USING INNOVATIVE TECHNOLOGY TO IMPROVE ONLINE LEARNING ASSESSMENT: AN EXPLORATORY STUDY

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Abstract

Innovative audio technologies offer ways to improve online learning assessment of student work. This paper reports methods, insights, and empirical evidence of the perceived benefits of using Jing to improve assessment in the online learning environment. The findings also exposed several practical difficulties and challenges in using this innovative technology to enhance the consistency, availability, and quality of online instructor support. Additional uses of Jing are also explored and discussed to help online instructors add audio learning tools efficiently and effectively to their teaching toolkit. For the online marketing educator, this exploratory study introduces a tool to enhance web facilitated curriculum.

Introduction

Within the constructivist framework of online education, the feedback process is considered a key element in instructors' roles because it can promote the regulation of learning (Espasa & Meneses, 2010). At some point in every academician's career, one wonders how much attention students pay to written feedback on papers. Am I writing too much? Am I writing too little? Is the student using the feedback to improve their next assignment? And of course, the BIG question we all ask ourselves: "Why I am writing more comments on the paper than what the student wrote in the first place?" The use of classroom management systems, such as Blackboard, that allow paperless submissions that can be graded by the instructor in word processing programs, adds additional questions concerning Word Comments.

Criticism has long been made concerning online learning relying too heavily on text while providing minimal opportunities to learn from visual, audio, and hands-on activities (Bonk & Zhang, 2008). As reported by Muir (2001), students learn 10 percent of what they read, 20 percent of what they hear, and 50 percent of what they see and hear.

With the advancement of Internet technologies, many methods of content delivery and online communication beyond simple text are now a reality. Listening to video streamed lectures and educational podcasts are popular trends favored by auditory online learners (Hartsell & Yuen, 2006; Copley, 2007).

Very recently, online instructors started experimenting with innovative audio technologies for improving online grading and assessment of student work. However, few studies have reported on the effect of auditory versus written assessment of student work with empirical evidence. Furthermore, there has been little empirical research published that focuses on student perceptions of feedback via such new technologies. This paper thus aims to begin to fill the research gap by providing insights and evidence of the perceived benefits of using an innovative auditory assessment - Jing - to improve student success in online learning environments.

Research Methodology

In designing an effective approach to provide better and/or additional feedback to online students, the researchers looked at three fundamental issues:

1. How to increase instructor presence and interactivity
2. How to provide a higher degree of grading clarity
3. How to increase student focus and/or attention to feedback

Instructor Presence and Interactivity

As pointed out by Sheridan and Kelly (2010), to highly engage in and ensure a strong presence in the online course, instructors need to provide students with in-depth feedback for growth and development.

Grading Clarity

According to Klass (2003), auditory components bring courses alive by allowing online learners to use their auditory senses to comprehend complex concepts and procedures that are difficult to explain with only text and graphics.

Student Focus and/or Attention to Feedback

Empirical evidence (Copley, 2007; Oishi, 2007) indicates that listening to the instructor can easily grab student attention and is generally considered easier, faster, more interactive, and less cognitive-effort-consuming than reading and comprehending long written text. As illustrated in Figure 1, innovative communication systems and technology can improve online learning efficiency and effectiveness by providing tailored and customized information and feedback to the students, offering real-time learning support and consultation; facilitating flexible self-study at students' own pace; and enhancing the consistency, availability, and quality of instructor
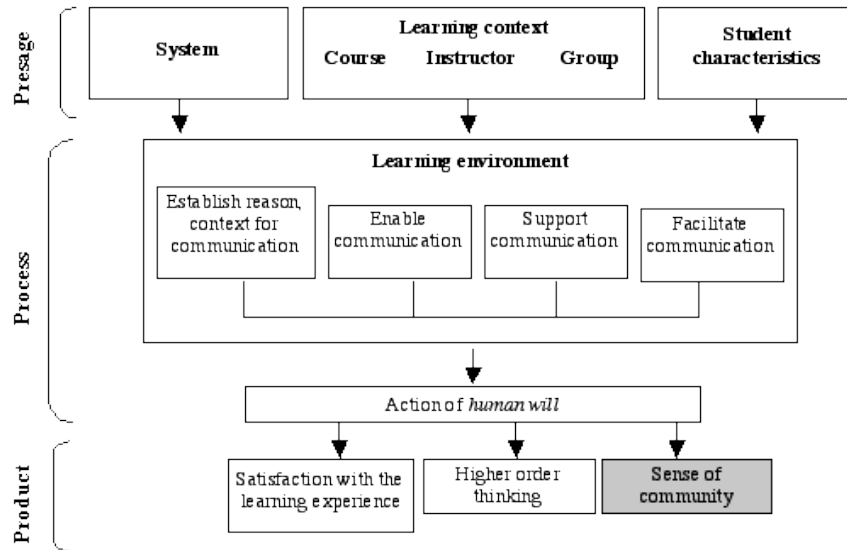
Figure 1: Online Learning Environment and Supporting Community Development (Adapted from Brook & Oliver, 2003)

support to the students throughout the learning cycle. However, as the intended technology use aims to improve student learning in the online environment, the question of how the students would perceive the proposed technology use arises.

Because of its ease of use, no (or low) cost, 5-minute time limit, and built-in privacy safeguards, Jing was chosen as the audio technology to use in a Business Communication and Report Writing course. Upon completion of the course, data were collected through four fundamental questions on a survey addressing the opinions of the proposed Jing functions utilizing a standard Likert scale (1-5). Students were asked to select one of the following responses: 5 (Strongly agree), 4 (Agree), 3 (Neutral), 2 (Disagree), and 1 (Strongly disagree). The survey was designed to address the key questions to gain insights on the attitudes of the students. Additional inquiry was embedded in the survey to capture qualitative data for further analysis and discussions. Table 1 shows the operationalization of the three fundamental issues discussed above *(i.e., instructor presence and interactivity, grading clarity, and student focus and/or attention to feedback)* and corresponding sample statements included in the survey.

Results and Discussions

Among the final respondents, 19 were male (40 percent) and 28 were female (60 percent). Of the respondents, 25 were junior status (53 percent), 19 were senior status (40 percent), and 3 (6 percent) were post-baccalaureate students. Most of the respondents were traditional

Table 1: Operationalization of the Three Fundamental Issues (Survey Questions)

Survey Questions	5 (Strongly agree)	4 (Agree)	3 (Neutral)	2 (Disagree)	1 (Strongly disagree)
Do you feel using Jing to provide you feedback on your letters increased instructor presence and interactivity?					
Do you feel using Jing gave you a higher degree of clarity in my feedback to you?					
Do you feel you paid more attention, and were more focused on feedback, given to you by Jing versus written comments?					
Overall, do you feel the letters returned to you using Jing versus written comments provided a better learning experience for you?					

undergraduate students and were in their twenties. Participants are roughly comparable to the overall demographics of the Central Washington University undergraduate students. Almost all of the respondents reported that they had prior online learning experience.

The participants were asked to assess the grading feedback they were receiving via Jing in the Business Communication and Report Writing course during the last week of the course. The results of responses to the survey questions are summarized and presented below in Table 2. The survey questions utilized a standard 5-point Likert-scale with Strongly Agree = 5 and Strongly Disagree = 1.

 In spite of the exploratory nature of the research, preliminary analysis of the results from the survey has revealed many interesting implications and suggestions. Some of the findings echoed previous related studies (Klass, 2003; Hartsell & Yuen, 2006; Copley, 2007; Oishi,

Table 2: Results of Responses to the Survey Questions

Survey Questions (Strongly Agree = 5 and Strongly Disagree = 1)	Mean Score	St. D.
Do you feel using Jing to provide you feedback on your letters increased instructor presence and interactivity?	4.10	.875
Do you feel using Jing gave you a higher degree of clarity in my feedback to you?	3.84	1.067
Do you feel you paid more attention, and were more focused on feedback, given to you by Jing versus written comments?	4.05	.911
Overall, do you feel the letters returned to you using Jing versus written comments provided a better learning experience for you?	4.00	.816

2007; Bonk & Zhang, 2008) and should be considered essential guidelines for designing interactive and effective online teaching and learning assessment. Some others turn out to be rather counterintuitive or provocative and thus provided valuable insights for further investigation.

Specifically, returns of Statement 1 regarding the first fundamental issue, instructor presence and interactivity, show that students generally agree on the benefits of strong instructor presence via using Jing to provide interactive feedback. Detailed information from survey comments suggest that the instructor's voice also "helped to humanize the class as opposed to simply writing down words on a page." In that sense, audio feedback via Jing allows students to feel that the instructor is a real person who is communicating with them rather than a "roboteacher" remotely in charge of the class. Therefore, the observation is consistent as expected whereby Jing technology can increase instructor presence and interactivity in an online learning environment. However, caution should be made that too much instructor presence can actually impede students from taking more responsibility for their learning, prevent critical thinking, and downplay the value of student-to-student interaction (Peery & Veneruso, 2012). It's a balancing act that instructors need to play when trying to increase their presence through the use of Jing, while at the same time not overwhelm the students and impede them from taking more responsibility in online learning.

In comparison, returns of Statement 2 about feedback clarity turn out to be slightly positive (scored at 3.84 with 3 being neutral). Comments from the survey participants indicate that possible reasons may be related to students' unfamiliarity of receiving instructor feedback in this new audio format and/or unfamiliarity of using the technology per se. Accuracy, relevance, and confidentiality in receiving this personalized Jing feedback online might also be concerns. It's also reasonable to infer that these observations might be partially due to prior bad impressions from unsuccessful video chat or virtual communication cases. With proper implementation and utilization of the technology on the instructor side, together with clear instructions and tutorials on using the technology given to students at the beginning of the term, such audio grading feedback and comments can facilitate online students in identifying areas that need improvement effectively and efficiently and eventually enhance their satisfaction and learning outcomes.

Data generated from Statement 3 indicate apparent convergent trends. Students show great appreciation of receiving Jing feedback and generally paid more attention and were more focused on feedback. They often value and attend to this personalized audio feedback more than written feedback. Informal interviews with students afterwards confirmed that many students tend to neglect lengthy written comments and lose interest or focus after reading lines of written comments. Some may not even read the comments at all. Such observations are generally consistent with what has been reported in the literature (Weavera, 2006; Walker, 2009), indicating that written feedback, if it is too general or vague, lacks guidance, focuses on the negative, or is unrelated to assessment criteria, is considered unhelpful to improve student learning. Such themes actually apply to Jing feedback as well: instructors need to provide audio feedback set in the context of assessment criteria and learning outcomes and ensure that it is clear and timely in order to greatly improve the value of feedback.

The researchers encountered fairly consistent opinions regarding the overall satisfaction from Statement 4. Most participants felt that getting timely feedback using Jing versus written comments provided an overall better learning experience. Despite the fact that it was a first time experience for many students receiving instructor feedback in audio format, they liked the experience in general and felt that the Jing feedback was much more concise and easier to assimilate than the general written notes. Data from the accompanying comments also suggested that the students felt the Jing feedback was less confusing than the written comments commonly used in an online learning environment. The results are generally consistent and echoed findings from previous works. To offer timely, personalized, and

interactive feedback to students is a critical advantage of applying innovative communication systems and technology in online learning systems.

Finally, the instructor of these courses reported an important phenomenon in using Jing. When I compared my written comments to my verbal comments I noticed that my written comments focused mainly on the negative – what the student was doing incorrectly. I might write "Excellent" or "Good" next to a sentence or paragraph, but I never indicated exactly WHAT was excellent or good. In using Jing, I instinctively began my audio by discussing with the student the positive aspects of his/her writing. Once I told the student what he/she had done well – and encouraged him/her to continue with this practice – I then focused on what needed to be corrected. However, even my corrections were delivered better verbally than in writing. Instead of telling a student his/her sentence was a run-on sentence or his/her detail paragraph needed to be organized differently, I could discuss with the student HOW to fix the problem. Writing out correct sentences or paragraphs would be too arduous; talking to the students helped them identify a possible review process that would help build critical thinking skills (Lori Braunstein, personal conversation, 2011).

While this exploratory study might not provide empirical proof that audio comments provided to students should be continued, anecdotally, based on student comments, the researchers will continue to use auditory feedback for student work, in addition to exploring other uses of Jing in the online classroom. Following are some representative student comments that encapsulate the general feedback from students:

"The use of Jing to provide verbal feedback was much more helpful than a few bits of writing on my papers. Written comments can be hard to read and harder to interpret than oral comments. By receiving a thorough explanation of what I did well or poorly, I was able to improve my writing on future papers, and in general. Hearing the instructor's voice also helped to humanize the class, as opposed to simply words on a page. It also helped being able to see the instructor's mouse show what she was talking about."

"This was my first time taking a class in which the professor's response was sent in an audio format. The experience was excellent. Not only was it engaging to hear the professor's voice . . . but the feedback was much more concise and easier to assimilate than the general written notes. It took a lot of confusion out of the online platform."

Concluding Remarks

Encouraging interaction in online courses in education has long been an interesting research topic (Nandi, Hamilton, & Harland, 2012). Indeed, not just online marketing educators, but all online educators depend on healthy and vibrant communication between and among students. Jing is one free tool to help increase instructor presence and interactivity, provide a higher degree of grading clarity, and increase student focus and/or attention to feedback.

Future Research

This exploratory study will lead educators to additional research questions. How can Jing and other screen capturing software be integrated and used in larger classes – 100 percent online, hybrid, and traditional face-to-face classes? Will Jing be effective in lab classes? How would educators and students benefit from using Jing in small group presentations? How effective is Jing in classes with multiple iterations of instructor-student revisions and feedback (e.g. marketing plans, business plans, writing reports)? How quickly will students accept and integrate this tool as they do with other online tools? What are the privacy issues with Jing? Studies also looking at the long term effectiveness of Jing would also be interesting and useful.

Additional Uses of Jing

While this topic will be used to engage Marketing Educators' Association members, some suggestions for additional uses of Jing might include integrating Jing for auditory presentations by students, more robust student portfolios, and instructor evaluation of non-written student work (e.g., pieces of artwork). Jing is ideal for online, two-way communications. Requiring students to use Jing in their student projects will not only encourage deeper interaction with the teacher but also the opportunity for improving soft skills in speaking and oral presentations. For accreditation, many schools require students to develop portfolios. Why not integrate Jing to supplement the papers and assignments, providing both a visual and auditory representation of the learning activities in a student's program of study? Many schools also require creative works for assessing learning and skills, with these goals carrying over to online courses. Jing is ideal for non-written types of assessments such as art, science, and retail merchandising.

Disadvantages of Using Jing

With any new software, there are some challenges. The researchers identified three possible disadvantages of Jing; all three are easily surmountable. The learning curve of using Jing

requires 2-3 hours for downloading and practicing. If the tool will be used for student assignments or presentations, Jing can be used to illustrate the directions. More problematic is the increased grading time and effort to integrate Jing into the curriculum. It can take up to 50 percent more time to provide both written and audio feedback to students. Finally, additional security and privacy issues need to be addressed with the university. While Jing provides security and privacy, it is a third-party software that can be vulnerable to attacks.

References available upon request