Research summary

Developing and assessing students' collaboration in the IB programmes

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Introduction

Woven throughout the framework of the IB programmes is an emphasis on developing learners who exhibit intercultural understanding and are able to collaborate with others in a world with an ever-expanding focus on global exchange (IBO 2013). For the past several decades, numerous US federal reports and commissions have called for schools to more fully develop the collaborative skills of K-12 students. The report by the US Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS), for example, suggested that interpersonal skills and the ability to work and negotiate with others from diverse backgrounds are two of the six interpersonal competencies considered critical to success for 21st century students entering the workforce (SCANS 1991).

Instruction that develops the ability to work and negotiate with others, mentioned in the SCANS report (1991), is most frequently termed "collaborative learning" in K-12 educational contexts. In the preliminary search of the literature, however, the authors noted that both practitioners and researchers refer to collaborative learning, as well as associated methods of instruction, such as grouping, task design, and assessment using a broad set of frequently interchangeable terms. In order to capture the most inclusive picture of successful student collaboration in K-12 instructional settings, the authors incorporated research focusing on both collaborative and cooperative learning.

Through analyses of 153 studies and 47 curriculum documents throughout K-12 learning environments in both IB and non-IB contexts, the authors developed the following definition of collaborative learning, which includes the most salient aspects of all group instructional methods studied:

Collaboration is a social process of knowledge building that requires students to work as an interdependent team towards a clear objective resulting in a well-defined final product, consensus, or decision. Collaborative tasks and groups are structured so that teams of students must rely on one another to share resources (i.e., materials, knowledge, experience, insight, and skills), utilize meta-cognitive processes, and communicate with each other in order to complete a task and/or arrive at a consensus best achieved with equitable participation of all members.

Purpose

In order to identify theoretical approaches and practical aspects of student collaboration, researchers conducted a best-evidence synthesis (Slavin 1986) of research literature on student collaboration in K-12 settings across core content areas, including reading/writing, humanities, mathematics, and sciences. Additional searches were conducted for technology, cultural and linguistic diversity. According to Slavin (1986), "best evidence syntheses focus on the 'best evidence' in a field, the studies highest in internal and external validity, using well-specified and defended a priori inclusion criteria, and use effect size data as an adjunct to a full discussion of the literature being reviewed." The best evidence synthesis approach was chosen for this study because it allows for the inclusion, analysis, and discussion of a wide array of research approaches, including quantitative, qualitative and mixed methods studies.

This study describes relationships between teaching, learning, and assessment practices involved with the collaborative process across K-12 settings, with additional attention given to practices involving technology and various cultural or linguistic contexts, including international studies and those involving students learning in a non-native language. The purpose of the synthesis is twofold:

1. to identify research-based practices of teaching with, learning through, and assessing student collaboration, and

2. to use research-based themes in an analysis of IB curriculum documents in order to assess the extent to which the IB's collaborative teaching and learning practices align with research.

The present study expands upon the prior research by including effect size information for specific collaborative practices across K-12 settings, across content areas, and across outcomes. The authors also build on prior research by examining both achievement outcomes, as well as affective and behavioural outcomes.

Summary of findings

Overview of emergent themes

Eight major themes of successful collaborative processes emerged from the best evidence synthesis overall. The table below details each theme and related considerations.

Theme	Considerations
Specific and focused teacher role	Achieved in many cases by targeted professional development related to specific collaborative practices
Purposeful means of grouping students	Considering variables such as purpose of activity, ability level of students, familiarity of students with one another, social status, and sociocultural backgrounds and norms
Targeted incorporation of technology	Focused on a specific purpose with defined roles for students, which can be achieved by scaffolding processes inherent in technology itself and/or collaborative scripts
Roles for individual students	Involves instructing students on how to be a productive member of the group and outlining individual expectations so all students contribute equally to the group's intended outcomes
Task that is open-ended and/or multifaceted	Task must in some way require students to rely on one another for completion
Specific structuring of the collaborative process	Achieved by using a specific format, such as jigsaw, a collaborative script, or discourse format, as opposed to simply putting student in groups without consideration of the **whats**, **hows**, and **whys** of collaboration
Consideration of the social complexities of the collaborative process	Students' sociocultural and academic values, experiences and backgrounds must be taken into account
Sufficient time for cognitive processes involved in collaboration	Time for student discourse, discussion of readings, and/or creating and sharing representations of thinking

Major themes of successful collaborative processes

Overview of content analysis findings

A total of 47 IB curriculum documents were coded based on a priori themes pertaining to research in student collaborative learning. All documents examined, with the exception of three IB Career-related Certificate (IBCC) documents, contained at least one reference to collaboration as a student expectation from the IB learner profile. However, there was a degree of variation between IB programmes in terms of how often collaboration was mentioned and to what level of detail collaboration was discussed.

Across all programmes there needs to be more specificity about what collaboration is. This could be accomplished through the creation of a stand-alone general curriculum guide on student collaboration that could be referenced throughout the existing IB documents where collaborative learning is stated as a teaching/learning expectation. Specific strategies for teaching, learning, and assessment of student collaboration could be provided as an appendix and may be specific to the different IB programmes. Additionally, to address the disassociation between general curriculum guides and content guides, quality elements of collaborative learning that are already present in several of the IB curriculum guides could be incorporated into the content area guides, where appropriate.

Recommendations

Successful collaboration requires both teachers and students to understand and have opportunities to discuss what collaboration looks like; why it is being utilized in a particular situation over another method, such as independent learning; and how collaboration should be taking place in the classroom. Through professional development on specific collaborative practices and grouping methods, teachers are able to hone knowledge and skills related to collaboration. Likewise, students need opportunities to see teacher models of what collaborative talk and work look like and worthy tasks on which to collaborate. Students, along with their teachers, must schedule debriefing time to assess the quality of not just the collaborative work and associated products, but also the quality of the collaborative process itself.

It is recommended that the IB adopt a clear definition of collaboration for IB stakeholders, especially curriculum writers and practitioners. The definition of collaboration developed in this report is a combination of research on both collaborative and cooperative practices shown by research to have effects on both the achievement and motivation of K-12 students. Once a definition is adopted, IB curriculum documents should be revised, where appropriate, to include research-based aspects of successful collaboration most salient to particular student levels and subjects. Appendix H in the full report contains a "Practitioner Guide" summarizing study findings for IB teachers. This guide can serve as a stand-alone document to provide IB practitioners with information on the most critical considerations for creating successful collaborative environments in K-12 classrooms.

In order for successful collaborative practices to truly take hold in all IB programmes, professional development within each programme area on the definition and practice of successful collaboration will be needed, along with follow-up, which could include classroom observations and/or data collection from teachers and students. Finally, even though quality research on replicable means of assessing collaborative practices in K-12 classrooms is limited, the authors did find some studies that examined the use of assessments of collaboration in both K-12 and higher education environments (Ladouceur 2004). Further research is needed to determine whether such assessment practices could be replicated with other groups of students.

References

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