Author: Prof. Dr. Richard Göllner

On the Equivalence of Teaching Quality in Face-to-Face and Distance Teaching

Your full name:

Prof. Dr. Richard Göllner

Affiliated authors with institutions:

Dr. Ann-Kathrin Jaekel

Affiliation:

Hector Research Institute of Education Sciences and Psychology, University of Tübingen, Germany

Current position

Professor for Educational Effectiveness and Educational Trajectories

Title of your paper

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Abstract (300 words)

Teaching quality is considered as a crucial element to explain students learning. Existing conceptualization of teaching quality differentiate between multiple quality aspects. For these quality aspects, the relevance for students learning experiences was shown in a large number of studies (Göllner et al., 2018; Wagner et al., 2013). Previous research on teaching quality focused mainly on face-to-face classrooms, which are characterized by a high degree of predetermined structure of the given classroom context. In spring 2020, however, the context of the traditional classroom has significantly changed: Over a period of many weeks, teaching and learning took place at a distance in order to contain the COVID 19-pandemic. The present study aims to investigate differences and similarities of students' perceptions of teaching quality in the contexts of face-to-face and distance teaching. By using two large-scale assessments conducted in 2019 and 2020, we examined the dimensionality of students' teaching-quality ratings and their associations with students learning experiences in terms of their perceived competence, academic effort, and enjoyment of learning in German language Arts and mathematics. The results showed that quality dimensions can be factor-analytically separated for teaching in both learning contexts. In addition, the results showed that the teaching-quality dimensions were associated with students' learning experiences, whereas the associations were more pronounced for the context of face-to-face teaching than for distance teaching. Further analysis for the context of distance teaching revealed more pronounced associations for lessons conducted with video meetings than for teaching without video meetings which emphasizes the relevance of students' learning context.

Extended summary (1000 words, excluding reference list) Include introduction, theoretical background, methods, aims, preliminary findings/findings, results, theoretical and education significance, relevance to the QUINT ambition and the reference list.

Theoretical Background

Teaching quality can be considered as dependent of the teaching guided by the teacher but also depends on how it is perceived and used by the students (Doyle, 2013; Hamre et al., 2013). Teaching quality is commonly assessed based on the three domains classroom management, the support teachers provide for their students, or the extent to which learning

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is cognitively demanding (Klieme et al., 2001). In a number of studies. it could be shown that these domains of teaching quality are a crucial aspect to explain differences in students learning at school (Göllner et al., 2018; Wagner et al., 2013). In educational research and practice, student ratings are a commonly used method to assess teaching quality, which has many advantages: During their time in school, students experience many different teachers in different subjects. These broad experiences enable the students to base their impression about their learning environment on a variety of different impressions. Therefore, their ratings offer, compared for instance to observer ratings, valuable insights in the learning situation based on a wide period of experience. Thereby, student ratings allow scholars and practitioners to assess a wide variety of aspects of teaching quality and have been shown to be predictive of several student outcomes (e.g., Aldrup et al., 2018; Hamre & Pianta, 2010).

Previous research, however, has mainly focused on the context of face-to-face teaching and learning. However, this setting has tremendously changed in the past two years. The school closures to contain the COVID-19 pandemic has disrupted the teaching and learning as teachers, students, and parents have known it for several decades. Beginning with the year of 2020, teaching and learning took place at a distance through very different ways (Jaekel et al., 2021; Metcalfe & Perez, 2020). That is, students' school learning was decontextualized from their common classroom. Consequently, the degree to which distance teaching can be equivalently described in distance education in terms of teaching-quality aspects we know from face-to-face teaching is an open question. Thus, in the present study, we aim to investigate the equivalence of the assessment of teaching quality by student ratings in both contexts distance education and face-to-face teaching, and their associations with students' learning experiences.

Methods

In the present study, we made use of two large scale studies on students' perceptions of teaching quality. Data on face-to-face teaching were assessed in the study "Teaching and learning from students' perspective (UNITAS)" in summer 2019, in which 6.298 students participated. Data in distance education were assessed in the study "Teaching and learning in distance education (CUNITAS)" in summer 2020, right after the first school closures in Germany (N = 3.159). Both studies were conducted in the federal state of Baden-Württemberg, Germany and comprised the subjects of German language Arts and mathematics. We assessed six dimensions of teaching quality (monitoring, structure, support, feedback, challenging tasks, practicing) and three aspects of students' learning experiences (perceived competence, academic effort, enjoyment of learning).

Aims

Specifically, we examine the extent to which student ratings of teaching quality are a) comparable between face-to-face teaching in classroom and teaching at a distance and b) associated with students learning in classrooms or at home. Given the assumed reliance of teaching quality on the context in which learning occurs, we finally examined c) whether the context of learning at home shapes the perception of teaching quality.

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Results

The results of confirmatory factor analyses showed that the single quality dimensions can be statistically separated and revealed measurement equivalence of measures of teaching quality for face-to-face and distance teaching. Furthermore, the results showed higher mean scores for teaching in face-to face than for distance teaching. We additionally found that the associations of the teaching-quality dimensions with students' learning experiences were more pronounced for the context of distance education than for the context of face-to-face teaching. Finally, separate analysis for distance teaching revealed more pronounced associations for teaching conducted with video meetings.

Theoretical and Educational Significance

The present study extended a well-known conception of teaching quality to the context of teaching a learning at a distance. In line with theory, the results showed that teaching quality provides quality standards of teaching, which are not restricted to the context of face-to-face teaching in regular classrooms. In addition, the findings stress the importance of educational contexts in which learning takes place. A spatial, temporal, and social contextualization of students learning have been shown to be an important prerequisite to make teaching quality to a crucial element of students learning.

Relevance to the QUINT ambition

The present study fits very well to the QUNIT ambition and especially with Theme 1, "Studying teaching quality across subjects and settings". The study builds on a variety of teaching-quality dimensions in two subjects, German language Arts and mathematics and provides valuable insights into teaching quality in different settings and its associations with students learning outcomes.

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