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Providing Students with Multimodal Feedback Experiences

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DESIGNING MULTIMODAL FEEDBACK EXPERIENCES

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Abstract: In higher education, feedback is an effective but underappreciated teaching tool that expands students' opportunities for learning. Students need more formative feedback that can lead to dialogic experiences, and they need more feedback experiences in different mediums and modes. Providing students with multimodal feedback that is formative may lead to more dialogic experiences for students and improve their learning. Multimodal feedback experiences benefit all students, including those from diverse and disabled communities. This paper examines some of the advantages and limitations of written, audio, and video feedback and argues that feedback that is primarily formative and delivered using multiple modes and mediums to accommodate certain assignments, students, and contexts increases the potential for students to have dialogic learning experiences. Instructors can take advantage of the affordances of writing, audio, and video to design multimodal feedback experiences for students that extend their learning environment and facilitate more dialogic interaction between students and instructors, students and their peers, and students and themselves.

Students contend that most of the feedback they receive from their instructors in higher education is ineffective (Carless & Boud, 2018; Pitt & Norton, 2016; Urquhart, Rees, & Ker, 2014; Yang & Carless, 2013). A lack of formative and dialogic feedback has led to students' continual dissatisfaction with their feedback experiences (Smith, McCarthy, and Magnifico, 2017, p. 122). Many students associate feedback with a negative learning experience, and they repeatedly complain about a lack of formative feedback on their learning and assignments (Cope & Kalantis, 2017). Students want more positive comments, more examples and models for improving, and more succinct explanations for why their work is either acceptable or unacceptable so they can make adjustments and revisions that move their learning forward (Kim, 2004; Jones et al., 2012). The larger body of research on feedback (Boud & Molloy, 2013; Dawson et al., 2018; Espasa & Guasch, 2015; Huot, 2002; Lamb, 2018; Merry, 2013; Molloy & Boud, 2014; Parkin, 2017; Sambell, 2013; Shute, 2008; Sommers, 2012; Straub, 1999; Straub & Lunsford, 1995; Strober & Jackman, 2004; Yang & Carless, 2013) argues that to increase learning opportunities for students, instructors should design formative feedback that provides students with multiple opportunities to reflect on their learning and to dialogue with their teacher, themselves, and their classmates about their learning. Formative feedback is feedback students can apply to future learning situations and assignments (Shute, 2008, p. 157). To create more effective and dynamic formative feedback for students, instructors can use dialogic pedagogies as a frame to design feedback.

Dialogic pedagogies (Angelov & Ganobcsik-Williams, 2015; Elbow, 1997; Freire, 1968; Wegerf, 2015; Yang & Carless, 2013) ask instructors to create formative feedback that promotes and facilitates dialogic experiences for students. Dialogic feedback initiates a conversation between students and teachers, students and their peers, and students and themselves that provokes and promotes critical thinking and introspection (Higgins, Hartley & Skelton, 2001; Savin-Baden, 2010; Ward, 1997). However, implementing dialogic feedback requires flexible heuristics and varied approaches for making and delivering feedback. When instructors rely on only one medium, such as written feedback, they constrain a student's ability to use that feedback to continue learning. Different mediums and modes have modal affordances that can help instructors improve their feedback clarity, make learning a conversation, and build personal and professional connections with students. Multimodal feedback captures a broader purview of the instructor's paralinguistic activity, and it can prompt instructors to give students more comprehensive formative feedback. Cultivating more feedback experiences that are multimodal can expand a course's learning opportunities for a diverse range of students, including disabled (Browning, 2014) and multilingual students (Cedillo, 2017; Hung, 2016).

Many disabled and multilingual students need and rely on multimodal forms for learning. Students reuse multimodal feedback to model and practice decoding the instructor's language cues and paralinguistic activity. Formative multimodal feedback provides students an additional learning tool they can revisit at their convenience and a *multimodal feedback experience*. Multimodal feedback experiences are instructional design opportunities that

give educators an opportunity to use sound, image, text, and animation to expand and extend their teaching and learning spaces, increasing the potential for dialogic learning experiences to occur for students. Multimodal feedback can reposition how both instructors and students read, watch, and hear feedback. Students and instructors process, criticize, and comprehend video, audio, and written comments in different ways, which can lead to a broader understanding of the feedback quality and usability. Multimodal feedback experiences can expand the learning opportunities in a course, make the course material more accessible and clearer to all students, and acknowledge, privilege, and value the semiotic literacies students bring to their learning environments.

This paper examines some of the advantages and limitations of using written, audio, and video feedback (VF) and concludes that feedback that is formative and delivered using a variety of mediums over the duration of a course's term improves the quality of the feedback and the potential for dialogic experiences to occur. Instructors can utilize their paralinguistic activity—their gestures, expressions, and tone of voice—when creating video and audio feedback to construct a conversational learning experience and an additional visual presence for students. On the other hand, instructors may want to use written feedback to provide students with specific comments directly on a paper, or to articulate a more concise explanation of the learning assessment on a separate document. The most important factor in designing effective dialogic feedback is that the medium cannot make the feedback formative or dialogic. However, each medium has unique affordances that instructors can use to design formative feedback that can facilitate dialogic experiences for students. This paper defines dialogic feedback, examines the potential for written, video, and audio feedback to facilitate dialogic experiences that increase learning opportunities, identifies the pedagogical value for gestures and expressions, and concludes with suggestions for designing multimodal feedback experiences that have dialogic potential.

Dialogic Feedback

Dialogic feedback places an “emphasis on dialogue” and attempts to avoid “one-way transmissions of feedback which frequently arises from the dominant structural constraint of written comments on end of course assignments” (Yang and Carless, 2013, p. 286). The implication is that dialogic feedback is a pedagogical alternative to summative feedback and one-way communication, and that students learn best from two-way transmissions that contain formative feedback that sustains and extends their learning (Wegerf, 2015, p. 11). Dialogic feedback initiates a conversation about learning between students and teachers, students and themselves, and students and their classmates. There are five key principles for developing a dialogic pedagogy: people dialogue about learning with themselves and their teachers, their institutions, their peers and classmates, and their writing (Ward, 1994, p. 171). Ward argued that students need to develop inner dialogue and become self-evaluators to become better writers and learners, but they need more dialogic feedback to move their learning forward.

Providing students feedback loops and formative questions and comments in any mode or medium helps them “feedforward” (Parkin, 2017) and facilitates dialogic experiences. According to Parkin, feedforward is feedback that allows students to meet their learning goals, push their learning forward into new directions, and revisit the feedback at any time to use as a recursive learning tool (p. 153). The medium for feedback has no value for students if the feedback is limited or has no opportunities for them to apply, transfer, and learn from the feedback. Formative and dialogic feedback give students opportunities to revise their work, continue learning, or make “new knowledge gains” on future assignments or revisions (Molloy & Boud, 2014, p. 418). Students need epistemic comments and feedback loops to feedforward. There are three phases of a feedback loop that are especially important for composing dialogic feedback (Espasa and Guasch, 2015). The first phase involves how the feedback is delivered; the second phase involves how the student processes the feedback; and the third phase involves what the student actually does with the feedback (Espasa and Guasch, p. 16). Instructors can use a three-phase theory for feedback loops as a foundation to design questions and formative statements for students to dialogue with themselves, the instructor, and their classmates.

Some of the most effective feedback comes in the form of questions that students can answer to complete a learning action—to tie off a feedback loop—and make adjustments and revisions that keep students learning (Espasa and Guasch, 2015, p. 20). Students can revisit and engage questions and answers to carve out new learning spaces. If instructors incorporate more feedback loops and questions that help students feedforward, the dialogic potential of their feedback may increase. However, the research suggests that using written feedback alone to respond to students may be limiting their opportunities to continue learning from their instructor's feedback outside the classroom. To be effective, feedback needs to be formative and come in different forms, modes, and mediums at different times throughout the course, from a multiplicity of sources and people (Sommers, 2012). Each mode and

medium has advantages and disadvantages that instructors should consider when curating a feedback experience for their students. Modal constraints can prevent instructors from thinking more broadly about feedback strategies and approaches. Feedback should be a conversation, a rhetorical act, and an opportunity to enhance teaching & learning.

Written Feedback

Written feedback is an over-privileged medium that instructors primarily rely on to deliver feedback even though students have continually expressed their displeasure with the way written feedback “fractures dialogue” (Nicol, 2010, p. 503) between them and their teachers. Many students contend that written comments are not useable (Hung, 2016). In other words, written feedback that is not formative moves students and teachers away from dialogic exchanges and shrinks the learning potential of the feedback. Written comments that are summative have little to no impact on student learning and writing development (Hillocks, 2008, p. 321). Students find it difficult to utilize summative comments that explain and justify the earning of a grade to progress their learning or revise their work (Norton & Norton, 2001). Furthermore, written comments—whether summative or formative—can be difficult to read, understand, and interpret. Poor, illegible, unclear comments have damaged and complicated the feedback experience for both students and instructors. Poorly written summative feedback has made students more anxiety-laden about receiving feedback in any medium. Even supplemental explanations for written comments can remain obtuse, further confuse students, and take additional time for instructors to generate. Feedback that requires clarifying comments is a waste of instructional workload that could be invested into developing better feedback practices.

Freedman (1987) revealed that supplemental written feedback was not only difficult to interpret on its own, it was equally difficult for students to interpret when they had class discussions about it, met with their teachers for clarification during office hours and in one-on-one conferences, and discussed it with their classmates in peer-review groups (p. 344). When students reach out to their instructors for clarification on written feedback, they tend to get more written feedback that is equally vague, leaving both instructors and students more frustrated. Written feedback can get detached easily from the contexts and content it is responding to and become difficult or impossible for students to follow (Nicol, 2010, p. 501). Students often have trouble determining where and how written comments on a paper directly connect to their work or writing. Some teachers make edits to student writing as a form of written feedback without providing an explanation of those changes and how students can address them in future assignments (Hung, 2016). Instructors are returning papers with corrections and edits but failing to leave behind formative comments and suggestions about how students can learn from those changes. One major concern with written feedback is if the spaces on and around a paper, the paper’s margins, are adequate for providing students with comprehensive formative feedback (Haswell, 2008). The margins of a paper do not always leave instructors enough room to provide students with succinct and detailed explanations of what they did well and what they can work on to move their learning forward.

Teachers should reassess where they write comments and consider how the location of their feedback can influence the quality of the feedback. Small areas of space on a paper may not provide enough room for instructors to write formative comments. If educators have to fit their feedback into the available spaces on a paper, they will be tempted to write one-word comments or shorten phrases that reduce and condense larger chunks of information down to a cover word or phrase. Instructors flatten or sequence their written feedback in to cover words or phrases that represent a comprehensive set of concerns in the instructor’s mind that would take more space to fully articulate to the student in writing. Instead of writing detailed comments, instructors use phrases and individual terms to that do not adequately capture those details but fit neatly in to the available spaces on the paper. Students find it difficult to use one-word feedback statements and comments and short, ambiguous phrases that are indeterminate or too broad (Yang and Carless, 2013, p. 288). For example, the phrase “needs more development” can represent dozens of very specific issues with student learning and writing that the instructor needs to unpack for the student.

An idea, summary, or claim may need more development, but the lack of development could be a result of specific issues that should be identified and clarified for the student in the feedback. What does more development mean, and how much does more development constitute? What is the adequate development of an idea in writing? These types of questions are specific to the assignment and instructor. Obscure comments like “needs more development,” “lacks clarity,” “unclear idea,” or “awkward sentence” represent specific concerns with student learning and writing that require more extensive feedback that may exceed several dozen words and not fit in the margins of the student paper. Students need to know what “more development” means and how to develop their ideas and writing in different genres and forms for different audiences and purposes. When the instructor’s feedback

limits a student's ability to continue to learn from the feedback, it closes off additional learning opportunities for the student. Written feedback is effective if it provides students formative statements they can use to learn, but handwritten feedback can be difficult to read even if it is formative.

Students have struggled historically to comprehend the size and the ink and pencil (dis)colorations of written comments on their papers and assignments (Lunsford & Straub, 1995, p. 98). Twenty-five years after Lunsford and Straub's (1995) study on feedback, students are still complaining about the readability of handwritten feedback despite instructors having increasingly more access to word-processing and media technologies for commenting on student work. In a longitudinal study, Sommers (2012) followed 400 students at Harvard from 1997 to 2001 and examined the feedback they received on assignments from different courses across disciplines. She discovered that written feedback was highly dysfunctional and impossible to read and comprehend. "Students feel overwhelmed by the sheer number of comments and the bewildering hieroglyphics scribbled on their pages—dots, check marks or question marks, squiggly or straight lines" (Sommers, p. xii). Students waded through dozens of comments and markings on the paper that were unclear and impossible to decipher, and they had a difficult time determining if the written feedback provided them with "observations, suggestions, requests, pleadings, or commands" (Sommers, p. xii). When written feedback is confusing and contains an overwhelming amount of markings, students avoid reading it.

Cavanaugh and Song (2014) studied the difference between audio and written comments and found that students had trouble understanding written comments because they were summative and difficult "to follow" and interpret (p. 129). Students were unsure where each written comment directly connected to their writing or learning. Vaguely written comments placed near areas of concern on the paper, comments that could potentially be applicable to several areas of the assignment, do not help students clearly and quickly identify the instructor's concerns with their learning and articulate how to address those concerns.

Despite students' deep-seated frustration with written comments, whether handwritten or typed, written feedback does have some important advantages. The most useful advantage of handwritten comments is connected to its most glaring disadvantage. Instructors can write formative comments next to a section, paragraph, or sentence on a student paper at almost any time or location without having to be in a controlled environment to record media comments or have a recording device and tools to upload video or audio feedback. Instructors can address sentence level issues on the paper quickly and efficiently with written feedback. Comments next to the learning concern make it easier for students to connect the feedback to the specific concern in their learning, apply the feedback, and continue learning (Silva, 2014, p. 3). Handwritten comments, if they are coherent and legible and close to sentences and paragraphs of concern, can make it easier for students to connect the feedback directly to their learning. The limitations of written feedback have led several instructors to experiment with different genres and forms to facilitate formative and dialogic feedback experiences with writing.

Fulwiler (1997) responded to student writing with feedback letters. A letter can represent a more pleasant communication experience for students that can undermine negative perceptions of feedback. Letters rely on a certain tone of voice and language that can make feedback conversational, easing the tension students often experience when reading and digesting critical feedback. The letter is a structure and form that students will recognize as conversational. Students may be less defensive about how they read and interpret feedback in this form. Furthermore, moving written feedback off of the student paper and onto a separate document gives the instructor ample space to feedforward. Designing and delivering feedback in different genres also repositions how teachers see and analyze their feedback and how students represent and process it. Using different genres for written feedback can lead instructors away from summative and passive feedback that does not move students' learning forward. A letter is a non-conventional feedback space that can expand how instructors personalize and design comments when they adjust their feedback to match the conventions of a letter. However, implementing an alternative form to create feedback does not address the feedback content. An alternative genre or form will not make the feedback more effective if the comments are not formative.

Furthermore, in some instances, written feedback may not be the most effective medium for initiating dialogic exchanges with students. Written feedback can limit learning if it is the only medium instructors use to provide feedback to students throughout the duration of a course. The disadvantages of summative written feedback outweighs any of its advantages. Hillocks (2008) argued that using written comments alone to respond to student writing "is generally ineffective" (p. 322), and that teachers should include other forms and modes for feedback throughout the term in addition to written comments. Instructors should continue to give students written feedback if it is formative, written clearly, or typed on a separate page, but they also should implement a variety of mediums and modes to provide feedback and potentially increase dialogic experiences for students.

Audio Feedback

The instructor's voice is a powerful dialogic tool when used to deliver formative feedback. Rodway-Dyer, Knight, and Dunne (2011) examined the use of audio feedback in a geography course and concluded that a majority of the students in the study preferred audio over written feedback even though some students disliked audio feedback when the tone of the instructor's voice felt harsh, negative, or overly critical. A thorough analysis and comparison of the transcripts for the audio and written comments revealed that the audio feedback was more detailed than the written feedback. Receiving more detailed feedback is most likely a significant reason why the students prefer audio comments. Anson (1997) and J. Sommers (2002) conducted studies on audio and written feedback in two different decades and they both discovered that audio feedback was more comprehensive and formative than written comments. King, McGuganm, and Bunyan (2008) and Lunt and Curran (2009) also found that students preferred audio comments in lieu of written comments because the audio feedback contained more formative and detailed statements. Even when equal amounts of time are devoted to creating feedback in both audio and written forms, instructors still give students more audio feedback than written feedback (Kirschner et al., 1991, p. 185).

No one has been able to identify what makes an audio comment more effective than a written comment, or why instructors get motivated to provide more formative feedback when using audio as opposed to writing, but hearing the instructor's voice has a significant impact on student learning. Instructors who use audio feedback feel like they provide students better quality feedback when they speak to them and record their voice (Huang, 2000, p. 199). Students value how the instructor's voice personalizes the feedback and positively impacts their learning experience (Issa, Isaias, and Issa, 2014). The teacher's voice can make the learning experience feel less tense and authoritative (Ice et al., 2007). Audio feedback can represent an instructor's devotion to their students' learning and be an example of student-centered pedagogies. Personalization demonstrates a commitment to student learning that builds trust between students and teachers, increases instructor presence, and widens students' learning environment.

Students in a media law class at Queensland University of Technology were impressed and satisfied with how well their instructor articulated feedback in audio form using Audacity as a recording platform. Students found the instructor's voice to be comforting, and they appreciated audio feedback because the comments were more formative than written feedback (Butler, 2011, p. 99). Audio feedback captures the tone and speed of the instructor's voice, which can lead to more detailed comments. Hearing comments alters how students process and make sense of the feedback (Warnock 2009, p. 181). Humans process information in different ways when they read and listen to feedback. Many students rely on sounds and images to experience the world, and they need multimodal learning experiences for knowledge acquisition. Selfe (2005) argued that sound is an undervalued mode for teaching and learning, and that "the sound of the instructor's voice" affects how students understand course material and navigate various learning contexts (p. 633). Written comments cannot replicate how "speech conveys a great deal of meaning through pace, volume, rhythm, emphasis, and tone of voice" (Selfe, p. 633). Instructors can adjust their pace, volume, rhythm, emphasis, and tone of voice to shape the quality of their audio feedback. Spoken comments require a certain level of attention to detail and articulation from instructors that is often overlooked and devoid in their written comments.

On the other hand, an instructor's tone of voice can intimidate students and make them anxious if the instructor fails to account for how they sound and what they say. Instructors will need to pay attention to their volume and tone of voice when making audio feedback so they do not undermine the dialogic advantages of audio feedback. Another drawback to audio feedback is that it requires a recording device and a quiet space to control the volume of the recording. Although a phone is a simple audio recording device that almost all instructors and students own, and that can be taken and used almost anywhere, recording sound requires a controlled environment and location that is quiet and has limited background noise. Audio feedback also has to be uploaded to a safe location where students can access and listen to the comments, and students need a quiet place or a tool (headphones) to listen to the audio feedback. Instructors can upload a variety of media to most learning management systems (LMS), and students can listen, watch, or read the feedback on those LMS platforms. Instructors should account for, and prepare to manage, these additional steps and constraints for generating and delivering audio feedback. Instructors should also avoid providing audio feedback to students who have difficulty hearing or prefer another mode like written feedback. The successful implementation of audio feedback has led to experimenting with other multimodal feedback tools, such as video.

Video Feedback

Like audio feedback, video feedback requires a controlled environment to record comments and paralinguistic activity. It may be difficult for some instructors to find a quiet location to record video feedback when they need to work within a certain timeframe. Instructors will also need a device to record videos and possess the ability to upload the videos to a safe and secure platform where students can access and watch the videos. Students also need a media device to watch video feedback, and they need a quiet location or tool (headphones) to listen to the feedback. Most students have a phone or access to a computer, but instructors need to consider how students might access and use video feedback and whether or not it is an effective feedback medium for their students within the contexts of their learning spaces. Instructors can use a phone or computer with built-in video recording options to record video feedback, and there are software tools that capture the instructor's voice and paralinguistic activity and the student paper, but examining those software tools, such as Camtasia or Jing, is beyond the scope of this paper. Learning more about how to record and edit video is necessary to use video feedback effectively, but recording and uploading a video are not overly difficult tasks and affordances to learn. Using video requires overcoming a learning curve if the instructor's comfort level and experience with technology is low, but video feedback has significant value and pedagogical advantages as a teaching and learning tool. Video comments can increase personalization (Lamey, 2015, p. 694). Many instructors use video feedback to construct a more humanizing perception of themselves for their students, making the learning environment more comfortable for conversing and interacting (Borup et al., 2014). Students also find video feedback to be more detailed, conversational, introspective, and formative than written comments (Wilkie & Liefeth, 2020; Thompson and Lee, 2012). Video feedback has a "conversational quality" that makes it easier for instructors to talk to students and emphasize their "expectations" and the course objectives and to identify and comment on more "global issues in writing" (Silva, 2014, p. 3). Like audio feedback, video feedback is an effective tool for generating broader conversational feedback, and it lets instructors speak directly to students about global issues in their learning and it affords instructors an opportunity to interject paralinguistic activity into their feedback.

Students greatly appreciate when their instructors address them by name in the video feedback and create personalization (Özkul & Ortaçtepe's, 2017). Acknowledging students by name builds rapport between students and teachers and it is a characteristic of a caring and dialogic pedagogy (Eyler, 2018). "Pedagogical caring" is a foundation of dialogic pedagogies; it leads to more personal connections between students and teachers, which can facilitate more dialogue about learning (Eyler, p. 129). Student-centered approaches to feedback can motivate students to learn. Students who received video feedback in Özkul & Ortaçtepe's study made more revisions on their writing than the students who received written feedback: "85% [of students] said they watched the recorded videos more than once" and "reported being more careful while redrafting their assignments because the teacher/researchers addressed them in person (Özkul & Ortaçtepe, 2017). Students responded to the instructor's recognition of them by name with increased engagement with the course's learning outcomes. Personal connections can motivate students to invest in their learning and to embrace feedback as an important learning experience. Making video feedback symbolizes a certain level of instructional commitment to student learning. Students know that designing multimodal feedback experiences require instructors to invest more labor and time to teaching. Students appreciate when their instructors try to give them dynamic learning experiences, and the sounds and images of video feedback initiate an affective experience that can bond students and instructors and bolster their confidence (Thompson and Lee, 2012).

Video feedback also provides educators a chance to take advantage of their paralinguistic activity. Video affords instructors an opportunity to use expressions and gestures as a form of feedback. Body language and gestures are extremely effective communication tools that significantly impact language use and learning (Eyler, 2018). Facial expressions and gestures influence how individuals comprehend and learn colloquial and academic discourses and literacies (Hung, 2016). Some students need to see and read their instructor's non-verbal cues to improve their understanding of the course content and to engage with the feedback (Fukkunk et al., 2011). Formative video feedback extends the learning environment beyond the classroom. Students can revisit and reflect on the language cues, questions, comments, and paralinguistic activity in the video feedback to continue learning. Video can "provide opportunities to promote observation and reflection through repeated viewings" (Rosaen, 2015, p. 6). Students can watch and review the video feedback as many times as they want or need—they can pause, fast-forward, and rewind the feedback at any moment—and study, model, dialogue, and reflect on the instructor's paralinguistic activity and comments. Students can watch video feedback again and control how, when, and where they learn. Body language gives students an additional language cue to model and learn from the videos, and body

language significantly contributes to the quality of communication between students and teachers. If instructors design learning experiences with dialogic and formative video feedback that students can review at any time, students gain more autonomy and control over their learning and the frequency at which they can revisit and repeat a learning experience.

Students are not the only ones who are able to learn from watching video feedback. Crook et al. (2012) discovered that educators who made video feedback were more likely to reflect on their feedback practices and to make changes to improve the quality of their feedback than they were with written feedback (p. 387). Both students and instructors benefit from watching and using video feedback as a learning tool. Instructors who used video to provide students feedback contemplated the value and effectiveness of their feedback and became metacognitive. Hearing and seeing how the feedback sounded and how they looked on the screen made instructors hyperaware of their feedback quality. Video feedback gave instructors a reflective space to see and hear their feedback and to critically examine its quality and effectiveness from new angles and perspectives. An instructor's feedback will sound different to them than how they will see and read written feedback on the page, which alters how they assess and evaluate the effectiveness of their feedback. Rereading feedback does not have the same effect on instructors as seeing and hearing their feedback because video feedback is the only medium capable of recording an instructor's gestures and body language and including them in the feedback experience. The most significant advantage of using video feedback is that it records the instructor's gestures and expressions, so it is important to examine how gestures and expressions impact feedback more closely.

Paralinguistic Activity and the Feedback Experience

Gestures and expressions are a powerful dialogic tool for teaching and feedback. Sounds and images affect our emotions and emotions shape how we learn. Paralinguistic activity is a “language of emotions—meaning a psychologically grounded and culturally shared signal-system that serves to express and decode emotion-related messages” (Gartmeier and Hascher 2016, p. 122). Video captures the emotional activity in someone's facial expressions, body gestures, and verbal intonations. Body language is so nuanced and complex that gestures and expressions are classified as two separate and distinct signal systems (Bavelas et al, 2014). Facial expressions and conversational facial gestures function and perform in similar and different ways. Facial expressions are related to how individuals express their emotions, and facial gestures are related to how individuals interact and communicate in social and cultural spaces (Kraut and Johnston, 1979). Gestures and expressions are a discursive and sophisticated socio-paralinguistic behavior that instructors cannot fully simulate in written or audio forms.

When we communicate using speech, we use facial expressions and gestures to emphasize ideas and feelings, to demonstrate transitions in thought or between speakers, and to communicate information non-verbally. “Speakers use various facial gestures to stress specific words or phrases, to explain pauses for a word search, to indicate a question, and to demarcate the beginning, continuation, or end of a story” (Bavelas et al., p. 14). Gestures help educators maintain the rhythm and flow of a conversation and to improve how they communicate with students and colleagues. For example, “collateral communication” defines how facial gestures sustain and move a conversation forward (Bavelas et al., 2014). Visualizing collateral communication in video feedback can help students use the feedback because collateral communication functions formatively. Collateral gestures emphasize and contextualize words, phrases, and comments. There are several key terms associated with collateral communication that instructors can build into a multimodal feedback experience for their students.

An “emphasizer” emphasizes words and ideas with facial and hand movements. A “question marker” uses facial and hand movements after a question or comment to reiterate that their statement is a question. The “thinking face” demonstrates that someone is mining their memory for the right word or idea to communicate to an audience, and it contextualizes the pauses and silences in a conversation (Bavelas et al., p. 14-15). Using a broader range of paralinguistic activity to generate formative feedback that reinforces certain ideas and clarifies communication is an undervalued student-centered pedagogy. When students can see the instructor's face while they are thinking, questioning, or emphasizing, they have additional cues to contextualize the meaning of the feedback. “Speakers spontaneously emphasize, particularize, embellish, or replace words with their facial displays, gestures, and other depictions” all the time, and these forms of communication are important for teaching and learning but are often times overlooked or dismissed as irrelevant (Bavelas and Chovil, 2000, p. 167). Facial gestures are visible acts of meaning that can enhance communication between students and teachers.

Facial expressions offer educators another communication tool to consider when designing multimodal feedback experiences. Peräkylä & Ruusuvaori (2006) classified facial expressions as either “semiotic” or

“relational.” Semiotic facial expressions emphasize or clarify feedback. Someone moving their eyebrows up and down to reiterate a word or to reshape the meaning of a word is an example of a semiotic expression. Someone rolling their eyes while saying the word “harsh” to describe how they’ve been treated at work is another example of a semiotic facial expression. The eye-rolling is a semiotic expression that represents the word harsh as sarcastic, giving it an alternative meaning. Relational facial expressions move communication forward and “signal and monitor affective cues between the participants” at critical moments in a communication cycle (Peräkylä & Ruusuvuori 2006, p. 132). Someone moving their eyebrows or hands to signal they are done speaking so the addressee can speak—that there is an opening for someone to speak—would be an example of a relational cue. These types of cues are less useful for video feedback since students do not synchronously respond to prerecorded video comments. Facial expressions contextualize and inform an instructor’s feedback, and video—as a medium—affords instructors an opportunity to record gestures and expressions and facilitate a multimodal feedback experience for their students.

Creating Multimodal Feedback Experiences

The most important takeaway from the research on feedback is that effective and useful feedback is not entirely dependent on a medium or mode. Many students assert that their preference for a certain form for feedback is dependent on the type of assignment (Cavanaugh, 2014, p. 129). There are students, assignments, and learning outcomes that may benefit from feedback in one medium versus another. Students mentioned that “some genres might be more suitable for video feedback than others” and that no single form of feedback is more or less effective than another if it fails to incorporate opportunities for them to keep learning and to feed forward (Özkul and Ortaçtepe, 2017). Instructors should consider how using a medium to provide feedback on an assignment and learning outcome has advantages and disadvantages. Written, video, and audio comments have more or less value depending on the assignments and learning outcomes they address and whether or not the comments are formative. Making a video to give feedback on a quiz or an assignment at the end of the term may not be the most valuable use of instructional time. An assessment tool like a quiz promotes summative feedback and closes off opportunities to provide students with formative comments. Instructors should select a medium and mode to fit the feedback situation, but they should also consider the assignment and how it leaves room for formative comments.

The most important characteristic of a multimodal feedback experience is that the comments are formative. If instructors design feedback loops and numerous paths for students to move their learning forward, their feedback will have value regardless of the medium used to make and deliver it. Implementing feedback loops and formative questions and comments helps students feedforward and it is the most effective method to facilitate dialogic feedback. Without opportunities for students to learn with the feedback, if the feedback does not teach students something, the medium and its modal affordances become less and less important because students need and want more chances to continue learning. The formative feedback instructors give students on their assignments is more representative and paradigmatic of the learning occurring in that course than the class size, learning outcome, and student background and cognition (Smith, McCarthy, and Magnifico, 2017, p. 124).

Summative feedback is on the opposite end of the feedback spectrum. Instructors should avoid using too much summative feedback because it has limited pedagogic and dialogic potential as a teaching tool. Summative feedback eliminates or decreases additional learning spaces for students. To move away from summative feedback, instructors can provide students with multimodal feedback experiences that take advantage of written, audio, and video comments. When designing multimodal feedback experiences, instructors should start with formative comments, account for the advantages and disadvantages of different mediums under the given learning contexts, and then utilize a medium for feedback that fits that context.

One significant advantage of written feedback is that instructors do not have to record it in a quiet place, and it does not require software or a technological tool to create. Instructors can quickly write comments next to a specific area on the student paper, but those comments need to be legible. Handwritten feedback on a paper can be difficult to read and interpret. Furthermore, the margins of a paper limit the space instructors have to generate comments, forcing them to squeeze comments into tiny white spaces around the paper. Instructors tend to over use cover words and phrases that are passive, summative, and/or ambiguous when they have little to no space on a student paper for feedback. Extensive written feedback can take more time to write than to verbalize. Instructors can speak about 150 words a minute on average (Martin, 2019). Lunt and Curran (2009) found that a “one-minute audio recording is equal to six minutes of writing” (p. 762). If instructors can produce more feedback for students when they verbalize it, and if that feedback is primarily formative, it will most likely include more detailed comments,

questions, feedback loops, and dialogic characteristics that can sustain and extend teaching and learning. Written comments on the paper have been unable to provide students with a high-quality feedback experience. It is difficult to replicate the advantages of speaking to students with written feedback.

Audio and video feedback afford teachers opportunities to utilize multiple modes to design feedback experiences that feed students forward and overcome some of the limitations of written feedback (Lunt and Curran, p. 760). Instructors can use video and audio feedback to simulate a conversation and talk directly to students about how to improve their learning. They can use their voice, gestures, and expressions to clarify and enhance the meaning of their feedback and to personalize their pedagogy. An instructor's voice and visual presence can personalize the course and demonstrate a commitment to learning, which is especially valuable for mediated and online courses that lack face-to-face interaction. Talking to students on camera can lead instructors away from long summative explanations and justifications for why grades were earned. Audio and video feedback are particularly effective when instructors want to speak to their students about learning outcomes, goals, and objectives and to simulate a face-to-face experience. Instructors can use video and audio feedback to deemphasize grades, reflect on their feedback quality, and shift the attention away from themselves and on to their students. These shifts of focus force instructors to reflect on their feedback quality.

When instructors made multimodal feedback, they reflected on the effectiveness of their feedback. Making multimodal forms with a "digital stimulus" gave instructors a "digital jolt" that initiated a reflection on their teaching, feedback, and students' learning (Chapman and Ortlieb, 2015, p. 261). Reflecting on the value of one's feedback and making adjustments to improve its effectiveness is dialogic and student-centered. Activities and practices that facilitate and promote reflection lead instructors to make improvements and revisions to their pedagogy. Instructors will need to overcome some limitations to take advantage of the affordances of multimodal feedback experiences. Recording sounds and video footage require a controlled environment and a recording device. Video and audio files also need to be uploaded to a secure location so students can access them safely. Addressing all of the technological and environmental variables of multimodal feedback is beyond the scope of this paper, but instructors should be aware of these variables when making multimodal feedback.

Conclusion

Instructors should use a variety of mediums to provide students with feedback throughout the course term. Relying on one mode of feedback only, such as written feedback, can prevent instructors from identifying the limitations of their feedback and designing formative and dialogic feedback experiences for their students. Implementing a range of mediums and modes to create and deliver feedback can expand students' learning opportunities. The objective of a multimodal feedback experience is to select a medium to design formative feedback that is appropriate for the learning context and allows students to continue learning. Instructors should use written, audio, or video comments to respond to a range of learners because different mediums have advantages and disadvantages that shape how instructors design feedback. One medium may be more effective for giving students feedback on certain activities, assignments, and learning situations than another and instructors should choose a medium to deliver feedback based on the learning context.

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