ISSN 2010-3093

RESEARCH BRIEF SERIES

No. 21-015

Developing My Groupwork Buddy for Geography (MGBGeo)

Elizabeth Koh, Helen Hong, Betsy Ng and Tricia Seow

KEY IMPLICATIONS

- A web-based system called "My Groupwork Buddy for Geography" (MGBGeo) and an accompanying curriculum package in an authentic blended learning context for student's geographical investigation have been developed over two trials.
- Findings show that the project aims of students deepening their understanding of geographical topics as well as their growth in the 21st century competency of teamwork through the system and package have been generally met.
- A set of design principles is drawn from the study, applicable in blended or virtual learning.

BACKGROUND

MGBGeo is a techno-pedagogical tool developed to meet the dual goals of content mastery and 21st century competency of teamwork. MGBGeo is based on an existing system, My Groupwork Buddy (MGB), that was first developed to help students learn more about their personal teamwork competency and become more purposeful in teamwork. Funded by eduLab (NRF2015-EDU001-IHL08), MGB has been trialled in two schools in Singapore and received positive feedback from students and teachers, with evidence of students' peer-reported teamwork competency growth. While this was encouraging, MGB's design did not foreground academic content, which is also an equally important educational goal. Thus, in order to equally prioritize content mastery, MGBGeo was conceived.

FOCUS OF STUDY

The aims of this project are to develop the MGBGeo system and an accompanying curriculum package that will help Secondary school students deepen their knowledge and understanding of geographical topics as well as grow in the 21st century competency of teamwork. The project entails aligning MGB's underlying pedagogy with the existing geographical inquiry approach used in Singapore schools, as well as augmenting MGB with additional functions to meet Geography curricular needs. The study was enacted in geographical investigation (GI), a group project component in Singapore's Geography curriculum.

NIE NATIONAL INSTITUTE OF EDUCATION SINGAPORE

An Institute of

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

KEY FINDINGS

Findings showed that the project aims of deepening students' understanding of geographical topics as well as developing students' 21st century competency of teamwork through the system and package were generally met. The trials showed that self-reported perceptions of students' understanding of GI (both trials) and attitudes towards GI (Trial 2 only) significantly increased over the project. Qualitative findings further suggest that geographical knowledge growth focused more on procedural knowledge. This could explain why the association between GI attitudes and GI grades was small, where completing the task may not mean meeting certain teacher expectations.

For teamwork, only certain self-reported teamwork perceptions significantly improved, but not peer-rated teamwork competency. Still, qualitative findings share evidence of how students appreciated the opportunity to provide anonymous teamwork feedback, became more aware, and were able to improve their teamwork competency through self and peer assessment. The lack of larger teamwork gains could be due to less emphasis on teamwork monitoring and activities when home-based learning started in Trial 2. This was also a pedagogically challenging time for students and teachers.

Based on the trials, a set of design principles is identified for MGBGeo and its package to deepen students' understanding of geographical topics and growth in teamwork, applicable in blended or virtual learning.

SIGNIFICANCE OF FINDINGS

A techno-pedagogical tool and package that supports students' learning of geographical knowledge and teamwork competency was developed. The tool, its design principles and curriculum package for GI will be practically useful for students and teachers of geography. A teachers' guide with a lesson package is provided to offer teachers ideas and tips that they can utilize and adapt for their own lessons. Additionally, MGBGeo and the accompany package can be harnessed for courses in NIE such as demonstrating to pre-service teachers innovations in GI. The development deliverable at a policy level, aligns and showcases that the dual goals of content mastery and 21st century competencies can be complementary and harnessed together.

PARTICIPANTS

A pilot and two main trials were conducted with Secondary Three students (n = 159) who were from the Express stream in a regular school. A total of three teachers participated.

RESEARCH DESIGN

Design-based research methodology is used to develop the project which was planned for two trial cycles and mixed methods is employed to evaluate the implementation.

About the authors

Elizabeth KOH, Helen HONG, Betsy NG and Tricia SEOW are with the National Institute of Education, Singapore.

Helen HONG is also with the Education Technology Division, Ministry of Education, Singapore.

Contact Elizabeth Koh at elizabeth.koh@nie.edu.sg for more information about the project.

This brief was based on the project DEV 03/17 EK: Developing My Groupwork Buddy for Geography (MGBGeo).

How to cite this publication

Koh, E., Hong, H., Ng, B., & Seow, T. (2021). *Developing My Groupwork Buddy for Geography (MGBGeo)* (NIE Research Brief Series No. 21-015). Singapore: National Institute of Education.

Request for more details

Please approach the Office of Education Research, National Institute of Education, Singapore to obtain a copy of the final report.

>> More information about our research centres and publications can be found at: http://www.nie.edu.sg