Virtual Math Teams with Geogebra (VMTwG) is a [NSF DRK-12 funded project](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1118773&HistoricalAwards=false) to design, develop, and test a cutting-edge online collaborative learning environment where students and teachers solve mathematical problems and communicate their thinking with others. I worked as a graduate research assistant on this project. VMTwG system allows for small group interactions among students by breaking larger classes into small teams. In this, however, it becomes difficult for teachers to be able to personally guide and facilitate collaboration between students in a timely manner when facilitation would mean observing and responding to multiple groups of students each working at the same time but in different activity spaces. Using only the electronic trace data (automatically logged by VMTwG), I proposed a methodology combined activity theory, group cognition, complexity theory with computational modeling for an automated and meaningfully grounded assessment of student and group performance, It can also predict student and group performance before the collaboration ends. This analytics tool enables teachers to offer timely, concrete, and personalized help to students. Check out [VMTwG Live System](https://vmt.mathematicalthinking.org/about#:~:text=Virtual%20Math%20Teams%20(VMT)%20provides,math%20enthusiasts%20around%20the%20world.).

Diagram

Description automatically generated

Relevant Publications

Check out the papers published in [Computers in Human Behavior,](file:///C:\Users\wanlixing\Dropbox%20(UFL)\A%20NEXT%20IDEA\1%20UF%20Research%20Group\xing_website\Sample\www\pub\CHB_GP_Xing.pdf)[Educational Technology & Society,](file:///C:\Users\wanlixing\Dropbox%20(UFL)\A%20NEXT%20IDEA\1%20UF%20Research%20Group\xing_website\Sample\www\pub\ETS_Submission_FINAL.pdf)[Journal of Universal Computer Science](file:///C:\Users\wanlixing\Dropbox%20(UFL)\A%20NEXT%20IDEA\1%20UF%20Research%20Group\xing_website\Sample\www\pub\LA%20at%20small%20scale_revision_xing.pdf), and [ACM Learning Analytics and Knowledge](file:///C:\Users\wanlixing\Dropbox%20(UFL)\A%20NEXT%20IDEA\1%20UF%20Research%20Group\xing_website\Sample\www\pub\VMT_LAK_2014_Submit.pdf).