Journal of Effective Teaching in Higher Education

Student Perceptions of Teacher Online Feedback: An Integrative Review

Nancyruth Leibold, Southwest Minnesota State University, nancyruth.leibold@smsu.edu
Laura M. Schwarz, Minnesota State University, Mankato

Abstract. Teacher feedback is a core feature of the student educational experience and impacts student development. Educators can learn about teaching practice from student perceptions of teacher online feedback (TOF). This integrative research review explores student perceptions of TOF in higher education using modified PRISMA guidelines. The researchers searched six academic databases and included 12 articles for deep analysis and evaluation after three rounds of article reviews. Students reported a preference for timely TOF to help improve their performance. Participants noted a variety of preferred feedback mediums, such as video, text, and audio. Support for the Community of Inquiry (CoI) theoretical framework was present in the research findings. The studies reviewed ranged from high to lower levels of evidence. Scholarship of Teaching and Learning (SoTL) implications stress that online teacher feedback is a complex and contextual skill to develop. The teacher's online feedback method and medium should match the student population's preference. Research findings about student perceptions of TOF in higher education are critical for application by faculty to advance the SoTL.

Keywords: Community of Inquiry (CoI); teacher online social presence; teacher online feedback; feedback medium

In recent years, interest in the evidence base of best practices for teachers giving online feedback to students continues to expand. Online higher education continues to grow (National Center for Education Statistics, 2022), necessitating improved faculty knowledge and skills for online teaching practices. The teacher's skill of giving quality online feedback is crucial to enhancing learner development (Leibold & Schwarz, 2015). The present study focuses on student viewpoints of helpful and effective teacher online feedback (TOF).

Background of Online Feedback

Feedback is information or data from another person specific to an assignment or skill performance that may include validation or explain gaps in performance (Douglas et al., 2016; Kamiya, 2018). Feedback should be timely, clear, easy to understand, and purposeful in supporting improvement and development (Leibold & Schwarz, 2015). Online feedback is information or data provided online with 24/7 access. Formative assessments throughout a course provide frequent feedback opportunities to note flourishing performance areas and areas needing correction (Steele & Holbeck, 2018; Wiggins, 2012). Summative feedback is an evaluation at the end of an event or time (Jug et al., 2019). Both formative and summative feedback are opportunities for providing helpful dialogue and tips to promote

learner development. Knowledge of student perceptions of TOF provides data about feedback strategies that help and those that can be improved.

The Community of Inquiry (CoI) framework guides teaching, including feedback practices. The CoI framework includes three vital concepts: teaching presence, social presence, and cognitive presence. These concepts should be applied together and are mutually essential in developing deep and meaningful online experiences (Annand, 2011), inclusive of providing feedback. Teaching presence means designing and implementing cognitive and social processes to promote individualized learning and meaning (Anderson et al., 2001). Social presence is projecting emotional expression, communicating openly, and creating a cohesive community of inquiry (Garrison et al., 1999). Garrison et al. (1999) define cognitive presence as the degree to which participants within a community of inquiry build meaning through continued communications. Cognitive presence over sustained periods promotes critical thinking skills (Garrison et al., 1999).

Various online feedback mediums exist, including handwritten and scanned notes, typed text notes, automated software, and audio and video recordings. Espasa et al. (2022) reported that students preferred video feedback, but the medium type (text, audio, or video) did not impact student performance. Sarcona et al. (2020) reported that most students preferred text feedback over audio feedback and noted an association with perceived learning style. The researchers of this study sought to identify the viewpoints of students who receive TOF.

Purpose and Research Questions

This integrative review aimed to evaluate student perceptions of TOF and strategies for providing quality feedback to the population of students in higher education. Effective TOF is an increasingly important aspect of teaching praxis and is in the early research evidence development stages. Instructional and learning practices are quickly changing with the modern-day use of technology. Teacher practice and research in higher education must also progress to reflect changes. Feedback from teachers influences student experience and performance (Adams, 2019). The Research Questions (RQ) were:

- RQ1: What are student perceptions of TOF in higher education?
- RQ2: What are student perceptions of text, audio, and video feedback in higher education?
- RQ3: What are student perceptions about teacher online social presence in higher education?
- RQ4: What are the qualities of the study methods and designs?

Methodology

A mixed-methods, integrative review study design guided the investigation of student perceptions of TOF. The integrative review study design is a broad approach that allows for the inclusion of experimental and non-experimental research in the exploration (Whittemore & Knafl, 2005) of TOF research. An integrative review is well suited to educational research because it amalgamates experimental and non-experimental evidence findings from various online feedback strategies. The mixed-methods approach incorporates qualitative and quantitative data allowing for the analysis and synthesis of multi-perspective research evidence into themes and findings.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) are guidelines for reviewing and reporting systematic reviews and meta-analyses (2021). However, researchers may also use PRISMA for integrative and other research reviews (PRISMA, 2021). The investigators used a modification of the PRISMA framework for reporting in this integrative review study. The key aspects of integrative reviews are identification, screening, eligibility, and included articles. Moher et al. (2009) recommend including the type of review (for example, systemic review or meta-analysis) in the article's title, as done in this study. PRISMA recommends describing the search process for articles, inclusion/exclusion criteria (see Figure 1), review phases to make the included article selections (see Figure 2), participants, interventions, study appraisals, article synthesis, limitations, conclusions, and implications for practice (Moher et al., 2009).

The peer-reviewed article search process included six major databases from 2014 to 2021 to find research on teacher online feedback. Search terms/phrases used were feedback, online feedback, online feedback by faculty in higher education, online teacher feedback and higher education, TOF, online faculty feedback, and online educator feedback. The researchers used expanded searches and the Boolean operators "or" and "and" to group search phrases and found 772 research journal articles from the database searches. Next, researchers excluded 701 of the 772 publications by checking the title and abstract for search terms, inclusion/exclusion criteria, and duplicates. The remaining 71 full-text articles were retrieved, read twice, and evaluated using inclusion/exclusion criteria. See Figures 1 and 2 for more information about the inclusion and exclusion criteria and PRISMA flowchart. There was an exclusion of 59 of the 71 articles by this phase's end. Researchers reread all articles and discussed them, leading to a final inclusion count of 12 research journal articles.

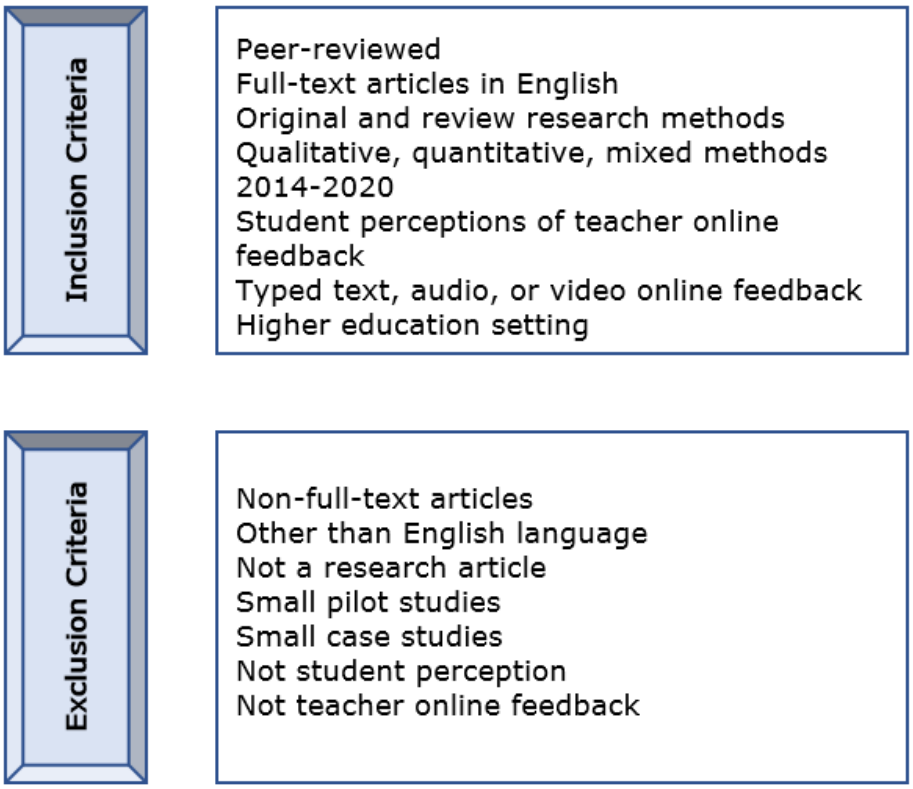
Extraction of Data and Data Analysis

The researchers created a summary table that included the complete reference for each of the 12 research articles and read each article several times. Next, researchers recorded details in the table, including study method, design, research questions, hypothesis/hypotheses, sample size, sampling strategy, and the country of study origin. Also included were statistical data or qualitative analysis, levels of evidence, study rigor, possible risk of bias notes, and significant results. The

researchers likewise noted insights that each study offered. Each researcher independently completed the table, followed by meetings to compare results for a consensus and emerging themes. The table was helpful to the researchers in extracting, organizing, and analyzing data to discover common themes.

Figure 1

Study Inclusion and Exclusion Criteria

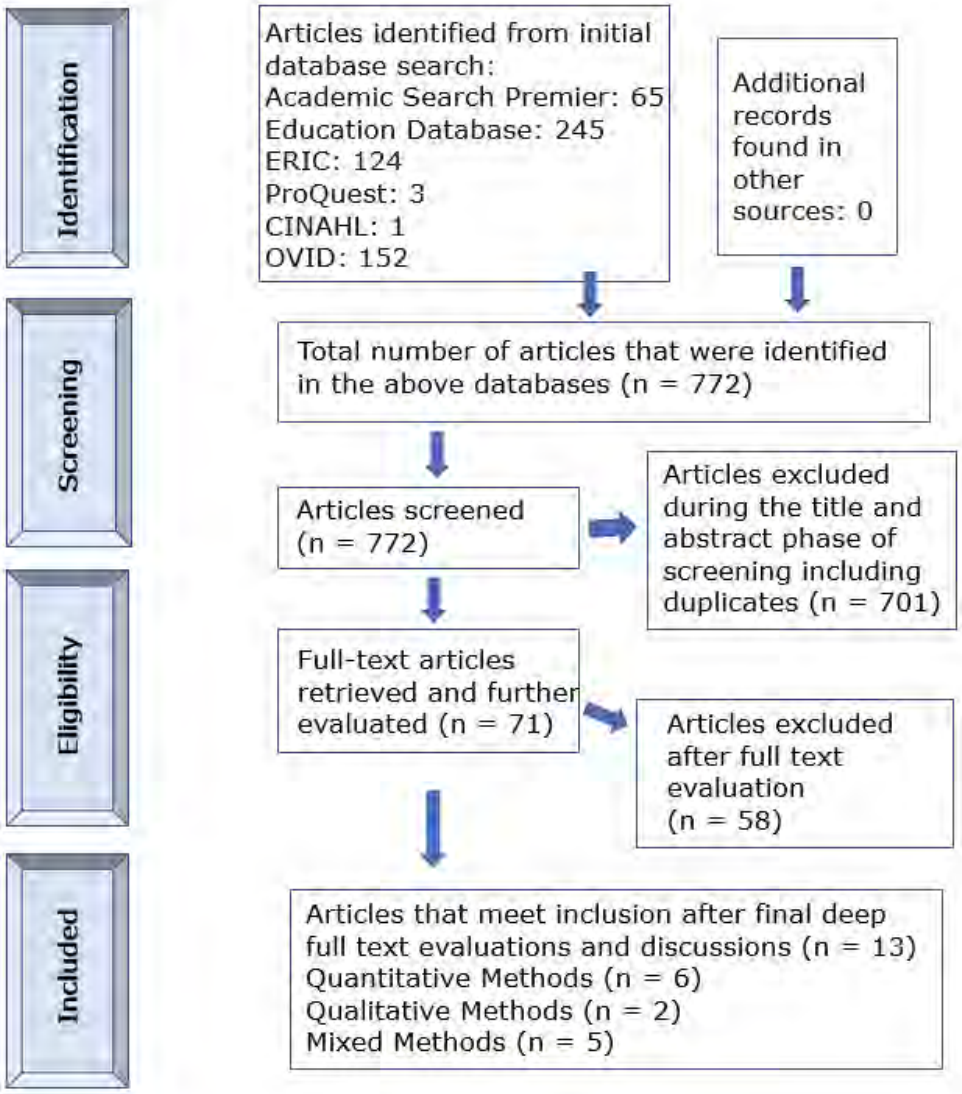


Evaluating Study Quality

The researchers used a modified integrative review of the qualitative, quantitative, and mixed methods studies framework focused on methods and concepts described by Hong and Pluye (2019) to assess study quality. The methods dimension refers to the trust in the approach related to sampling and the risk of bias. The conceptual dimension refers to the study's insightfulness. Credibility, generalizability, transferability, dependability, and confirmability were key aspects under review in the studies. Researchers reviewed studies for internal and external validity, reliability, and objectivity. The reporting quality of meaning accuracy, completeness, and transparency is specific to the research manuscript's quality. For example, should participants drop out of the study during the data collection phase, do the researchers describe the process for handling the data or a reason for dropping out? Researchers should also describe the data synthesis related to the purpose (Hong & Pluye, 2019). The researchers combined the seven levels of

Figure 2

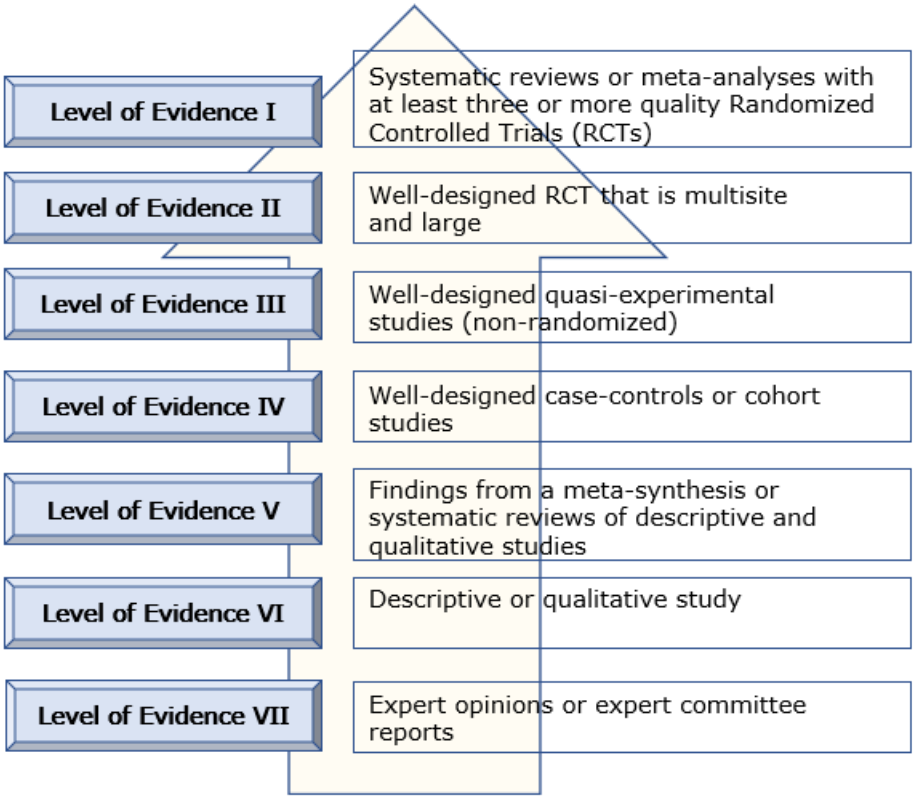
PRISMA Literature Search and Inclusion Flow Chart



evidence (see Figure 3) characterized by Melnyk and Fineout-Overholt (2019) with the framework by Hong and Pluye (2019) to assess study quality. The quality assessment of each research article included methodology, conceptualization, reporting quality, purpose, and data synthesis. Research on online teacher feedback is in the early stages, and this study sought to evaluate recent research.

Figure 3

Levels of Evidence



Note: From Melnyk and Fineout-Overholt (2019).

Results

RQ1). What are student perceptions of TOF to students in higher education?

Timely feedback was perceived as desirable by students. Parkes and Fletcher (2017) studied video versus written feedback. Students preferred a quick turnaround time of audio feedback with a simple recording instead of sophisticated or edited recordings that took additional time to receive. Gredler (2018) investigated student feedback preferences, with timely feedback emerging as a minor theme. Along with being timely, students commented that the feedback should include why points were deducted and include examples. Most (86%) participants in Jones and Blankenship's (2014) study findings partially or totally agreed that feedback was timely enough to use in subsequent course assignments. On the contrary, Douglas et al. (2016) found that 50% of students perceived less timely feedback, while 20% perceived that feedback was timely. Further, the timeliness of the feedback was a factor in their perception of a negative or positive feedback experience. See Table 1 for study summaries.

Most studies highlighted the developmental value of online feedback to students for improving their work. Most of Jones and Blankenship's participants perceived feedback helpful in reaching course goals (96%) and enhancing course performance (95%). Likewise, Marshall et al. (2020) determined that student writing growth also resulted from video feedback. Student comments indicated that the feedback helped them learn from their mistakes and grow as writers. Online feedback was also found valuable in that it was motivating. Pan and Shao (2020) determined a significant positive effect of online feedback on learning motivation and engagement (n = 312) although learning engagement partially mediated the relationship of learning motivation.

Douglas et al. (2016) studied what learners (n = 321) perceive as feedback and the educational value of the feedback, specifically formative versus summative feedback. Most learners found summative feedback vital. However, only 24% of students were able to recognize formative feedback as necessary to improve, and 34% wanted only summative feedback. Students did not always connect that they should use formative feedback to improve their skills and knowledge. This finding contrasts with the findings of other researchers who found that feedback was helpful in development, hence of value.

A variety of other feedback preferences emerged in the studies. Gredler's (2018) participants preferred clear, detailed, constructive, and supportive written feedback placed near the assignment content. Jones and Blankenship (2014) studied preference for a medium of feedback and feedback helpfulness. Students most favored the award of a numerical grade but found using a rubric with a summary of comments and corrected spelling and grammar helpful.

Table 1

Research Summaries of Student Perceptions of TOF

	Authors Year	Purpose & Feedback type	Level of Evidence, Methodology, Design & Sampling	Student Perceptions
1	Ali (2016)	Determine the effect of video feedback on enhancing students' writing skills and structure and determine students' perceptions of video feedback on their writing.	Level II Randomized mixed methods, pre-posttest survey, independent t-tests. Convenience sample (n = 63) undergraduate students (33 experimental group-video feedback, 30 control group-written feedback) in Egypt.	Most (94%) students perceived video feedback as personal and individualized, felt valued, and paid more attention to videos, perceived videos as motivating.

	Authors Year	Purpose & Feedback type	Level of Evidence, Methodology, Design & Sampling	Student Perceptions
2	Borup et al. (2014)	Determine students' perceptions of instructor social presence with video-only feedback versus written-only feedback.	Level IV Non-Randomized mixed methods, independent t-tests. N = 229 undergraduate elementary and secondary education students in in blended educational technology courses (99 control group [n = 75] written only, 130 experimental group [n = 105] video only in USA.	No statistical difference between groups. Qualitative findings indicated video feedback perceived as more helpful in establishing instructor social presence than written-only feedback.
3	Dias & Trumpy (2014)	Determine student satisfaction with individual written/group written feedback verses individual written/group audio feedback.	Level IV Non-randomized, quasi-experimental, quantitative, one-tailed t-test. N = 99 undergraduate business communication students (control group n = 49 individual and group written feedback, experimental group n = 50 individual written feedback and group audio feedback) in USA.	Perceived written individual/group audio feedback as enhancing teacher social presence and showing genuine concern of instructor regarding whether students learned.
4	Douglas et al. (2016)	Determine learners' perceptions of feedback, including what constitutes feedback, educational value,	Level VI Mixed methods open-ended survey, thematic analysis. N = 321 first and second-year undergraduate education, biomedical science, exercise	24% perceived formative comments important in linking feedback to improvement, but 34% wanted only summative feedback. Did not always perceive formative

	Authors Year	Purpose & Feedback type	Level of Evidence, Methodology, Design & Sampling	Student Perceptions
		how and why they actively seek it, and responses to feedback.	science, environmental health, health science, medical radiation science, and nursing majors in Australia.	feedback helpful in improving learning. Tended to perceive summative feedback as important.
5	Gredler (2018)	Determine students' preferences for written teacher feedback.	Level IV Sequential explanatory research design with a mixed methods survey; Descriptive frequencies and qualitative data analysis for themes; N = 93 online graduate (95.6%) and undergraduate social science, health sciences, and "other" majors in USA.	Perceived detailed and supportive feedback placed close to content is helpful in improving writing skills and understanding deductions. Preferred clear, detailed, constructive, and supportive feedback.
6	Jones & Blankenship (2014)	Examine student perceptions about online assignment feedback, feedback type preferred, helpfulness of and satisfaction with the feedback.	Level IV Quasi-experimental research design, convenience sample with one treatment group, quantitative survey. N = 70 legal and applied business students in a southern university serving the Hispanic population in USA.	Perceived rank order of usefulness (highest to lowest): assignment grade, rubric, summary of comments, corrected spelling and grammar. 96% found feedback useful in reaching course performance goals and 92% satisfied with the amount of feedback.
7	London (2019)	Study the effects of audio feedback versus text feedback in online	Level III Quantitative, quasi-experimental post-test design using the CoIQ. N = 202 RN-BSN undergraduate nursing students (one	Preferred text-only feedback over audio feedback. Text feedback was positively correlated with student satisfaction.

	Authors Year	Purpose & Feedback type	Level of Evidence, Methodology, Design & Sampling	Student Perceptions
		discussion boards.	group n = 100 received audio-only feedback, the other group n = 102 received text-only feedback for online discussions) in the USA.	Audio feedback was negatively correlated with student satisfaction.
8	Marshall et al. (2020)	Explore students' perceptions of both written and video feedback and the impact on writing growth.	Level VI Qualitative, descriptive, semi-structured interviews about feedback received. Used Atlas, a coding and qualitative analysis program. N = 26 graduate students in hybrid research methods course in USA.	Three themes of video feedback perceptions were 1) positive; 2) helped improve instructor social presence; and 3) student growth was a result. Perceived video feedback as more specific, personable, and less threatening than written.
9	Pan & Shao (2020)	Determine student perceptions of TOF and the relationship with motivation to learn.	Level IV Qualitative cross-sectional design with interventional group only, reliability coefficient. N = 312 undergraduates in hybrid English courses (ELL) in China.	Significant positive correlation/effect of online feedback perceived as influencing both learning motivation and learning engagement.
10	Parkes & Fletcher (2017)	Examine student perceptions of online audio feedback.	Level IV Quantitative longitudinal, posttest survey with Likert scale. N = 225 postgraduate computer education students in Australia.	Audio feedback was preferred and with higher rated perceptions of quality and quantity versus past written feedback. Preferred prompt feedback via simple recording over sophisticated or

	Authors Year	Purpose & Feedback type	Level of Evidence, Methodology, Design & Sampling	Student Perceptions
				edited recording they had to wait for.
11	Seckman (2018)	Evaluate impact of video versus text-based feedback on teaching, social, and cognitive presence in online learning communities.	Level III Quasi-experimental cross-sectional interventional study using COIQ. Convenience sample n = 100 students (37 undergraduate and 63 graduate students) in USA.	The video feedback group perceived better awareness of teaching, social, and cognitive presence than the group who received written feedback
12	West & Turner (2016)	Determine student perceptions of feedback including preferences for video versus written feedback, understanding feedback, time spent reviewing feedback, and instructor rapport.	Level IV Mixed methods with post-survey. Chi-square and one-way analysis of variance for quantitative data. Key themes and issues analyzed for qualitative data. Convenience sample, n = 142 undergraduate first-year BS education students in Australia.	Most (61%) favored video verses written (21%) feedback. Comments on video included "clearer and less ambiguous than other forms of feedback…improved both the quality and quantity of the feedback…greater rapport with their tutor and…greater insight into the assessment process" (p. 400).

RQ2). What are student perceptions of text, audio, and video feedback in higher education?

Students perceived video feedback as a positive and/or superior medium of online feedback in several studies. Ali (2016) studied student perceptions (n = 63) of online video feedback's effects on their writing. Most (94%) perceived the video feedback as personal and individualized, made them feel valued, and paid more attention to the videos than other online feedback mediums. Students indicated the videos were "succinct, unambiguous, multimodal, personal, feed forward, and motivating" (Ali, 2016, p. 119). However, some students (9%) preferred written feedback because video feedback was more time-consuming to view. Marshall et al.

(2020) explored student perceptions of video and written feedback on their research proposals. Findings were similar to Ali's (2016) in that most students preferred video feedback over written feedback. Students perceived video feedback as more specific and personable, and it helped them grow as writers. Likewise, West and Turner's (2016) study (n = 142) found that 61% of students preferred video feedback versus 21% who preferred written feedback. Students commented that the video was less ambiguous, provided better quality and quantity of feedback, fostered a greater rapport with their tutors, and provided better insight into evaluative processes. Borup et al.'s (2014) qualitative findings indicated that students (n = 22) perceived video feedback as more effective for forming instructor social presence than written feedback. Students described videos as more conducive to conveying emotions, conversation, interaction, and connection.

Three of the articles examined compared audio to written feedback. Parkes and Fletcher (2017) explored student perceptions (n = 225) of audio feedback mediums. Participants preferred audio feedback over the written feedback they had previously received, with higher quality and quantity ratings. In contrast, London (2019) found that students (n = 202) preferred text-only feedback over audio feedback for discussion boards. A third study by Dias and Trumpy (2014) comparing audio versus written feedback had different findings. This study examined students' satisfaction with individual and group written feedback (n = 49) versus individual written and group audio feedback (n = 50). The student group who received individual written and group audio feedback perceived that the instructor genuinely wanted the students to learn.

RQ3). What are student perceptions about teacher online social presence in higher education?

CoI is a framework that "represents a process of creating a deep and meaningful learning experience through the development of three interdependent elements—social, cognitive, and teaching presence" (Community of Inquiry, n.d.). CoI arose as a theme in some articles related to perceptions of TOF. Borup et al.'s (2014) qualitative findings were that students found video-only feedback more helpful in forming instructor social presence than text-only feedback. With video feedback, "instructors could better speak with emotions, talk in a conversational manner, and create a sense of closeness with students" (p. 232). However, quantitative findings indicated no statistically significant difference in perceptions of social presence between the experimental group (n = 105), who received video feedback, and the control group (n = 75), who received written-only feedback. This finding was possibly due to the blended course delivery negating instructor presence through feedback.

Marshall et al. (2020) also found that students perceived video feedback as promoting instructor presence. Students' comments indicated that video feedback helped build the student-faculty relationship. In a study of online audio versus written feedback, a combination of group audio feedback and individual written feedback was found to enhance teacher social presence (Dias & Trumpy, 2014). Seckman (2018) used the CoI Survey Questionnaire (CoIQ) to study the effect of

video versus text feedback and found that the video feedback group perceived better teaching, social, and cognitive presence than the group who received text feedback. London used the CoIQ to measure differences between audio and text-only feedback regarding perceptions of teaching, social, and cognitive presence. In contrast to the aforementioned studies, London found that teaching presence increased with text-only feedback but decreased with audio-only feedback. Perceptions of social and cognitive presence were not affected by either text or audio feedback mediums.

RQ4). What are the qualities of the study methods and designs?

The fourth research question, "What are the qualities of the study methods and designs?," addresses levels of evidence and rigor of study method and design. See the previous Figure 3 describing the seven levels of evidence by Melnyk and Fineout-Overholt (2019). The levels of evidence of the 12 studies ranged from level II to level VI. Three of the 12 studies had high evidence levels (see Table 1). Nine studies had moderate or lower evidence levels (see Table 2).

Table 2

Study Rigor and Limitations

	Authors Year	Study Limitations Presented by Authors
1	Ali (2016)	Small sample negates generalizability, short study duration
2	Borup et al. (2014)	Findings not generalizable, in-person interactions possibly affecting social presence of video feedback; instructor feedback limited to student projects
3	Dias & Trumpy (2014)	Authors noted internal validity limitations with survey; survey questions may not indicate actual satisfaction with feedback, response homogeneity creating inaccuracies, potential bias in answering questions, and differing response rates between sections; external validity limitations: generalizability of study's populations, potential differences in perceptions over time (studied over two terms)
4	Douglas et al. (2016)	Student perceptions affected by other experiences
5	Gredler (2018)	Small sample and participant self-selection; native-English speaking graduate students experienced in online learning [limits generalizability]
6	Jones & Blankenship (2014)	Small convenience sample limits generalizability

	Authors Year	Study Limitations Presented by Authors
7	London (2019)	Online RN-BSN sample from one public university limits generalizability
8	Marshall et al. (2020)	Authors noted study design with interviews conducted after the semester concluded, in-person interactions [possibly taints results of perceptions of online feedback]
9	Pan & Shao (2020)	Self-reported data may impact results accuracy; cross-sectional design possibly biasing results; small sample size/narrow focus of English language learning course [limits generalizability]
10	Parkes & Fletcher (2017)	Authors recommended trialing audio feedback first; study audio feedback with diverse groups and undergraduates as this study was conducted with post-graduates
11	Seckman (2018)	Sample limited to online informatics course in single-location limits generalizability; self-reported data impacting accuracy of results; multiple sections of same course with varying faculty may impact feedback quality/consistency
12	West & Turner (2016)	First semester undergraduate participants may have strongly preferred video feedback based on novelty; longer videos equaled greater time spent reviewing/perceptions of greater value of video feedback over written feedback

Discussion

This review sought to critically analyze and summarize the literature from 2014-2020 regarding students' perceptions of TOF. The online educational modality is increasing (National Center for Education Statistics, 2022), and so is the evidence of the effectiveness of TOF.

Student Perceptions of TOF

Timely, clear, detailed, and supportive feedback were emerging themes. Desiring timely feedback was a common finding (Marshall et al., 2020; Gredler, 2018; Pan & Shao, 2020; Parkes & Fletcher, 2017). Timely feedback to support improvement and development is consistent with previous work by Leibold and Schwarz (2015) and Kamiya (2018). Clear, detailed quality and supportive feedback was a common positive student perception (Gredler, 2018; Pan & Shao, 2020; Parkes & Fletcher, 2017). Ninety-five percent of respondents reported that their work improved due to TOF (Jones & Blankenship, 2014). Previous work regarding the importance of formative and summative course feedback is consistent with this study (Jug et al.,

2019; Steele & Holbeck, 2018; Wiggins, 2012). Both formative and summative feedback are opportunities for providing clear, detailed, and supportive feedback.

An insightful finding in this review was related to bridging feedback with improving performance. Douglas et al. (2016) found that some students needed to connect using feedback to improve their skills and knowledge base. However, Ali (2016) reported improvement in performance by students who received balanced feedback on what was done well and how to improve. On the contrary, Jones and Blankenship (2014) found that 56% of participants did not care if they had positive feedback but wanted to know what to improve. Providing students with specifics on how to improve is desired by students (Jones & Blankenship, 2014).

Student Perceptions of Feedback Medium

Researchers gained insight into the preferences of varied student groups for specific feedback modalities. RN-BSN students preferred text-only feedback to audio feedback (London, 2019), while first-year students liked video feedback as it was specific and personable (Ali, 2016). West and Turner (2016) reported that the video medium was less ambiguous for undergraduates. Seckman (2018) found that nursing students favored video feedback regarding teaching, social, and cognitive presence. The variance of findings of medium preference is consistent with Espasa et al. (2022), who reported a preference for video feedback, and Sarcona et al. (2020), who found that students preferred text feedback. Population and in-person contact may impact feedback medium inclinations. One possible explanation is that different populations or course purposes (nursing versus English majors or undergraduate versus graduate levels) may result in unique preferences. Another possible reason, as Borup et al. (2014) acknowledge, is that the teachers may have in-person contact with students, although the feedback was online. Based on the evidence, student populations have varied feedback preferences.

Feedback and Community of Inquiry

Support for the CoI theoretical framework of teacher online social presence was present in the findings. Online feedback contributes to teaching, social, and cognitive presence, though results varied by study and feedback medium. The results of this study are consistent with Anderson et al. (2001), who stress the importance of individualizing student learning to promote teaching, social, and cognitive presence. Interactions within the CoI framework (Annand, 2011) and communications (Garrison et al., 1999) are in the study findings. Perceptions of video feedback were that it was more helpful in establishing teacher social presence than written-only feedback (Borup et al., 2014). Seckman (2018) found that the video feedback group had a greater perception of teaching, social, and cognitive presence than the written feedback group. Video feedback was perceived to promote teacher presence (Marshall et al., 2020). Dias and Trumpy (2014) found enhanced teacher social presence by combining group audio feedback and individual written feedback. London (2019) found an interesting result that audio feedback decreased student perception of teaching presence and text feedback increased teaching presence. Varied study findings may relate to mediators such as

teaching presence, research design, population, education level, and measures. Overall, the findings in this study found connections to the CoI framework and feedback research.

Quality Appraisals of Study Methods and Designs

Only one study had control and experimental groups with randomization that allows for causality (Ali, 2016). Most studies had small sample sizes and were of moderate rigor. Although higher levels of evidence are best, educational research rigor includes evaluating the research and being thorough, responsible, reasonable, and accurate (Williams & Kimmons, 2022). Research reviewed in this study displayed responsibility by authors self-reporting possible biases and limited generalizability, such as in-person contact with students (Borup et al., 2014). In-person contact to clarify feedback and social presence are not negative teacher behaviors but could impact research data. Having in-person live communication with a student may skew research data when focusing on online feedback methods because of the differences between online feedback and in-person discussions. In some research articles, whether in-person contact may or may not have occurred was not clearly stated. The differences in communication may impact research results as a confounding variable affecting the independent and dependent variables. However, researchers could clarify in research reports if there was contact. Additionally, in-person contact with teachers on campus may impact student perceptions even when a course is online. For example, the student may have more live, in-person contact with the teacher and the ability to clarify feedback instead of total online communication with a teacher. Therefore, researchers should indicate if they had in-person contact with student study participants in research reports. Implications for future research are to use larger sample sizes, provide thorough research processes, and randomize participants into control and experimental groups.

Strengths and Limitations

A literature gap exists in randomized experimental designs to study student perceptions of TOF. The study by Ali (2016) was the only one with randomized experimental design rigor used for cause and effect. The best practice for determining cause and effect from an intervention is to use the random assignment of study participants to the control and experimental groups (Melnyk & Fineout-Overholt, 2019). Control and experimental groups with randomization and larger sample sizes would improve the rigor of future studies.

CoI, as a part of the study, is both a strength and a limitation. The CoI framework used by some researchers was a strength. Further studies that examine the use of CoI could provide valuable data. Future research recommendations include the additional analysis of all three constructs, teaching, social, and cognitive presence, and the relationships between the three. A possible limitation of this study is that CoI and social presence were intentionally omitted as literature search terms to discover how much the CoI framework was in the literature. The researchers found that CoI was present in the research literature about feedback. Possibly, if the researchers had included CoI or teacher online social presence as search terms, it

would have substantially impacted the study results. The CoI presence may be a strength as it allowed the researchers to find the use of CoI without inputting CoI literature search terms. The researchers intentionally did not search for the CoI framework or teacher online social presence to evaluate if it would surface.

Some studies did not address extraneous variables that may impact results. One example of an extraneous variable is the procedure for not allowing the control and experimental groups to contaminate the results by conversing. Another extraneous variable example is how email, phone, web conference, or in-person follow-up clarification of feedback might have occurred. Additional communication is appropriate for teacher behavior but may have impacted some results. More research is necessary to compare in-person contact to online-only contact groups to examine the effect of the contact variable on student perceptions of TOF. For example, does in-person contact result in more teaching or social presence than online contact? Describing feedback types in studies and research procedures would also help identify implications. For example, studies could include the procedure for video feedback. Specifically, researchers should indicate if the assignment is shown on the screen with video feedback, a summary of feedback comments, the face of the teacher, or a combination of the face of the teacher and paper or comments. To explain the feedback processes, researchers should improve the research procedures' reporting quality (completeness and description).

Teaching Practice Recommendations

Teachers should provide coaching tips for using feedback to improve future student performance. One way to shift energy to betterment is by saying, "Please use this feedback to help improve the next revision of this paper." Teachers may also include specific details, such as "Please use this feedback to help improve _____ for your next revision of the assignment." Online educators can use the evidence findings to practice timely, clear, detailed, and supportive feedback to help students improve their performance.

Teachers should know their student populations to know which feedback medium is preferred. For example, when a student population prefers video feedback, the teacher should consider incorporating this modality into the course. Educators could survey the students about their preferred feedback format in the online setting. Online teachers who have in-person contact with students can incorporate in-person feedback meetings.

Implications for teaching practice include encouraging students to email or phone for clarification and assistance and communicating availability and a timeframe for answering emails and messages, such as 24–48 hours. Other teaching implications include being present in online discussions and crafting announcements with a personalized approach, such as asking students about something they wrote and addressing students by their preferred names and pronouns.

Conclusions

Effective TOF is a vital skill to improve student performance. Timely TOF as a student preference is a key finding of the study. Teachers should strive to provide timely feedback to students. The researchers did not search for the CoI framework, yet found several studies that support the use of the CoI framework. Parkes and Fletcher (2017) reported that students prefer timely feedback over advanced and complex audio feedback. Researchers found diverse student preferences for text, audio, and video feedback in the integrative review. The researchers assert that the context of the student population may explain the differences in feedback medium preferences. Another conclusion was that most studies had moderate research method levels and design rigor. The researchers recommend that future researchers use the highest level of research methods and design to improve the quality of evidence. Level two research that includes the random assignment of participants to a control group or experimental group for an intervention is the best research method and design to examine cause and effect (Melnyk & Fineout-Overholt, 2019). Teachers should craft feedback to help students develop their skills and coach students to use the feedback to improve their performance. By considering the student population and their preferences, teachers can select the most effective methods and media for providing online feedback. Future scholarship in TOF is warranted to develop the body of evidence.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

References

Adams, G. (2019). A narrative study of the experience of feedback on a professional doctorate: "A kind of flowing conversation." *Studies in Continuing Education*, *41*(2), 191–206. https://doi.org/10.1080/0158037X.2018.1526782

Ali, A. D. (2016). Effectiveness of using screencast feedback on EFL students' writing and perception. *English Language Teaching*, *9*(8), 106–121. https://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=EJ1106616

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, *5*(2), 538–551. https://doi.org/10.24059/olj.v5i2.1875

Annand, D. (2011). Social presence within the Community of Inquiry framework. *The International Review of Research in Open and Distance Learning*, *12*(5), 40–56. https://files.eric.ed.gov/fulltext/EJ963922.pdf

Borup, J., West, R. E., Thomas, R. A., & Graham, C. R. (2014). Examining the impact of video feedback on instructor social presence in blended courses.

International Review of Research in Open & Distance Learning, *15*(3), 232–256. https://doi.org/10.19173/irrodl.v15i3.1821

Community of Inquiry. (n.d.). *CoI Framework*. CoI. https://CoI.athabascau.ca/CoI-model/

Dias, L. P., & Trumpy, R. (2014). Online instructor's use of audio feedback to increase social presence and student satisfaction. *Journal of Educators Online*, *11*(2), 1–19. https://doi.org/10.9743/JEO.2014.2.5

Douglas, T., Salter, S., Iglesias, M., Dowlman, M., & Eri, R. (2016). The feedback process: Perspectives of first and second year undergraduate students in the disciplines of education, health science and nursing. *Journal of University Teaching & Learning Practice*, *13*(1), 1–19. https://doi.org/10.53761/1.13.1.3

Espasa, A., Mayordomo, R. M., Guasch, T., & Martinez-Melo, M. (2022). Does the type of feedback channel used in online learning environments matter? Students' perceptions and impact on learning. *Active Learning in Higher Education*, *23*(1), 49–63. https://doi.org/10.1177/1469787419891307

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, *2*(2), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6

Gredler, J. J. (2018). Postsecondary online students' preferences for text–based instructor feedback. *International Journal of Teaching & Learning in Higher Education*, *30*(2), 195–206. https://www.isetl.org/ijtlhe/pdf/IJTLHE3002.pdf

Hong, Q. N., & Pluye, P. (2019). A conceptual framework for critical appraisal in systematic mixed studies reviews. *Journal of Mixed Methods Research*, *13*(4), 446–460. https://doi.org/10.1177/1558689818770058

Jones, I., & Blankenship, D. (2014). What do you mean you never got any feedback? *Research in Higher Education Journal*, *24*, 1–9. https://files.eric.ed.gov/fulltext/EJ1064104.pdf

Jug, R., Jiang, X., & Bean, S. M. (2019). Giving and receiving effective feedback: A review article and how-to guide. *Archives of Pathology & Laboratory Medicine*, *143*(2), 244–250. https://doi.org/10.5858/arpa.2018-0058-RA

Kamiya, N. (2018). An analysis of the meaning of "natural" concerning oral corrective feedback. *TESL-EJ*, *22*(1), 1–12. https://tesl-ej.org/wordpress/issues/volume22/ej85/ej85a4/

Leibold, N., & Schwarz, L. M. (2015). The art of giving online feedback. *The Journal of Effective Teaching*, *15*(1), 19–31. https://uncw.edu/jet/articles/vol15_1/leibold.pdf

London, J. (2019). Use of asynchronous audio feedback in discussion boards with online RN-BSN students. *Nurse Educator*, *44*(6), 308–311. https://doi.org/10.1097/NNE.0000000000000633

Marshall, D. T., Love, S. M., & Scott, L. (2020). "It's not like he was being a robot": Student perceptions of video-based writing feedback in online graduate coursework. *International Journal for the Scholarship of Teaching and Learning*, *14*(1). https://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=EJ1256273

Melnyk, B. M., & Fineout-Overholt, E. (2019). *Evidence-based practice in nursing and healthcare: A guide to best practice* (4th ed.). Wolters Kluwer.

Moher, D., Liberati, A., Tetzlaff, J., Altman D. G., for the PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *BMJ*, *29*(7716), e78–336. https://doi.org/10.1136/bmj.b2535

National Center for Education Statistics. (2022). Undergraduate enrollment. *Condition of education. U.S. Department of Education, Institute of Education Sciences.* https://nces.ed.gov/programs/coe/indicator/cha

Pan, X., & Shao, H. (2020). Teacher online feedback and learning motivation: Learning engagement as a mediator. *Social Behavior & Personality: An International Journal*, *48*(6), 1–10. https://doi.org/10.2224/sbp.9118

Parkes, M., & Fletcher, P. (2017). A longitudinal, quantitative study of student attitudes towards audio feedback for assessment. *Assessment & Evaluation in Higher Education*, *42*(7), 1046–1053. https://doi.org/10.1080/02602938.2016.1224810

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). (2021, March 2). Welcome to PRISMA! http://prisma-statement.org/

Sarcona, A., Dirhan, D., & Davidson, P. (2020) An overview of audio and written feedback from students' and instructors' perspective. *Educational Media International*, *57*(1), 47–60. https://doi.org/10.1080/09523987.2020.1744853

Seckman, C. (2018). Impact of interactive video communication versus text-based feedback on teaching, social, and cognitive presence in online learning communities. *Nurse Educator*, *43*, 18–22. https://doi.org/10.1097/NNE.0000000000000448

Steele, J., & Holbeck, R. (2018). Five elements that impact quality feedback in the online asynchronous classroom. *Journal of Educators Online*, *15*(3), 176–180. https://doi.org/10.9743/jeo.2018.15.3.10

West, J., & Turner, W. (2016). Enhancing the assessment experience: Improving student perceptions, engagement and understanding using online video feedback. *Innovations in Education and Teaching International*, *53*(4), 400–410. http://doi.org/10.1080/14703297.2014.1003954

Williams, D. D., & Kimmons, R. (2022). Qualitative rigor. In R. Kimmons (Ed.), *Education research across multiple paradigms* (1st ed., 2.3). BYU Open Textbook Network. https://open.byu.edu/education_research

Wiggins, G. (2012). Seven keys to effective feedback. *Educational Leadership*, *70*(1), 10–16. http://www.ascd.org/publications/educational-leadership/sept12/vol70/num01/Seven-Keys-to-Effective-Feedback.aspx

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, *52*(5), 546–553. https://doi.org/10.1111/j.1365-2648.2005.03621.x