

Developing an Assessment of Teamwork

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KEY IMPLICATIONS

- A domain-neutral teamwork assessment was developed using multiple methods.
- The measure concurs with teachers' observations of their students, and makes visible the strengths and weaknesses of students' teamwork competency.

BACKGROUND

Many educational institutions, policy-makers and educators recognize teamwork as a competency for the 21st Century learner. However, a number of studies suggest that teamwork processes are complex and students do not instinctively practice teamwork. Another related challenge is the difficulty of assessing students' teamwork. This problem can be attributed to the various conceptual understandings of teamwork and also the practical aspects of measuring it. To address some of these challenges, this research aims to develop an assessment of teamwork competency in the form of a visual representation of individuals' teamwork competency. It will also serve as a means of formative assessment, allowing students to improve on their future teamwork processes. This assessment will be domain-neutral and aimed at groups in authentic computer-supported contexts such as teams of 3 – 5 members collaborating via synchronous group chats.

FOCUS OF STUDY

The main aim of the study is to develop a teamwork competency assessment using self and peer ratings as well as a semi-automated text analysis of a chat log.

KEY FINDINGS

The teamwork competency measure was developed conceptually and pilot tested for a self and peer rating instrument, resulting in the following six dimensions:

1. Coordination (COD): organizing team activities to complete a task on time
2. Mutual performance monitoring (MPM): tracking the performance of team members
3. Team decision making (TDM): integrating information, selecting the best solution, and evaluating the consequences in a team
4. Constructive conflict (CSC): dealing with differences in interpretation between team members through discussion and clarification
5. Team emotional support (TES): supporting team members emotionally and psychologically
6. Team commitment (TCM): identifying with and being involved in team goals.

With the same six dimensions, a coding scheme for the chat log was created, as well as a semi-automated text mining system using Natural

Language Processing (Shibani, Koh, Lai, & Shim, 2017). However, further work is needed to increase the accuracy and reliability of the text mining system and enhance the cohesion of the multiple measures. Despite these limitations, overall, from both the self ratings and coding scheme results, MPM seemed to be the least found behavior among students. CSC was also either in the middle or bottom rank of the dimensions. These findings suggest that students were generally weak at MPM and CSC. As for teamwork strengths, TES was generally higher.

This teamwork competency assessment was designed with alignment to a teamwork awareness program, which includes a set of pedagogical activities for learners' to reflect on their teamwork measure. Teachers and students were generally positive and receptive towards the program and the assessment. Students felt that the program helped them to know how others saw them, and understand themselves better in terms of the teamwork dimensions. Students enjoyed the online group activity, but found the reflection session difficult. On the other hand, teachers recognized the reflection session as important and wanted more time for their students to fully engage in this.

SIGNIFICANCE OF FINDINGS

This study is one of the pioneer projects that has developed a domain-neutral teamwork assessment involving multiple methods. Initial findings concur with teachers' observations of their students; and the assessment measure makes visible the strengths and weaknesses of students' teamwork competency. Based on these results, relevant interventions can then be designed and implemented.

Our findings have also touched on the larger practice of reflection. As such, structuring and planning the curriculum for greater opportunities for reflective inquiry, equipping students with the skills for dialogic talk and discussion, as well as meta-cognitive strategies for deeper thinking would be crucial. Similarly, teachers must be encouraged to do the same, to cultivate reflective practices and demonstrate them in the classroom.

PARTICIPANTS

A teamwork awareness program was designed and carried out over two sessions during the Interdisciplinary Project Work timetabled time of Secondary Two students in a mainstream school in Singapore. A total of 281 students participated in this study.

RESEARCH DESIGN

This exploratory study employed mixed methods and collected multiple data sources e.g., quantitative data from a pre-task survey and qualitative data from focus group discussions. We also used log files of the students' online chat as another data source. This chat log was content analysed with a teamwork dimensions coding scheme. Text mining was also carried out.

REFERENCE

Shibani, A., Koh, E., Lai, V., & Shim, K.J. (2017). Assessing the language of chat for teamwork dialogue. *Educational Technology & Society*, 20(2), 224-237.

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