

Studying the effectiveness of team teaching: Conceptual and methodological essentials
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Rationale

Team teaching is regarded as a promising educational strategy for teachers' professional development and enhancing students' outcomes. Although its promising character, the research field on team teaching remains conceptually scattered and without clear insight into the methodological quality of single studies. Furthermore, researchers and policy makers worldwide are calling for a more transparent overview of the effectiveness of team teaching in current teaching practices in order to provide evidence-informed decision-making. Assuming that experimental research designs are most appropriate for examining the effectiveness of educational interventions, a synthesis of these types of studies may advance current research practices to further demonstrate the impact of team teaching. For this reason, the aim of this paper is to explore how team teaching is conceptualized in experimental studies and to what extent these studies comply with methodological quality requirements.

Theoretical framework

To implement team teaching in a sustainable way, stakeholders must be clearly informed on why team teaching should merit their investment. This implies the need for empirical evidence on the effectiveness of team teaching. In line with best practices from other research fields, experimental research designs are considered the most appropriate strategy to convincingly claim causal evidence about the effectiveness of educational strategies (Gopalan et al., 2020).

While previous research confirms that experimental studies have been carried out within the field of team teaching, to date there is no overview to inform researchers and policy makers about the quality and trustworthiness of these studies. This paper fills this gap by examining the conceptual and methodological credibility of experimental research designs on the effectiveness of team teaching. Conceptual credibility refers to clarity in the definition, operationalization, and coherence of studied variables. Methodological credibility ensures transparency in study design and execution, considering differences to who and under what conditions research results are meaningful (Ming & Goldenberg, 2021).

Research design

A systematic review study was conducted, guided by the PRISMA protocol (Page et al., 2021). As a result, 31 experimental studies in the period between 2000 and 2022 were included and conceptually and methodologically assessed based on a conceptual framework and a methodological quality appraisal tool.

From a conceptual perspective, team teaching has various meanings and interpretations, as well as a variety of aspects that can influence its implementation. This implies that experimental studies are subject to a large number of variables. To group these variables, in order to assess conceptual credibility of experimental studies on the effectiveness of team teaching, we developed a framework based on four elements presented by Cronbach (1982) (i.e., units, outcomes, treatment, setting).

From a methodological perspective, experimental studies into the effectiveness of team teaching must meet requirements for methodological quality. All experimental studies were assessed using the Checklist for the Rigor of Education-Experiment Designs (Sung et al., 2019), including six quality criteria: (1) type of experimental design, (2) methods for baseline equivalence, (3) number of participants in each group, (4) reliability and validity of measurements, (5) fulfilment of statistical assumptions, and (6) reporting of effect sizes. In

addition, the level of rigor and the statistical power of the experimental studies were determined.

Results

Findings reveal that, so far, it remains a challenge to design experimental research that (1) provides sufficient information about how team teaching practices occurred, (2) deliberately delineates units and outcome measures, and (3) recognizes factors of the larger study setting. Also, methodological quality criteria expose small sample sizes, unsupported use and interpretations of outcome measurements, unfulfilled statistical assumptions and a lack of effect size reporting. This results in low levels of experimental rigor and insufficient statistical power.

Conclusions

This paper shows that the next aim in research on team teaching should be to produce experimental studies with quality methodological designs and clear conceptualizations of units, team teaching as a treatment, outcome measures, and the larger study setting. The implementation of these kinds of studies in the field of team teaching can finally provide policymakers and teachers with the necessary information to make evidence-informed decisions about team teaching practices. The conceptual framework and methodological quality appraisal tool presented in this paper can serve as a guideline for the development of these future experimental studies, and thus be of interest to all experimental researchers in the field of team teaching. We therefore recommend that future researchers build on both frameworks to unravel whether team teaching is a key strategy education systems are looking for to cope with current and future educational challenges.