

UTILIZING SCREENCASTING AND VEEDBACK: TRENDING TOWARD RESEARCH-BASED PRACTICE

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Abstract

This study focuses on the efficacy and value of screencasting to provide feedback during the assessment process. This process known as veedback, uses audiovisual feedback, using screen-capture software which enables instructors to provide a feedback recording. 25 graduate and undergraduate students attending an educator preparation program were surveyed with additional grouping for cultural and linguistic diversity as well as students who identified with a disability. The study is a mixed methods design. The study involves an ex-post facto survey to examine student's perceptions of implementing screencasting in their online courses. Results of the survey will be analyzed using ANOVA and qualitative analysis of open responses. Benefits and trends for best practice are discussed.

Keywords: *Veedback; screen casting; disabilities; online learning; multi-modality; hyflex instruction*

Introduction

Much has changed over the last few years with online learning and the need for the development of evidence-based practices to support student learning, particularly those with disabilities. Additionally, there is a change to assessment practices from summative to formative assessment. The latter offers feedback and opportunities for student revision. The traditional assessment practices for feedback have needed to evolve to support multi-modality learning. Research is new and emerging in this field. The study focuses on the efficacy and value of screencasting to provide feedback during the assessment process. This process known as veedback, uses audiovisual feedback, using screen-capture software which enables instructors to provide a feedback recording. Benefits and trends for best practice are discussed.

Formative Assessments

There has been a movement toward more holistic forms of assessment for students in higher education (Irons & Elkington, 2021). Traditionally, summative assessment was the primary means of assessment in courses. Receiving a grade for completed work without opportunity for the student to revise was status quo. However, there is an increase trend in the use formative assessments in higher education courses (Higgins et al., 2002). Formative assessment provides feedback on performance for improvement (Thompson Sousa and Tucker, 2022). Formative assessment is an assessment step between the beginning of an assignment and the summative grade. It provides the opportunity for revision. The foundation of formative assessment is feedback provided by the instructor to the student.

Feedback

Part of the formative assessment process is the use of feedback by the instructor to guide the student. However, feedback needs to be more than to satisfy instructor expectation (Higgins et al., 2002). Students want feedback as a means of analysis of their work to improve their craft. Providing appropriate feedback is a predictor of student satisfaction (Kerr et al, 2016) and promotes self-regulated learning (Nicol & Macfarlane-Dick,2006).

Problems with Traditional Feedback

There are issues with traditional feedback methods utilized in face-to face classrooms. Receiving feedback can make students feel anxious and increase negative attitudes towards writing. Students may not have accurate perceptions of the feedback (Orsmond & Merry 2011). Additionally, there may be cultural factors and perceptions toward corrective written feedback (Irons & Elkington,2021) resulting in lack of effort to revise despite the opportunity for revision. (Bailey, 2009)

These perceptions may exist because of instructor feedback techniques. Frequently cited reasons for student difficulty include feedback that is too general or too negative (Orsmond & Merry, 2011; Bailey, 2009; Weaver, 2006). Additionally, it is reported that students may not understand the feedback. This can be due to the variation of feedback between instructors (Bailey, 2009). Effectiveness of feedback is reduced when there is a lack of understanding by students. This can result in students becoming heavily focused on grades as opposed to other means to gage improvement (Weaver, 2006).

What is successful feedback?

There is consensus with research that suggests feedback should be individualized and relevant to receiving students (Weaver, 2006). It is recommended that feedback focus on what is within the student's control (Gibbs & Simpson, 2004) . Feedback should develop positive attitudes of student work which attributes value (Weaver, 2006). It should also be frequent (Gibbs & Simpson, 2004). Feedback should provide an indicator of strengths and not just weaknesses (Nicol & MacFarlane-Dick, 2006). For weakness, it is recommended that not every error be pointed out but guided indirect feedback where an example of a pattern of error can be highlighted for self-directed learning (Ellis,et al., 2006). The hope is that by encouraging students to correct themselves students will narrow the gap between present and future performance by developing positive associations associated with feedback (Nicol & MacFarlane-Dick, 2006).

Need for EBP for online learning

The pivot to online learning has created a need for evidence-based practices associated with serving students with disabilities and online learners in general. This is particularly true in terms of evaluating and implementing feedback. Since 2020, online learning has become a ubiquitous pedagogy that needs further research. Learning in the classroom can occur in multiple modalities. How these modalities are defined extend across a continuum. Courses have the following modalities (Quality Matters, 2022):

- **Asynchronous:** The course is conducted online at a self-directed pace with deadlines for completion. There are no or few required on-campus or synchronous meetings.
- **Synchronous:** The course is conducted online and there are live meetings scheduled throughout the course. They are synchronous sessions with predetermined dates and time. There are none to few on campus sessions. Course work may be online in an asynchronous format or there may be interactions and assignments in an online meeting room.
- **Hybrid or Blended:** A higher proportion of the class occurs face to face versus online which varies according to state guidelines, institutional policies, and the instructor.
- **Face-to-face:** A traditional classroom-based course with regularly scheduled in-person meetings, where students and instructors are in the same physical space and at the same time. It may rely on “web-enhanced,” content, use of an online gradebook.
- **Multi-Modal:** Uses two or more modalities for teaching: (e.g., face-to-face and online, asynchronously and/or synchronously). This includes HyFlex courses which are multi-modal where students can choose their mode of attendance for each class session.

The continuum of modalities are blurred. Each modality represented has room for varied interpretation. With variation comes a need for flexible tools for engagement with students. Web 2.0 tools can be difficult to fit in along the continuum. In other words, web 2.0 tools support asynchronous responses such as email or announcements. They are geared to strict electronic engagement that may not work for all modalities in online instruction. For example, sending feedback via email or a learning media system (LMS) repository with text would be considered 2.0. There is little room for interpretation of nuances within the feedback. As with traditional means of course delivery E feedback in this manner can create initial anxiety of students (Hewitt 2010; Henderson & Phillips, 2015).

Web 3.0 practices are developing into viable options to support multimodal learning. With web 3.0 tools, there are multiple ways for instructors to provide feedback to students. Research is new and limited for web 3.0 applications for multiple modalities. One web 3.0 application is screencasting. Need for research for screencasted feedback, known as veeback, addresses issues with traditional feedback methods. The use of screencasted feedback can ameliorate some of the issues associated with traditional and asynchronous feedback methods.

What is Screencasting?

Screencasting is a digital recording using audio and voice narration which records the user’s computer screen. Screencasting has general applications in business, education, and entertainment. In education, screencasting can be used to support synchronous or asynchronous conferencing. However, it is more than recording what is on the screen. Screencasting supports multiple modalities of online instruction. Originally, screencasting meant pointing a camera toward the computer screen. Today there are multiple products to support narration, targeted visual displays, editing and storage features. Students can also access the screencasts using multiple modalities.

What is Veeback?

When using screencasting application for academic feedback, a recent term has been coined, veeback. Veeback is a method of feedback from the instructor to the student that uses the combined components of audio and visual captures, instructor annotation, highlighting such as cursor movements and comments about the students work (AbdRahman, Salam & Yusof, 2014). It allows the student to get

feedback from their work in multiple modalities. With veeedback, audio and video data operate concurrently (Silva, 2012) providing enriching support.

Veedback: new and little research

Research regarding screencasted feedback or veeedback is new (Harper, Green, & Fernandez-Toro, 2012). There are limited studies (Bilbro, J., Iluzada, C., & Clark, D. E., 2013); Henderson. Studies available are of small populations citing small trials of the benefits of veeedback that would be difficult to generalize to larger groups (Edwards, Dujardin & Williams, 2012; Kerr et al, 2016). Grigoryan (2017) additionally cited concerns regarding the lack of studies and efficacy of multimodal feedback.

Need for Veedback with Disabilities in the Research

There is also a need for studies in the benefits of using veeedback for students with disabilities. There is limited research for supporting veeedback as an assistive technology application. Recent studies emerge, however. Bau (2019) used screencasting as a method to create accessibility through closed captioning for civil engineering students who are Deaf. Thompson and Lee (2015) state veeedback meets different learning styles and can provide accessibility for students with dyslexia. Rodway-Dyer, Dunne, & Newcombe (2009) cite the benefits of screencasted feedback as an alternative to students having difficulty reading illegible handwriting which again can be generalized for students with dyslexia or orthographic processing deficits. Video modeling has been prevalent in research of autism spectrum disorder for behavior and pragmatic skills for years (e.g., Bellini & Akullian, 2007). Assistive Technology has historically been used for low incidence disabilities and people with sensory issues (Thompson Sousa & Haynes, 2021). Screencasting as an assistive technology tool supports universal design for learning principles which support accessibility to diverse learning styles (Sabbaghan, 2021). Veedback supports diverse learning styles, (Cunningham, 2015; Thompson & Lee, 2015). Research into veeedback to support students identifying with disabilities is important given that veeedback also supports multi-modal types of instruction (Crews & Wilkinson, 2010) which individuals with disabilities need access.

Veedback in Higher Education

There is active recent support of the use of veeedback in higher education. Most often, studies revolve around student responses to veeedback. Students reported feeling positive about veeedback (Cabot, 2015; Cunningham; 2015). Mohan and colleagues (2010) found that students responded positively to lectures when screencasting was used. Most often this was due to students perceiving veeedback as personal and individualized. Students equate personalization with rapport with the instructor (Henderson & Phillips, 2015; Thompson & Lee, 2015). An individualized experience was equated among students as veeedback targeted specifically to the student and unique in comparison to their peers (Turner & West, 2013; West & Turner, 2016; Cunningham, 2015).

Veedback is positively received and increases student engagement.

As a result of the positive association associations associated with veeedback, students reported that veeedback would enhance future performance. Students reported they thought differently about submissions when veeedback was used (Sabbaghan, 2017). Students found veeedback easier to understand compared to traditional feedback (Turner & West, 2013). Students also reported that veeedback provided

in their current course would be a contributing factor to enhancing future writing and projects (West & Turner, 2016; Rodway-Dyer, Dunne, Newcombe, 2009). This engagement was partly due to reduced anxiety reported among students receiving feedback (Silva Harper, Green, & Fernandez-Toro, 2012). In a study by Rodway-Dyer, Dunne, & Newcombe (2009), students had greater engagement and follow through when feedback was used. As a result, there is more focus on the instructor feedback and less focus on grades by the student (Jones, Georghiades & Gunson, 2012).

Feedback is valid.

Based upon positive association and reduced anxiety, feedback is regarded by students as a valid means of assessment (Henderson & Phillips, 2015; Edwards, Dujardin & Williams, 2012; Cunningham, 2015). Feedback measures what it claims to measure, growth in the student's performance. Aside from student perceptions of validity, feedback has theoretical support in constructivism (Zhang & Kenny, 2010). With feedback, student improvement and learning occur based upon the rapport with the instructor. This rapport increases student success in achieving learning outcomes. As a valid and theoretically supported application, feedback has application regardless of subject or modality of instruction (Mohorovičić, 2012) Feedback can be used regardless of the subject.

Feedback with ESL in many studies the benefits of Feedback rest with research in ESL

Many feedback studies are centered on language acquisition and service to students whose first language is other than English. Most studies fall under guiding best practice for feedback. Mathew and Alidmat (2013) cited benefits to audio visual feedback but in terms of content support rather than true summative or formative feedback, citing its usefulness in instruction for second language learners. Zhang and Kenny (2010) identified challenges feedback such as lack of clarity that prevents students from interpreting in a way the teacher intends. They contend that online distance education course designers should combine the design principles for successful online interaction. This includes use of tone and highlights for best practices.

Feedback Best Practices

There has been active recent support of the use of feedback in higher education with respect to best practices. Most have been reported based upon student perceptions. This includes the instructor's voice, supporting aids, depth of feedback and timeliness.

Use of Tone

Voice is a contributing factor to feedback. Conversational quality is a reported issue among feedback recipients. Best practice for feedback involves the proper use intonation when screencasting (Harper, Green, & Fernandez-Toro, 2012; Kerr, et al, 2016). Inferring the tone of a written message is something that is a common struggle which is a difficulty with traditional feedback. Anyone on the receiving end of an email or text that has dealt with difficulties understanding tone at times understands the concern. Therefore, it is important for instructors to consider use of their voice both with modulation and use of a casual tone. Thompson and Lee (2015) report that "conversational quality" improves rapport between instructors and students and therefore a vital component of feedback.

Supported Screencasting

Utilizing visual or annotated support is also best practice for feedback. It is not enough to provide a screencasted narration. Best practice for feedback involves a combination of audio/visual and written feedback according to Parton, Crain-Dorough & Hancock (2010). This is done by providing a variety of materials (e.g., files and websites) and increasing verbal explanation. By combining these methods instructors provide more information than through screencast or the written comments alone. It is recommended that feedback specifically targets problems using annotations (West & Turner, 2016) By using this combination students will have greater clarity and improve their progress (Kerr & McLaughlin, 2008; Cunningham, 2015). Use of feedback and supported techniques may not support students entirely. Rather, it is important for instructors to provide depth to their feedback (West & Turner, 2016). It is recommended that verbal explanations offer detail and highlight annotations (Jones et al., 2012). To support the depth of understanding, students may need guidance to create sustainable practices before accessing feedback (Weaver 2006; Harper, Green & Fernandez-Toro, 2012). Therefore, offering quality feedback to students means depth in visual and auditory support.

Feedback is best used for formative assessments.

Feedback, like traditional feedback, is best utilized for formative assessments. Feedback for summative assessment does not give the opportunity for the student to grow and revise their work for later application. Feedback during formative assessments provides the student with an opportunity for revision for greater progress and thus they are more motivated to do so. Students report that feedback is more successful when used during formative assignments for assessment rather than summative (Edwards, Dujardin & Williams, 2012). Formative feedback is best when structured, ongoing and timely.

Instructor Benefits

Research cites benefits of feedback particularly for higher education. Feedback offers benefits to faculty in the face of resource constraints (Gibbs & Simpson, 2004; Kerr & McLaughlin, 2008). Time and flexibility were the largest contributing benefits reported by instructors regarding feedback. They found feedback's application most useful for large courses by saving time and creating flexible opportunities for various modalities of instruction. There also was a reported need for instructors to use their resources and time in a constructive manner (Denton, Madden, Roberts, & Rowe, 2008) particularly when faced with the challenges of online learning format.

Saves Time

Instructors report that using feedback saves time compared to utilizing written feedback (Thompson & Lee, 2015). The assessment process took less time when technology was used (Crews & Wilkinson, 2010) and saving that time was valued (Henderson and Phillips, 2015). This was particularly applicable when the task involved large groups of students as those found at higher education institutions and in online classes (Edwards, Dujardin and Williams, 2012). Additionally, utilizing screen-casting in lieu of typical office hours offers flexibility to respond to students in multiple time zones. Feedback is accessible regardless of the time of day and gives students the ability to re-watch more than once, reducing the amount of follow up questions.

Veedback Supports Multimodality and UDL

Veedback offers suitability for distance learning (study model). It can be applied to a variety of online courses (Wade, 2016). Because veedback can be accessed at any time it supports multimodal types of instruction (Crews & Wilkinson, 2010; Olesova; 2011). This gives instructors more flexibility in their type of instructional delivery. Veedback also supports Universal Design for Learning (UDL) which is a flexible framework for accommodating learning differences (Rose, Ralabate, & Meo, (2014). UDL practices are equitable practices providing access to learning objectives. These practices are inclusive to all abilities and disabilities. UDL practices focus on engagement, representation, action, and expression. Veedback can support all UDL practices in that it provides formative assessment for development and improvement

Research Methodology

The research aims to contribute to understanding best practice for veedback and screencasting for students. The research is the first step in identifying the use of veedback and screencasting as an assistive technology practice for students with disabilities. Additionally, responses of culturally and linguistically diverse students will be evaluated to see if the cultural or linguistic issues cited in the literature could be a contributing factor to negative responses regarding veedback compared to the respondents that do not identify as English being their second language. The research will answer three questions:

1. Determine whether Veedback or screencasting can be considered an effective practice for online instruction.
2. Determine whether Veedback or screencasting is beneficial in ameliorating issues associated with disabilities that can occur with instruction online
3. Determine whether Veedback or screencasting is beneficial in ameliorating issues associated with cultural and linguistic hurdles that can occur with instruction online.

Participants

University students participated in online course work using the learning management system (LMS) Blackboard. The courses are asynchronous, synchronous, and multimodal but were not delineated in the survey as part of the study. Students are in-service teachers and graduate students in education and pre-service undergraduate teaching candidates (N=24). Students were additionally classified in terms of identifying with a disability or as a learner whose language was other than English which represented 22% of the respondents. Participants were chosen on a volunteer basis and participation was announced via email and through their course announcements.

Material and Methods

Screencast video feedback, veedback, was recorded using a freely available screencast software. A free account was used which allows for 15 minutes of recording time. Screencast software was utilized for veedback of formative assignments for their course. Students were provided veedback in consideration of recommended best practices. Veedback best practices include providing highlights and annotation of written work, pointing out strengths, utilizing a conversational tone when speaking, providing veedback for formative assessments and providing veedback in a timely manner. The screencasted veedback was then uploaded to an unlisted YouTube account to provide unlimited access and privacy. The student was alerted to the veedback communication through the student email account or through the course forum.

An embedded code showing a thumbnail of the video was used for ease of access. The student did not need to create an account to access the information.

Research Design

The study is a mixed methods design. Participants are the same for both. The study involves an ex-post facto survey to examine student's perceptions of implementing screencasting in their online courses. The questions were developed based upon best practices outlined in the literature review. The results of the survey were analyzed using ANOVA.

Qualitative data analysis occurred. Participants had the opportunity to share experiences about screencasted veeedback with an open response. These responses will be coded and analyzed to predict any benefit or trend toward best practice. Analysis is based on Grounded Theory (Glasser & Strauss, 1969).

Outcomes

Quantitative Data Analysis

Veeedback can be considered an effective practice for online instruction. Most responses fell in between positive and neutral in their responses. Overall, respondents stated that receiving feedback through screencasted videos, veeedback, helped students reshape their ideas compared to written feedback from the instructor alone (N=43%). They reported that screencasts helped with understanding the expectations of assignments (N=56%). Veeedback was helpful, clear, and easy to understand (N=74%). Students felt that veeedback was engaging in the revision process in comparison to written feedback alone (N=60%). As with previous studies, students reported that veeedback felt personal (N=60%) and would recommend it for other classes (N=59%).

Not all was positive with respect to screencasting and veeedback. Some students responded that they had difficulty loading videos (N=8%). When given the opportunity to elaborate on the difficulties, respondents did not give additional context. Screencasts and veeedback used in the study were automatic queued videos housed in a cloud with additional alt text hyperlinks for immediate watching. So, it is difficult to determine what access issues existed. Some students did report that screencasts and veeedback were time-consuming (N=4%). The length of screencasts was 15 minutes or under. Veeedback provided to students was 2 minutes in length.

Disability and Cultural Linguistic Diversity – Veeedback

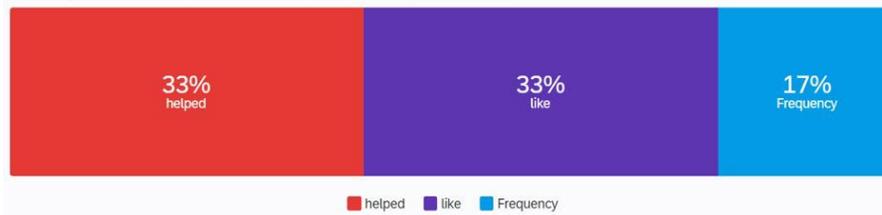
People with disabilities made up 13% of the study respondents while students with a primary language other than English made up 8%. There were significant findings with both groups in comparison to respondents that did not have disabilities or English as a second language. Respondents with disabilities reported that screencasting “helped with the understanding assignments in comparison to feedback delivered with writing alone” to a larger degree than in comparison to respondents without disabilities ($P < .01$). Students that identified as having a primary language other than English, reported more often that veeedback “felt personal” in comparison to all respondents ($P < .01$).

Qualitative Analysis

Respondents were queried further regarding feedback and screencasting. Trends emerged (Fig. 1). Most frequently they stated that the use of screencasting helped. Students stated they liked it and had suggestions or support for the frequency of use for feedback and screencasting. Ease of use and access were common in responses with respect to screencasting. Students did state that feedback was most beneficial in conjunction with written feedback which supports previous research. Screencasting, whether used as feedback or as multimodality instruction was reported as “helpful” frequently. Students reported that they “liked” screencasting to provide feedback and instruction. In their feedback they stated that a “once per week” screencast was most helpful in terms of frequency.

Figure 1

Breakdown of open responses



Note. Students’ open responses were positive to feedback

Conclusion and Recommendation

Diversity in the classroom happens at every level, whether K-12 or in higher education. It is important that faculty in higher education be aware of diversity in the classroom and utilize multimodal applications in their instruction. 21% of respondents for the study had issues with language or disability affecting learning in their online program. Two areas of significance were reported. Students with disabilities reported benefiting from screencasting in comparison to written instructions alone to a significant degree in comparison to the mean response of students not identifying with a disability. Students with cultural and linguistic diversity reported that feedback felt personal to a significant degree in comparison to students that did not identify as such. These two findings bolster support for research in screencasting and feedback as an evidence-based practice.

Results of this study additionally provide guidance into recommended research regarding the frequency of screencasting in instruction. A frequency of one time per week in a course was recommended by students. Additionally, length of screencast or feedback was a reported area of concern. It is recommended further studies occur with respect to student engagement and length of screencast or feedback.

Certain considerations are recommended for future research in feedback and screencasting as an evidence-based practice. Omitting the name of the screencast software used for the study was deliberate to reduce bias and misunderstanding of what constitutes a potential evidence-based practice when utilizing web 2.0 and 3.0 tools. While other studies in the literature review named specific screencasting software. Caution is recommended in this practice. It is the instructor practice of using the screen casting tool rather than the software itself that contributes to evidence-based practices in online instruction and assistive technology. Confusion about this concept is influenced by affiliate opportunities offered by screen casting companies to “influencers” and other social media content providers. While affiliate

opportunities would be appropriate for non-educational applications, researchers need to exhibit caution. Too often, specific software or devices are touted as intervention rather than instructor expertise of application for device (Thompson Sousa, Haynes-Smith, 2021). It is important for instructors to not utilize web 2.0 or 3.0 products at face value but research and understand best practices in the use of the device and how they apply to diverse student populations.

Utilizing feedback as a tool for formative assessment in educator preparation programs serves as a model for practice. Students have the benefit of evaluating feedback's utility as a user and receiver before putting it in to practice in their own classrooms and with their own students. Implementation of feedback begins with the instructor. If students have a positive experience and a closer connection to their instructors, feedback is interpreted as valid and they will more likely implement the application when the opportunity presents itself. Feedback is efficient and effective for instructors who may have difficulty reaching in-service teachers and working students during business hours. It offers the opportunity for students to marinate on recommendations of the instructor while lessening their anxiety. By instructors utilizing recommendations for tone, annotation and frequency instructors can make connections with their students while fostering growth.

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