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Oct 4th, 9:00 AM - 10:15 AM

Technological Tools to Support Virtual Group Projects

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Recommended Citation

Fiester, Herbert and Workman, Jamie, "Technological Tools to Support Virtual Group Projects" (2019). *Georgia Educational Research Association Conference*. 19.
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Technological Tools to Support Virtual Group Projects

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GERA 2019

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Overview

- Virtual projects and teams have become a common way to promote student learning and project completion in online courses (Cheung & Vogel, 2013; Du, Ge, & Xu, 2015; Kam & Katerattanakul, 2014; Yang, Cho, Mathew & Worth, S, 2011).

- Although higher education institutions provide students with CMS platforms through which they can complete collaborative assignments, students prefer to use technologies they are more accustomed to due to their regular, sustained use (Albayrak & Yildirim, 2015; Ladyshewsky & Pettapiece, 2015).

- Students also select technology that allows for synchronous communication and real-time changes such as Google Drive and virtual worlds (Cheung & Vogel, 2013; Kam & Katerattanakul, 2014; Rowe, Bozalek, & Frantz, 2013).

Overview

- In the early 2000s, experts recognized the increase in use of personally owned hardware and software for professional purposes, known as the consumerization of IT (Moschella, Neal, Taylor, & Opperman, 2004).

- Many higher education leaders are advocating for changes based on consumerization, and, with more choices than ever, students are demanding a voice in determining the characteristics of the learning product that they consume (Fernandes, 2014; Kolko, 2014).

Purpose

- What we do not understand about virtual projects is how the team members successfully complete these projects given that team members are separated by space and, in many cases, time.

- The researchers committed to understand more about how completing projects on virtual teams works.

The purpose of our study was to determine the following:

- Which technologies doctoral students used to facilitate group projects in an online curriculum and instruction course
- How the technologies were used
- The technologies' effectiveness in meeting student needs

Research Questions

The following research questions guided the study:

1. Which technologies do students on virtual teams in a graduate-level online course use to complete the project-based assignments?
    a. Which technologies are perceived to be more effective and less effective?
2. How are technologies used by virtual teams to complete projects in a graduate-level, online course?

Methods

- Data was collected from students enrolled in doctoral level curriculum and instruction course taught in an online format.
- Data was collected over 7 semesters using a simple questionnaire related to technologies used in completing virtual projects
  1. The name of the technology
  2. How you used it
  3. Discuss its effectiveness, was it a good experience, why or why not? Would you use it again, why or why not?
- 115 students were enrolled in the course in all semesters and 74 self-selected to respond to the questionnaire for course extra-credit
- The response rate was 65%

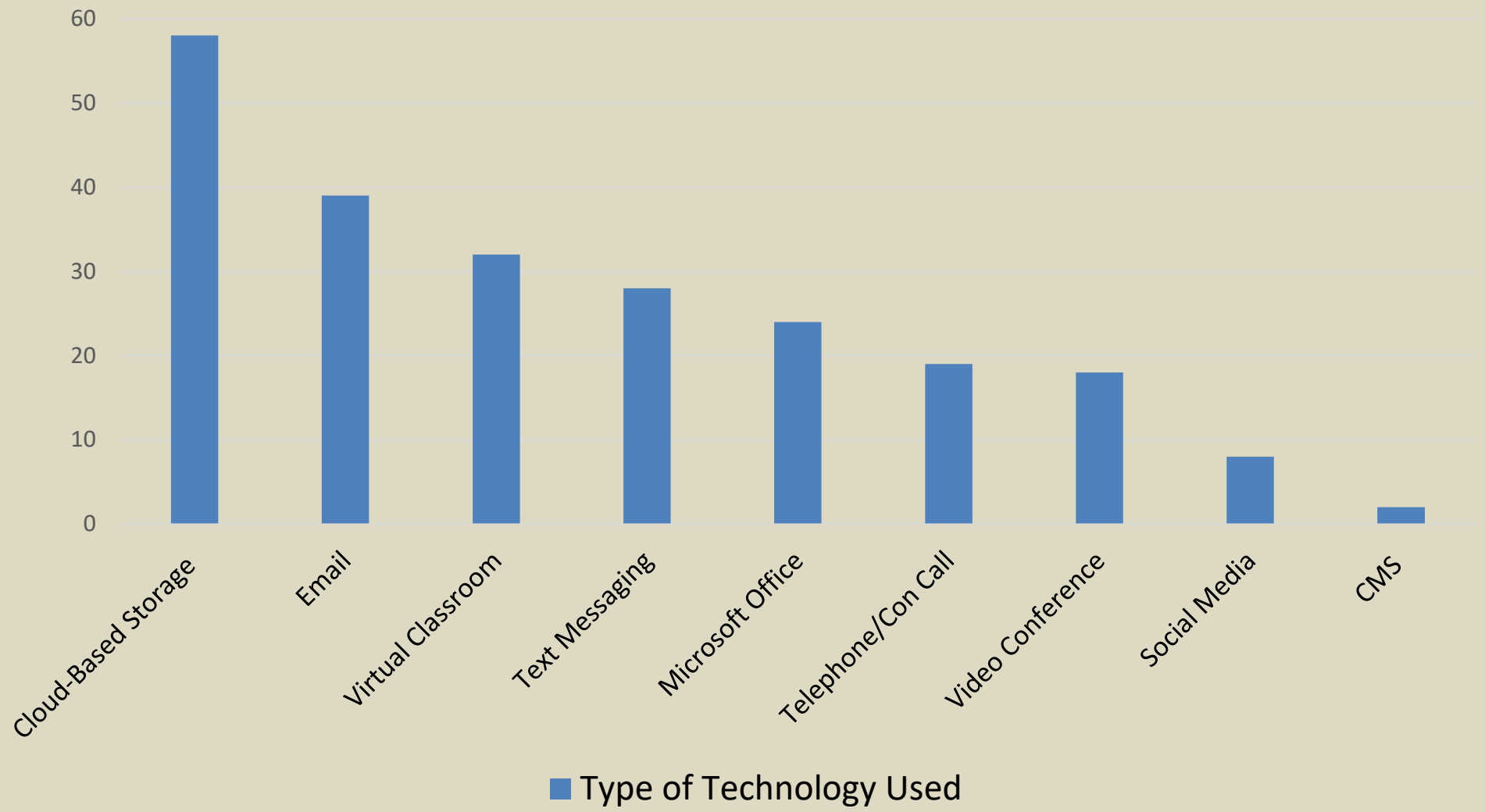
Results Definitions: Types of Technology Used

- *Cloud-based storage*: cloud-based storage is defined as a "cloud computing model in which data is stored on remote servers accessed from the internet, or 'cloud'. It is maintained, operated and managed by a cloud storage service provider on a storage servers that are built on virtualization techniques" Google Drive and Dropbox were cloud-based storage programs used by participants in this study.

- *Virtual classroom*: virtual classroom is defined as an "online classroom that allows participants to communicate with one another, view presentations or videos, interact with other participants, and engage with resources in work groups" (Ferriman, 2017, para. 4). Blackboard Collaborate/Wimba and Adobe Connect were the virtual classrooms utilized in this study.

- *Video conference*: software or applications used for video conferencing. In this study, participants used Skype and Google Hangouts for video conferencing.

Results: 26 Technologies Used (9 category types)



Results Definitions: Ways Technologies Were Used

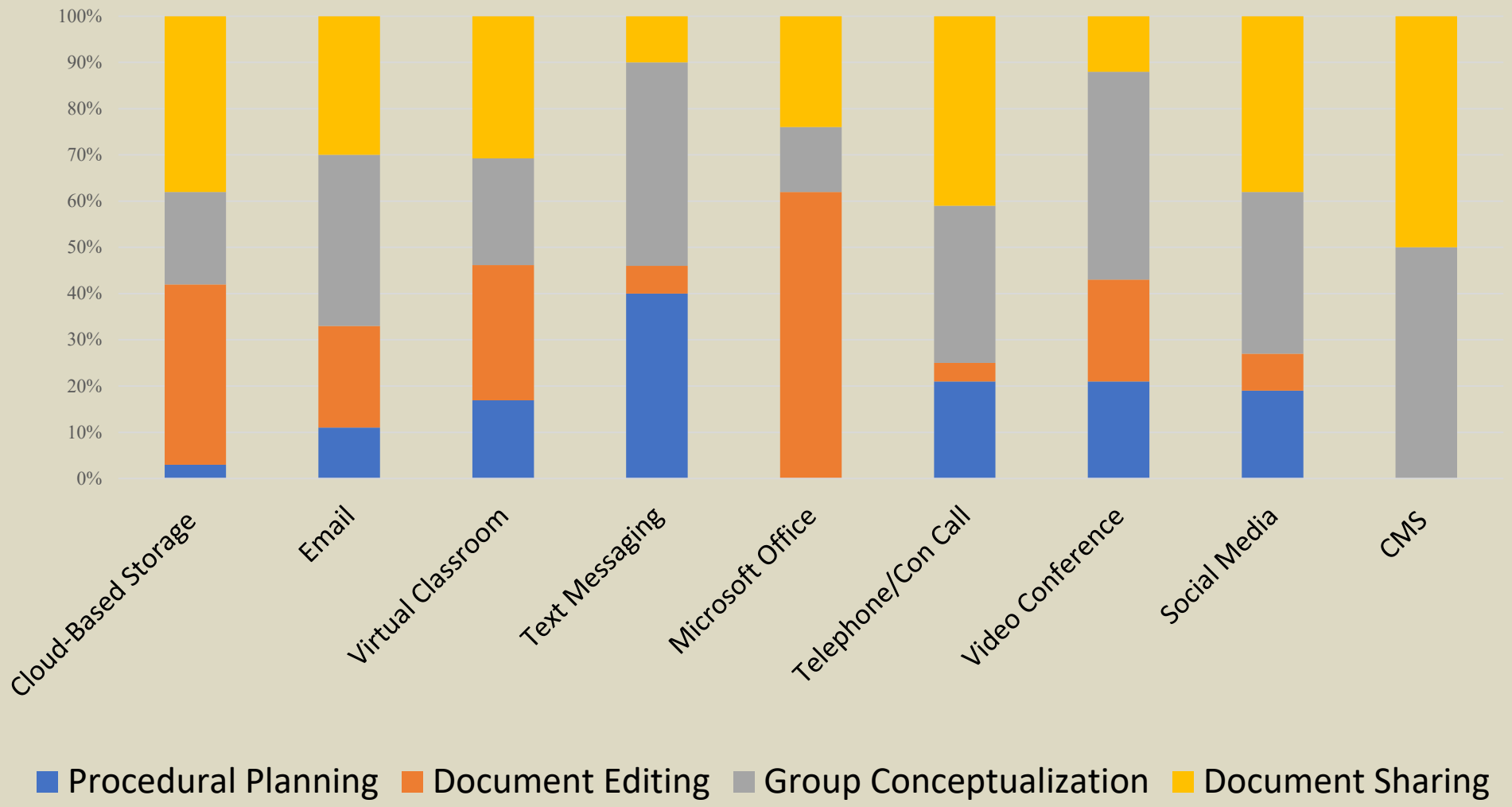
- *Procedural Planning:* Group communication to strategize about aspects of the project. This included discussion of the next chat session or who would complete a certain task.

- *Document Editing:* The alternation of the project or documents that virtual teams collaborate on together. Editing amongst virtual team members to complete a project was completed in a variety of ways.

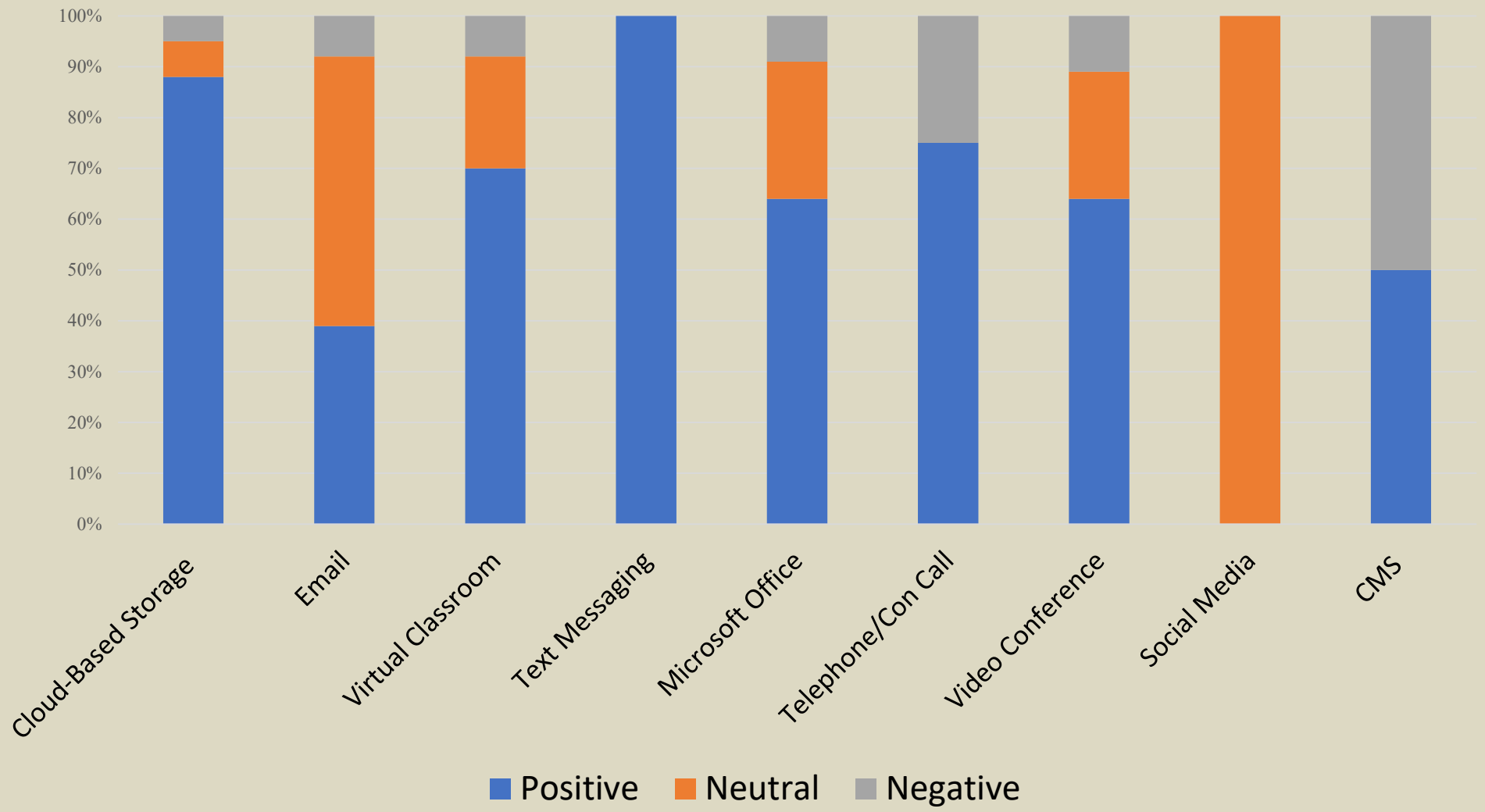
- *Group Conceptualization:* Participants' notations of interacting with group members to accomplish a task. This included discussion of ideas for a project, initial contact between group members, or methods of communication between members.

- *Document Sharing:* Sending documents or content between group members such as drafts of projects, the use of synchronous technology to view updates to documents, or to discuss aspects of the projects.

Results: Technologies Were Used for 4 Purposes



Results: Perceived Technology Effectiveness



Implications and Conclusions

- Instructors should be cognizant of technologies students use, and how they are using them, so they can be considered when designing courses.
- Virtual team projects and other online class assignments should be designed to allow for student flexibility.
- Online instructors should embrace the concept of consumerization understanding its potential to enhance student productivity.
- In online environments, which can cause student feelings of disconnectedness and detachment, familiar technologies can bridge those feelings and provide a comfortable space where students can engage and learn.

Final Thoughts

- Virtual teams collaborate differently based on their familiarity with technology tools and the level of synchronicity the tools provide.
- Students tend to prefer those technologies that they typically use for personal communications, such as social media, video conferencing, and text messaging/cell phone usage.
- Students also prefer technologies that allow for high synchronicity, such as cloud-based storage, when completing online collaborative projects.
- Please put you email address on the paper I passed around if you would like to receive a copy of the complete research article.

Questions?

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