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Online learning under COVID-19: re-examining the prominence of video-based and text-based feedback

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Abstract
During the COVID-19 pandemic, higher education institutions have been faced with a rapid shift to remote digital learning across courses. The resultant proliferation of online learning in traditional, hybrid, and distance higher education courses has enhanced the possibilities for technology-supported student-centered learning design. The prominence of feedback in student-centered teaching could be argued in two ways: (1) instructed learning is based on interaction and communication in which the teacher provides personalized information to students about their progress and (2) feedback is oriented towards students' improvements, which in turn guides student engagement. Therefore, feedback addressing students' personal needs integrates multiple dimensions and profoundly influences learning. In response to J. Borup, R. E. West, and R. Thomas (2015)'s article *The Impact of Text Versus Video Communication on Instructor Feedback in Blended Courses* we discusses the efforts to prepare higher education for online learning. During the pandemic, teachers rapidly faced requirements for providing feedback to students remotely and performing all teaching roles online. The authors in this section build a strong argument that feedback with a supportive function is essential in a time when students and teacher are working remotely. They argued for personalized learning requiring feedback at different points of the learning process that utilizes a range of feedback functions and forms and, most of all, employs contextualization and a situated approach.

Keywords Covid 19 · Learning design · Teacher feedback · Feedback delivery · Video- and text-based communication · Online learning · Blended learning · Higher education

During the COVID-19 pandemic, higher education institutions have been faced with a rapid shift to remote digital learning across courses. The resultant proliferation of online learning in traditional, hybrid, and distance higher education courses has enhanced the possibilities for technology-supported student-centered learning design.

Educational technology transited from a content transmission orientation, focusing on visual and audio-visual aids to audio-visual communication of messages that teachers

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designed for students. There has been a transformation from educational technology that mainly supported the teacher's roles and functions in teacher-centered teaching to student-centered teaching, and from a concentration on media selection to a focus on media affordances in learning design (Reiser and Gagne 1983; Reiser 2001). The prominence of feedback in student-centered teaching could be argued in two ways: (1) instructed learning is based on interaction and communication in which the teacher provides personalized information to students about their progress and (2) feedback is oriented towards students' improvements, which in turn guides student engagement. Therefore, feedback addressing students' personal needs integrates multiple dimensions and profoundly influences learning.

Although students use digital technologies and expect higher education learning environments to integrate these technologies to accommodate student needs and preferences, there is a gap in technology integration (Hammond 2014). Research has reported issues connected with accessibility and the readiness of higher education teachers among which are teaching competences, beliefs about technology-integrated teaching and inequality in access despite the availability of online learning resources (Istenič Starčič and Lebeničnik 2020).

Borup et al. (2015)'s article *The Impact of Text Versus Video Communication on Instructor Feedback in Blended Courses* discusses the efforts to prepare higher education for online learning. The article addresses the use of text-based and video-based online resources for teacher feedback. Teacher feedback is an essential element in pedagogical interaction and can nurture or hinder learning. During the pandemic, teachers rapidly faced requirements for providing feedback to students remotely and performing all teaching roles online.

Communication features and technology affordances in the current highly interactive nature of computer-mediated communication (CMC) utilize various modalities to support teachers in providing feedback to students in a variety of formats and quantities while addressing a diverse set of purposes. CMC integrates older "written" procedures—those linked both to phonetic writing in its print-version and to the more sophisticated video and television technologies and distance-communication technologies like the telegraph and the telephone—*and has been able to replace the traditionally oral dimensions of education without destroying what has seemed to be an irreplaceable privilege of the classical face-to-face classroom situation* (Istenič Starčič 2001, p. 12).

The broad possibilities of technology-assisted feedback available to teachers require strategies on the part of both the teacher and the students. Feedback encompasses multilevel dimensions that come into interplay in specific cultural contexts and settings. Utilizing the medium of writing or the medium of oral exposition in face-to-face interactions or video-based situations requires a teacher's strategies and skills. Teacher feedback drives the pedagogical process in which feedback interaction provides the framework for directing students' requirements and intended learning outcomes and setting learning climate and socio-emotional support.

Feedback is essential in the design of engaging learning environments (Spector and Davidsen 1997) and comprises providing diagnostic, formative, and summative assessments. Feedback has two main functions: the verification of students' input in terms of correctness (i.e., corrective feedback) and exploratory feedback, which aims to elaborate on students' actions and performance after the feedback is received (Shute 2008). The latter has an important function in feed-forward processes (Price et al. 2010). Feedback is by its nature multidimensional and encompasses both the cognitive and socio-emotional domains; it is associated with learners' engagement (Nicol 2010), achievement, motivation,

behaviour, self-regulation (Wisniewski et al. 2020) and satisfaction (Garrison and Arbaugh 2007).

With the spread of student-centered pedagogy, feedback is no longer understood as a one-way transmission from the teacher to the student with the object of providing corrective information but has, rather, expanded towards a dialogic framework (Nicol 2010), helping to establish a continuous interaction that facilitates learning as the construction of knowledge and, as such, essentially establishes the learning environment. The supportive function of feedback has been neglected in large classes (Nicol 2010); however, online technologies offer a variety of ways for teachers to provide one-to-one feedback.

Teachers' knowledge includes understanding how feedback is perceived and received by students and how students take action and engage in learning after receiving feedback, for example, by reflecting on their own learning and outcomes relative to the feedback and adjusting their learning for improvement. Feedback interactions are highly culturally sensitive and thus involving different media which may employ different cultural norms and codes of written or spoken communication.

In this special issue, we discuss text-based and video-based feedback in a blended learning course through the perceptions of student teachers and teacher educators (Borup et al. 2015). The authors point to personalized feedback, which has been in the spotlight within mass higher education. They discuss distance education with a reference to the technological innovation of synchronous audio and video conferencing, which has facilitated more interactive teaching methods in distance education. Weighing these against asynchronous text, which was favored by collaborative-constructivist approaches to online learning (Borup et al. 2015), they examine asynchronous video-based feedback, which integrates the benefits of both (Borup et al. 2015). The authors argue for the importance of addressing instructional methods and media in learning design. They are interested in the ways asynchronous text feedback capitalizes on asynchronous text communication and adds the characteristics of verbal and non-verbal cues. Critically analyzing feedback from the perspective of media richness theory, they identify three elements: content and utility, timing and efficiency, and delivery and affective support. The authors designed and conducted a mixed-method research study comparing video feedback and text-based feedback examining these three elements of constructive feedback. Video feedback was found to be more convenient for student support with students' perceiving it as having more affective values, and text-based feedback was found to be more convenient for exploratory feedback aligned with students' perceptions of efficiency.

The research problem addressed in this study is highly relevant in current online learning environments, in which teachers face challenges in providing one-to-one feedback in the context of diverse digital environments (e. g. massive online courses) offering diverse technologies for multimodal feedback. The current circumstances of the COVID-19 pandemic require more remote learning, thus challenging teachers to provide students with one-to-one feedback, the findings of Borup et al. (2015) offer a solid ground for designing an online learning environment that addresses the multidimensional nature of feedback.

Four authors responded to Borup et al. (2015), referring to a set of five perspectives: the practice perspective, the research/practice, the practice/research/design/inclusion, and the design/culture/inclusion perspective. These short responses build a strong argument that feedback is a source of social-emotional support enabling social presence in a remote learning COVID-19 situation and examine the affordance of approaches utilizing technology solutions concerning contextual factors. From the responses, it is obvious there is a need for learning design that addresses the need for teachers and learners to shift rapidly to online teaching and learning.

Nicol Howard's argument offers support for the position of practice response and explores teachers' facilitative feedback that establishes the teacher's social presence. She elaborates on the findings of Borup et al. (2015), arguing for the need for effective feedback benefiting from both video-based and effective text-based forms. She supports her argument with practical cases illustrating affective video-based and effective text-based feedback.

Patrick L. Lowenthal discusses the research and practice perspective, indicating how to offer concise and multilevel feedback to students in the circumstances of the COVID-19 pandemic. He points to the affordances of different approaches and technology solutions for video-based feedback (e.g., the screencast vs. the webcam approach). In contrast to the empirical findings of Borup et al. (2015), he argues for video-based feedback, which supports more detailed and informative feedback than does text-based feedback. He also provides guidelines for video-based feedback for different kinds of tasks, for diverse learners and at different stages of the course.

In her response, Regina Kaplan-Rakowski addresses research, design, practice, and inclusion and argues for the importance of ensuring emotional support, mental wellness, and social presence sustaining connections between socially isolated teachers and students.

Tracy Ryan's response addresses the design perspective, referring to cultural and inclusivity issues. Her three key design considerations are universal and can support teachers' pedagogical decisions, especially in rapid transition to online teaching. This response features the affordances of video-based feedback providing socio-emotional support for affective outcomes of online students.

In large classes, due to teachers' heavy workload, priority is given to learning outcome–related feedback rather than feedback for social support (Nicol 2010). The authors in this section build a strong argument that feedback with a supportive function is essential in a time when students and teacher are working remotely. They argued for personalized learning requiring feedback at different points of the learning process that utilizes a range of feedback functions and forms and, most of all, employs contextualization and a situated approach.

To extend their discussion, an examination of learning technology that compares textual-based and video-based feedback is inconclusive; multimodal feedback that facilitates learning environments for personalized learning should also be examined. The specific context of learning design requires the selection of learning technology affordances according to the principles of learning (e.g., the authenticity of learning and learners' characteristics and needs). To point to two obvious cases, (1) learning analytics informs the provision of written and/or video-based feedback and/or (2) video-based feedback, and the instructional video gives the ground for contextualized, situated learning (Tochon 2007), providing constructive feedback integrating authentic learning experience.

Media integration in feedback for learning contexts where teachers and students working remotely should be addressed in learning design with a theoretical framework. Favoring one media over another and comparing media (Clark 1983) has been overwhelmed with cognitivists focusing on studying media within specific contexts in which tasks, objectives, and learner support are underlined within a given theory. Wisniewski et al. (2020), in a large meta-analysis, explored the effectiveness of feedback channels or media use and among them of audio-, video, or computer-assisted instructional feedback, concluding that feedback channel per se is non-significant. Mayer (2001) pointed out the learner-centered approach with a basic question about how to integrate media to enhance human learning. Thus, understanding and conducting feedback depends on the practitioner's understanding of learning.

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