration for library instructors who widely advocate that assessment methods should not be designed around assessment tools but should remain the driving force behind the selection of assessment tools. Thus far, library instructors have designed critical thinking based questions effectively in Clicker formats but the limited response options of current Clicker systems may serve as a deterrent to those who are committed to using alternative assessment techniques to fixed response questioning. However, some Clicker systems now claim to be able to support a variety of assessment techniques and this trend may continue to gain momentum in the Clicker marketplace.

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Endnotes

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