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Educational Psychology

An International Journal of Experimental Educational Psychology

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/cedp20

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To cite this article: Lan Yang, Ming Ming Chiu & Zi Yan (2021) The power of teacher feedback in affecting student learning and achievement: insights from students' perspective, Educational Psychology, 41:7, 821-824, DOI: 10.1080/01443410.2021.1964855

To link to this article: https://doi.org/10.1080/01443410.2021.1964855

Published online: 27 Aug 2021.

EDUCATIONAL PSYCHOLOGY
2021, VOL. 41, NO. 7, 821–824
https://doi.org/10.1080/01443410.2021.1964855

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EDITORIAL

The power of teacher feedback in affecting student learning and achievement: insights from students' perspective

Effective use of feedback improves student achievement, showing a large effect size of .70 (Hattie's 2017 meta-analyses of 80,000 independent studies). Recently, Wisniewski et al. (2020) meta-analysis of 435 studies highlighted high-information feedback (i.e., containing information on self-regulation during learning process) is most effective (d =.99). However, the mechanisms by which students use this feedback to improve their learning remains unclear. After receiving teacher feedback, students might respond in various ways that differ from the teacher's expectation(s). Indeed, students' and teachers' perceptions regarding the quantity and quality of teacher feedback often differ substantially (e.g., Hattie & Clarke, 2019; Price et al., 2010; Yang, 2021).

To unveil the mechanisms by which feedback affects students' learning and achievement, researchers need to investigate the relationships among teacher feedback, student feedback beliefs, student motivation, student interpretation of the feedback, and student responses. In Poulos and Mahony (2008) words, "while effective feedback has frequently been identified as a key strategy in learning and teaching, little known research has focused on students' perceptions of feedback" (p. 143). Consistently, Hattie and Gan (2011) argue that "we know much about the power of feedback, but too little about how to harness this power and make it work more effectively in the classroom" (pp. 249–250).

This special issue features six outstanding studies that examine how teacher feedback affects student learning and achievement from the perspective of students. These studies reflect a critical research trend of capitalising on students' insights into the effects of teacher feedback.

Three studies examine the mediating effects of students' growth-oriented goals, feedback beliefs, and school identification on achievement, feedback use and engagement. Specifically, from a perspective of students' goal setting, Burns et al. (2021) study examined the role of teacher feedback–feedforward (corrective and guidance information for improvement) and personal best goal setting in students' mathematics achievement. In a sample of 362 Australian students, personal best goal setting not only predicted students' mathematics achievement, but also fully mediated the relationship between teacher feedback-feedforward and achievement.

In a similar vein, Winstone et al. (2021) explored the mediating effects of four feedback beliefs (self-efficacy, utility, accountability, and volition to implement feedback) between personality and achievement goal orientation and students' feedback use. In their sample of 746 students aged 16–18, students' perceived capability of using feedback (i.e., feedback self-efficacy) mediated all of these associations, and perceived feedback utility and volition to use feedback mediated part of the associations. Winstone et al. (2021) highlighted feedback self-efficacy as a key priority for interventions.

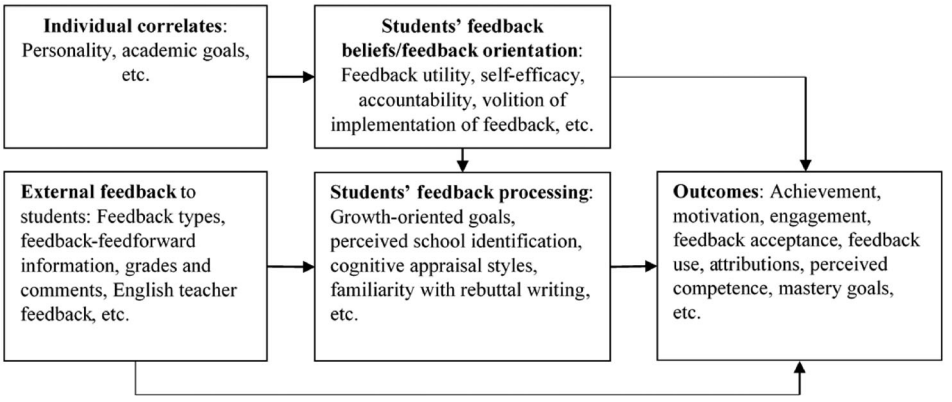

Figure 1. Key variables examined in the six studies and mapped into the feedback ecological model (adapted from Yang et al., 2014). *Note.* In this special issue, these contributors examined the links of the variables mapped into this model in six studies, not in a single study. Based on the key findings identified in the six studies, future research may design more sophisticated/robust studies to cover more variables and examine the appropriateness of the feedback ecological model in assisting interpretations and discussions.

Carvalho et al. (2021) tested the mediating effect of students' school identification on the link between teacher feedback and students' engagement. With a relatively large sample size of students ($n = 2534$) from 6th to 12th school year, Carvalho et al. (2021) found both direct and indirect effects of teacher feedback on supporting students' engagement through students' perceived school identification, and some moderation effects from students' secondary course. This study highlights students' school identification as an important mediator of teacher feedback effects.

In the fourth study, Man et al. (2021) shared a similar interest in examining student engagement with a sample of Chinese undergraduate students ($n = 118$) learning English. They implemented a rebuttal writing activity that aims to enhance the effects of teacher feedback on undergraduate students' engagement in English writing. In rebuttal writing, these scholars required students to provide a rationale for not only their responses to teacher feedback comments on their writing, but to justify the revisions they have made. The results generally supported the role of rebuttal writing in helping students to use teacher feedback. Students' familiarity with the writing task boosted the benefit of writing rebuttals by taking consideration of teacher feedback.

The fifth study by Shin et al. (2021) examined how 172 Korean primary students' cognitive appraisal styles (threat vs. challenge) and feedback types (positive vs. negative; person vs. task) affected acceptance of teacher feedback and motivation. After each student completed a writing task, each one received feedback one week later. Students with the challenge style had higher feedback acceptance for positive task-oriented feedback and higher motivation when receiving negative-oriented feedback, compared to those with the threat style. Comparatively, students with the threat style benefitted more from negative task-oriented feedback. This study highlighted the importance of personalised feedback by considering students' cognitive appraisal styles.

In the last study, Koenka et al. (2021) conducted four meta-analyses: two of them examined the impact of grades versus no performance feedback on academic motivation and achievement, and the remaining two explored grades versus feedback comments on academic motivation and achievement. Studies reviewed covered elementary and secondary

schools. The results of grades versus no performance feedback showed grades have mixed effects. Students who received grades as quantitative feedback information outperformed (d =.25) those who received no performance feedback, but they also reported less intrinsic motivation (d = −.19) and more external motivation (d = .35) as compared to their ungraded peers. The results of the impact of comments versus grades on students' intrinsic motivation showed the overall effect size was significant (d = .32). Students who received comments also reported significantly lower external attributions than their graded-only peers. Students who received comments on assessments performed higher than those with grades only (d = .30).

Together, these studies of student perspectives of teacher feedback helped fill the research gap of feedback mechanisms for improving student learning and performance. See also Figure 1, trying to present an overall picture of the key variables examined in the six studies and mapped into the feedback ecological model (adapted from Yang et al., 2014).

We are thankful for all reviewers who kindly agreed to review submissions to this special issue and provided critical feedback, helpful advice, and valuable insights. We sincerely thank these international colleagues who share a concern for the perspectives of students and contributed their corresponding research. All these efforts collectively contribute to a meaningful special issue to enrich the existing literature on feedback. We hope that these research studies in this issue will facilitate more robust research on examining the perspectives of students to understand how feedback affects students' learning in many complex and multidimensional ways. These quantitative studies with diverse research designs provide solid measures of feedback-related constructs to complement the field's many theoretical frameworks/conceptual models and small, qualitative studies. This special issue, based on the six quantitative studies, takes a small step forward in advancing the field of feedback from the student's (psychological) perspective.

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