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A Technologically Based Approach to Providing Quality Feedback to Students: A Paradigm Shift for the 21st Century

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Introduction

The purpose of this article is to provide busy professors, teaching in the 21st century a technologically based approach to providing quality feedback to students. This innovative and effective, yet relatively simple option will result in a pedagogical paradigm shift for the 21st Century. Technology is ubiquitous in higher education. Students use technology to apply to a university or college, enroll in courses, sign up for a campus email address, apply for financial aid, purchase books, and pay tuition and fees. Likewise, professors use technology to submit the schedule of courses they will be teaching in the upcoming semester, correspond with colleagues and students via email, receive direct deposit. This technology based pragmatic paradigm shift by students and professors has resulted in a much faster, simpler and more efficient process of the mundane functions of institutions of higher education. In the same manner, a technology based pedagogical paradigm shift for professors providing quality feedback to students will result in a much faster, simpler and more efficient process.

As revealed in the next section of this article, a review of the literature has demonstrated the importance of providing timely, constructive and detailed feedback to students on their assignments.

Importance of Quality Feedback

This article will begin with a focus on the importance of providing quality feedback. Faculty providing constructive and detailed feedback serves as an important component for effective student learning and is beneficial towards student achievement (Debuse, Lawley, & Shibl, 2007; Higgins, Hartley, & Skelton, 2002). According to Wolsey (2008), the desired outcome of feedback is to provide communication between instructor and student, which promotes learning. Quality feedback is defined as providing students with clear assessment criteria that is not only timely, but encourages further learning (Brown & Glover, 2006).

Poulos and Mahoney (2007) found that feedback served as the most significant component for first-year university students in enhancing their understanding of required standards. Wolsey (2008) further concluded that quality feedback serves as an important instructional factor toward promoting better written work. Sufficient feedback is necessary in order for students to monitor their learning progress and performance (Debuse et al., 2007), further enhancing their understanding of their strengths and weaknesses. Without feedback from instructors, students are likely to become less motivated towards learning (Pepper & Pathak, 2008). Furthermore, increasing feedback explicitness and frequency facilitates the perception among students that grading procedures are fair and consistent. Instructors who have difficulty dealing with the subjective nature of grading further benefit from the feedback that they offer to their students. Students that are provided with insufficient feedback and minimal interaction from instructors are less likely to encounter opportunities for further intellectual growth (Summerville & Johnson, 2006).

Students value and appreciate quality feedback due to the interaction that they potentially receive from their instructors (Wolsey, 2008). While feedback plays an important role towards learning, students are often unsatisfied with the quality of feedback that they receive from instructors (Holmes & Papageourgiou, 2009). Holmes and Papageorgiou concluded from interviewing tourism management students that the quality of feedback received by instructors was rated lower than any other aspect of their educational experiences. According to the United Kingdom's 2007 National Student Satisfaction Survey (NSSS), feedback was ranked satisfactory by only 62% of students from all subject areas (Higher Education Funding Council for England, 2007; as cited in Holmes & Papageorgiou). Practices must be improved (Holmes & Papageorgiou), as instructional feedback is often vague, non-specific (Debuse et al., 2007; Higgins et al., 2002), inconsistent and infrequent (Holmes & Smith, 2003). The ability for faculty within higher education to provide quality feedback in a timely manner has become a challenge due to larger class sizes and increased workloads (Debuse et al.), which has resulted in many instructors reducing the frequency of assignments (Gibbs & Simpson, 2004).

Feedback should positively impact student achievement (Higgins et al., 2002; Debuse et al., 2007). Feedback should further reveal to students how to gage discrepancies between current and expected performance (Wolsey, 2008) by providing them with clear assessment criteria (Brown & Glover; as cited in Holmes & Papageourgiou, 2009). Furthermore, feedback should be scheduled to where students have sufficient time to ask for clarification in order to understand their mistakes and improve upon their performance (Holmes & Papageorgiou). Simply providing generic feedback is not beneficial to students as dialogue should be personalized (Debuse et al., 2007), informative and detailed (James, McInnis & Delvin, 2002). Instructors should provide feedback to students that clearly links input to specific criteria in a positive manner rather than simply highlighting errors through general and ambiguous dialogue (Wolsey, 2008).

Feedback is most effective when delivered frequently (Dennen, 2005) and in a timely manner (Debuse, Lawley, & Shibi, 2007; Holmes & Papageorgiou, 2009; Pepper & Pathak, 2008; Wosley, 2008). Holmes and Papageorgiou concluded that the frequency of providing feedback is actually more important than the quality of feedback. Frequent feedback also enhances the ability of students to re-assess their performance and study patterns (Pepper & Pathak) as well as to provide opportunities to resubmit work (Black, Harrison, Lee, Marshall, & William, 2003). Butler, Pyzdrowski, Goodykoontz, & Walker (2008) concluded from measuring the impact of feedback toward pre-calculus university students that those who received immediate feedback obtained higher grades compared to individuals who did not receive immediate feedback.

Providing feedback in a timely manner allows students to utilize information for future assignments and to focus on content to be learned rather than just grades (Holmes & Papageorgiou, 2009; MacLellan, 2001). Ramsden (2003) further concluded that grades often distract students from focusing on the content of instructor feedback. According to Butler (1988), providing assignment feedback through quality comments only, absence of grades, is the most effective way to for instructors to provide feedback.

Students prefer feedback that supports learning (Dennen, 2005) and is embedded throughout the body of their work (Wolsey, 2004). Additionally, understanding the criteria for receiving feedback is also valued by students (O'Donovan, Price, & Rust, 2004). Brown and Glover (2006) concluded that students found feedback to be most beneficial in written form, which allowed them to more effectively

comprehend input from their instructors.

Traditionally, students have received interaction and feedback in the form of returned handwritten instructor comments, telephone calls, face-to-face meetings and emails. The paradigm shift towards online instruction has created new avenues towards providing feedback to students. Student experiences in taking online courses, which includes their sense of connectedness, are likely enhanced through the quality of feedback provided by their instructor (Wolsey, 2008). Due to asynchronous nature of many online learning environments, instructors must increase their efforts in making feedback beneficial to students. Teaching online requires a faculty member to think differently about teaching and to learn a host of new technological skills, which include innovative approaches toward delivering feedback (Fish & Wickersham, 2009). Most online environments provide student asynchronous feedback through threaded discussion board forums and through the utilization of Microsoft Word track changes.

Introducing Jing

Although professors are considered to be content experts, most are not technology experts. This technology gap poses a problem for professors who want to provide quality feedback to their 21st century students who expect their teachers to be using the latest technology (Finkelstein, 2006). For this reason a meaningful solution must be provided to help instructors bridge the technological gap. One such solution is the software technology program named Jing. Jing is a user friendly, good quality, well-supported software technology. Jing allows instructors to provide both audio and visual feedback to assignments electronically through screen capture. This type of feedback is especially effective for instructors teaching an online or web-enhanced course. However, those teaching in a traditional classroom may also find this to be an effective approach.

The most valuable component of Jing is that it has a low learning curve. Jing is free and can be downloaded at http://www.jingproject.com/. Both Windows and Mac versions are available and download rather quickly and are easy to install. Helpful tutorials are also provided on the website. Jing allows instructors to record both screen captures and full-motion videos from a computer screen. This process is very intuitive and after a little practice can be mastered. When files are saved in Jing, the default format is Shockwave format (SWF). An SWF file is considerably smaller than a Moving Pictures Expert Group (MP4) file. SWF files are viewed using adobe flash player, which is built into most Internet web browsers, so instructors and students do no need to download a program to view these files. The Jing Pro version allows users to save files as MP4. An MP4 file is better for capturing streaming images on a computer screen, such as movie clips and images captured with a web cam. The reason for this is because MP4 files do not drop frames, unlike the SWF format. An MP4 file is much larger than an SWF file. So the rule of thumb is when you perform a screen capture without streaming video, select the SWF video format in the preferences section of Jing. On the other hand, select the MP4 video format in the preferences section of Jing when you wish to capture streaming video on your computer screen. Please note the MP4 video format is only an option with the Jing Pro version. Once a video has been captured in Jing Pro using the MP4 video format instructors are given the choice to upload their full-motion video captures straight to their YouTube account. These MP4 files may also be uploaded to other Internet sharing sites or embedded in presentations such as PowerPoint or Keynote. Jing Pro also provides instructors the option to reduce video file sizes for faster sharing. The Jing logos and links can be stripped from videos for a more professional looking presentation. Professors who

use Mac computers have the option of giving personality to their videos by providing a video introduction to their presentation.

Incorporating Technology through Jing

How does all of this discussion concerning SWF and MP4 video format apply to providing quality feedback to students? A solid understanding of the purposes of these two video formats provides the instructor with the knowledge of the most appropriate format to use for the desired purpose. For the purpose of providing feedback on student assignments, the SWF video format is the best option. SWF files are usually small enough to be attached to an email message or posted in an online course dropbox. The size of the SWF file depends on the size of the screen being captured. Jing provides the user with the ability to size and resize the screen capture. After the size of the screen capture has been determined the user has two options in Jing.

The first option is to simply capture an image of the screen as a picture. For example, an instructor may capture an image of a page of a student's document on which to make some comments or highlight a section for emphasis. The image is captured and opens up in a Jing editor. The Jing editor has some limited, but useful applications for marking up a screen capture to draw the attention of the reader to a specific section. A text comment box is one of the applications where comments or suggestions can be made on the screen capture image. Arrows and highlight boxes with choice of color from a color palette are two of the other very useful applications. The screen capture image should be saved with a unique name and saved in a folder so that it may be easily retrieved for insertion as an email attachment or pasted into a presentation document, such Microsoft PowerPoint of Keynote for the Mac. The default file extension of Jing image captures is Portable Networks Graphics (PNG). The PNG format is a reliable and compatible file format that can be opened on Windows and Mac computers without an additional software purchase. Once the student receives the file as an attachment the student should be able to open the attachment to view the instructor comments and/or highlighted features.

The second option available for the instructor to select after the screen size has been determined using Jing is to capture the screen image as a video with the SWF format. The video capture feature has a five- minute time limit. The five-minute time limit has not been an issue for the authors of this paper. Most of the comments that need to be made can be done in that time. When a longer video needs to be made a second video (i.e.; which could be referred to as a chapter) may be captured. Likewise, subsequent videos (i.e.; chapters) may be captured. When considering the issue of the five-minute video length, consider the student on the receiving end sitting and watching and listening to your comments. Students typically have a short attention span, especially the millennial generation who are now entering colleges and universities. According to Jensen (1998) "genuine, external attention can be sustained at a high and constant level for only a short time, generally about 10 minutes or less."

An appropriate method for capturing a video of a student's paper using Jing is to have the paper open in a word processor (i.e.; MS Word). The instructor then has all of the capabilities of a word processor at his/her disposal (i.e.; highlighting, editing, formatting, etc.). Highlighting, editing and formatting should be made ahead of time by the professor before starting the Jing program. This will save the instructor time and keep him/her focused on making the comments on the student's paper. However, additional highlights and edits can be made during the recording session. The recording session has a pause feature allowing the user to pause the recording and make additional highlights and edits before

turning the recording back on.

Once the video capture button is clicked in Jing the user is given a three second countdown to prepare to begin making audio comments on the video. A five-minute timer is displayed notifying the user of how much time is remaining to record. The timer turns red at the four-minute mark alerting the user the recording is close to ending. A good quality headset microphone is recommended for this process. A better quality headset microphone does not pick up background noise and also does a better job of recording your voice.

When the recording is complete, the user is prompted to save the file. The user has a couple of options. One option is to save the file to the user's computer. The file can be attached to an email, posted to a student's inbox on a course website, etc. The file will have an SWF extension (i.e; lumadue.swf). Once a student receives an SWF file with an instructor's recorded comments the student should be directed to open the attachment with an Internet web browser like Mozilla Firefox or Mac's Safari. As stated above, these web browsers have flash player built into them. After the file opens the student needs to click the play button to start the video playback. The student then has the option to pause, rewind, fast forward or stop the video playback. These files can also be saved to the student's computer and be viewed again.

A second option is to send the SWF file to the Screencast website. Users of Jing are given 2 GB of space free of charge on the Screencast website to host Jing files. Screencast is the parent company of Jing and the better-known software programs Snagit and Camtasia. After uploading a file to Screencast, the user is given a URL address. This URL address may be copied and pasted into an email or other feature of an online course where students receive grades. The student will be taken to the Screencast website where the SWF file can be viewed and listened to. Screencast offers a password feature for uploaded files. A professor may assign a password to an uploaded file on Screencast and share the password with the student who will then be able to view the files and listen to the personal comments.

The MP4 screen capture format, available only for Jing Pro subscribers, may be used by an instructor to provide feedback or an announcement with a webcam to provide a more personal touch to students. MP4 files may also be embedded into an online course website for a class or an individual student. These announcements may also be posted with a link to a host website such as a personal website, blog or YouTube.

Correspondences from students demonstrate an appreciation of this type of feedback. For example one student commented,

Thanks for the helpful comments on my paper and for following up with me. I was traveling out of town all week for work and just had an opportunity to listen to the comments. I am extremely impressed with the technology. It is very helpful to be able to hear your explanation of the comments in relation to the text. Thanks again.

Another enthusiastic student expressed the following to her professor;

Wow! Thanks for the audio feedback on reflection #1. When I was in college twenty years ago, I had no idea that one day I would be listening to my professor on the computer providing feedback on my

assignment.Times have changed!I appreciate the time you take to review and provide feedback on assignments. Thanks

This article has advocated for a technologically based approach to providing quality feedback to students resulting in a paradigm shift for the 21st century. Busy professors, teaching in the 21st century have been provided an innovative and effective, yet relatively simple option for providing quality feedback on the assignments of their students. The software program Jing was analyzed. Careful consideration needs to be given regarding the format of video screen captures desired by the instructor. An SWF format should be used for most video screen captures. While an MP4 format should be used for video screen captures where streaming video or steaming webcam video needs to be captured. The benefits of providing this type of feedback include time saved by making audible comments rather than typing comments, a more personal touch to students through listening to an instructors comments and a quality technological format.

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