Research Findings: Class Impact on Learner Engagement

In Fall 2023, Class Technologies partnered with Tripod to examine the impact of the Class platform on learner engagement. This memo describes the key findings of a study evaluating the extent to which the Class platform engages learners in comparison to other online video conferencing platforms.

Background and Purpose

Participation in online learning has grown steadily over the past decade, with advances in internet technology giving way to new tools and opportunities for acquiring knowledge and skills. The COVID-19 pandemic in 2020 rapidly accelerated the prevalence of online learning as the majority of U.S. elementary and secondary schools transitioned to distance education models, enrollment in distance education courses in U.S. postsecondary institutions reached a record high, and companies pivoted to remote work (Koksal, 2020; National Center for Education Statistics, 2024). While many schools, universities, and organizations have since resumed in-person activities, the use of programs and platforms that make online interaction and learning possible remains relatively common (Igielnik, 2022).

Research has reported several benefits to engagement in online learning, including higher levels of learning achievement and higher-order thinking skills, due in part to the flexibility that online learning provides for people to actively learn according to their own schedule, location, and budget (Chen, Lambert, & Guidry, 2010). Despite these benefits, high dropout rates stemming from low levels of engagement remain a challenging barrier (Lee & Choi, 2011). Compared to learners in traditional in-person environments, online learners tend to have fewer interactions with their instructors, and the rich communication, collaboration, and connection that can support continuous engagement is hindered (Lee & Choi, 2011; Leeds et al., 2013).

The Class platform aims to improve learner experience through enhanced features not found in commonly used video conferencing platforms. These include chat and reaction capabilities designed for instruction; flexible and multiple layouts in video conferencing; breakout rooms that provide instructor visibility; and embedded document collaboration with content pushed to learners. By providing capabilities that specifically address the interactive needs of learners and instructors, the Class platform sets the stage for building connection and belonging in an online environment, facilitating active

learning, amplifying learner voices, and ensuring the availability of support resources to collectively foster engagement.

As an initial test of this framework, Class Technologies and Tripod conducted a study to compare learner engagement on three online video conferencing platforms: Class, Zoom, and Teams. In this study, learner engagement is defined as the quantity and quality of a learner's participation in and interaction with an education program, co-learners, and instructors. Engagement is comprised of three dimensions: *cognitive* (use of active thinking skills and strategies during learning activities); *emotional* (feelings that learners have and exhibit while learning); and *behavioral* (physical, observable indicators of cognitive and emotional engagement) (Fredericks, Blumenfeld, & Paris, 2004; Hew, 2016).

Methods
Participants and Study Design

Adult learners were recruited to participate in a one-hour online learning session focused on implementing effective programs, initiatives, or changes at work.[1] Participants were randomly assigned to participate in a learning session conducted on one of three video conferencing platforms: 1) Class, 2) Microsoft Teams, or 3) Zoom. All learning sessions were facilitated by the same instructor, and the structure and content of the session were consistent across platforms.

After a brief orientation to webinar norms and platform tools/capabilities,[2] the instructor facilitated a learning session in the following sequence:
1) overview of a framework for and research on implementation and monitoring processes;
2) identification of a program, initiative, or change that each learner would like to implement, followed by group discussions identifying barriers to implementation;
3) overview of how barriers relate to effective strategies and systems of implementation;
4) group discussions identifying strengths and opportunities to improve implementation plans; and
5) debriefing and concluding on learners' next steps for practice and application.

All participants were asked to complete two separate survey instruments for this study: a survey prior to their scheduled learning session, and another survey immediately following their session.

Measurements

The *pre-session survey* was used to gather preliminary information, including:
- participants' demographics;
- their current level of knowledge about the session topic, self-efficacy, and motivation; and
- their level of familiarity with using different video conferencing platforms.

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[1] The topic of the learning sessions was designed to be applicable to a wide range of professional areas.
[2] Learners were oriented to analogous features found across platforms, such as emoticons, hand-raising, chat, accessing materials, and breakout rooms.

The *post-session survey* was used to gather information about the learning experience, including:
- participants' feelings of engagement during the session;
- their perception of the learning session, co-learners, instructor, and the platform utilized; and
- their current level of knowledge about the session topic, self-efficacy, and motivation.

The learning sessions were recorded for subsequent coding of cognitive, emotional, and behavioral indicators of engagement at the class level. For a list of questions included in the pre-session and post-session survey and coded engagement indicators of interest, see Appendix A.

Analysis and Results

Twenty-six adult learners (62% female, 27% male, 12% no response) are included in the final study sample.[3] The average participant age was 38.7 years (range = 26 to 58 years). Participants represented a range of professional backgrounds (27% finished a 4-year degree, 73% finished a professional or graduate degree) including superintendents, consultants, partners, and managers averaging 13.7 years of work experience (range = 1 to 31 years). Seventeen of the adult learners participated in the session via Class, 3 participated via Microsoft Teams, and 6 participated via Zoom. Analyses were conducted to determine if survey measures of learner engagement were different for the three groups that participated in a learning session via Class, Teams, or Zoom.[4] Coded behavioral indicators of engagement were also examined between learning sessions.[5]

Key Findings

- Initial examination of learners' pre-session survey responses indicated no statistically significant differences by session group in self-reported level of knowledge about the session topic; feelings of self-efficacy in executing tasks related to the session topic; and motivation to learn (all $ps >$ 05).
- Overall, learners on average reported having never used Class, using Teams about once or twice a year, and Zoom every day or almost every day. There were no significant differences by session group in learners' reported levels of familiarity with/use of Class, Teams, and Zoom platforms (all $ps > 05$). However, there were differences in their reported comfort with the platform they were

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[3] Five participants were excluded from analyses as they signed up for the study, completed a pre-session survey, but did not attend their assigned session; another 2 were excluded as they attended a session in which they were the only attendee present.

[4] The survey results described in this memo are based on Kruskal-Wallis tests, a non-parametric equivalent to a one-way analysis of variance used for comparing 3 or more independent samples of unequal sizes and variances and non-normal distributions. Post-hoc analyses of significant or marginal differences are based on pairwise Mann-Whitney tests with Bonferroni correction.

[5] For coded engagement indicators, session recording issues prevented coding of 7 participants who attended the Class session. Coded engagement is thus reported on a descriptive basis (i.e., average frequencies) at the session level without significance testing, for 10 Class learners and 10 Teams and Zoom learners (3 Teams attendees, 7 Zoom attendees).

- assigned for the session ($\chi^2(2)$ = 9.44, *p* < .01), where learners in the Class session reported being less comfortable with their platform than those in the Zoom session (z = -1.38, p < .01).
- Post-session survey analyses suggest that having less initial familiarity with Class relative to the other platforms contributed to differences by group session in learners' self-reported ease of navigating the platform ($\chi^2(2)$ = 5.44, *p* = .07) and knowledge of how to use the platform tools ($\chi^2(2)$ = 9.91, *p* < .01). Learners in the Class session reported less ease with using the platform to interact with others and less knowledge of how to use the platform tools for collaboration compared to those in the Zoom session (z = 2.25, p = .02 and z = 2.97, p < .01 respectively).
- Despite some difficulties with the platform on initial use, there were significant differences by group session in learners' self-reported cognitive engagement and focus ($\chi^2(2)$ = 5.89, *p* = .05). Compared to learners in the Teams session, those in the Class session on average agreed more that the information shared with them on the platform did not take a lot of mental effort to follow and that they did not feel distracted while learning (z = 2.42, p = .02). Additionally, learners in the Class session exhibited more observable cognitive engagement (e.g., asking or responding to questions verbally or through the chat features, explaining their thoughts and providing examples) during the session compared to Teams and Zoom learners combined (average of 6.1 versus 4.4 cognitive indicators per learner, respectively).
- While there were no significant differences by group session in positive emotions felt while learning (for example, overall, learners tended to agree that they felt interested, excited, and enthusiastic during the session), there were differences by group session in learners' self-reported emotional engagement with respect to the instructor ($\chi^2(2)$ = 5.68, *p* = .06). Compared to learners in the Zoom session, those in the Class session perceived the instructor as conveying care towards them, agreeing more that the instructor tried to understand how they were feeling as they were learning (z = 2.40, p = .02). Additionally, learners in the Class session exhibited slightly more observable positive emotional engagement (e.g., using positive emoticons and reactions, smiling, and nodding in response to co-learner and instructor comments) during the session compared to Teams and Zoom learners combined (average of 4.3 versus 3.9 emotional indicators per learner, respectively).
- Post-session, learners on average reported being more knowledgeable than before about the topic they learned about, and this did not vary significantly by group session (*p* > .05). But, there were differences by group session in learners' reported self-efficacy or level of confidence in executing topic-related tasks after the learning session ($\chi^2(2)$ = 5.68, *p* = .06). After their participation, learners in the Class session on average expressed more confidence in being able to work with colleagues to develop a clear strategy for implementing their organizational goals and work with colleagues to develop clear systems for implementing their organizational goals compared to learners in the Teams session (z = 2.23, p = .03).

Conclusion and Suggestions for Future Research

Taken together, the results of this study provide initial evidence that learning via Class provides benefits to learner engagement. In particular, learners who were new to using Class reported more cognitive engagement in the form of being more able to follow along with the information they were being presented and feeling less distracted compared to learners using a more common video conferencing platform. Class learners also felt more emotionally engaged with their instructor (potentially setting the groundwork for building connection and belonging in the online environment), and after their session, they reported feeling more confidence in applying the knowledge they acquired to executing tasks related to what they had just learned. Preliminary observations of the learning sessions suggest that Class learners displayed more cognitive and emotional engagement compared to Teams and Zoom counterparts.

Given the sample size of this initial study, future research may consider confirming our initial findings by applying this methodology to larger samples of participants with varied demographic backgrounds and different instructional content. Additionally, given that the majority of learners in this small study were not familiar with Class and experienced some friction with using its features upon first exposure, future studies should examine the impact of the video conferencing platform on learner engagement in multiple sessions attended over time, as participants gain more facility and knowledge of how to use the platform features for interaction and collaboration. Finally, future research conducted under more controlled learning conditions (for example, with recording methods that provide visibility into how learners are utilizing the platform) could shed more light on what specific features, tools, and content delivery formats are helping to drive learners' cognitive, emotional, and behavioral engagement.

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Appendices

Appendix A. Selected Study Measurements

Pre-Session Survey

1.	How would you rate your current level of knowledge about the session topic?	Not at all knowledgeable / A little knowledgeable / Somewhat knowledgeable / Quite knowledgeable / Extremely knowledgeable
2.	Currently, how confident are you in your ability to do the following? - Explaining to a colleague the barriers that prevent your organization from implementing a plan effectively - Working with colleagues to develop a clear strategy for achieving a common organizational goal - Working with colleagues to develop clear systems for achieving a common organizational goal	Not at all confident / A little confident / Somewhat confident / Quite confident / Extremely confident
3.	Thinking about the upcoming session, to what extent do you agree or disagree with the following statements? - I want to learn more about the session topic. - I want to master new skills that are covered in the session. - I look forward to learning during this session. - I feel motivated to attend this learning session.	Strongly disagree / Somewhat disagree / Neither agree nor disagree / Somewhat agree / Strongly agree
4.	Thinking about the upcoming session, to what extent do you feel the following? - Interested - Excited - Enthusiastic - Alert - Attentive	Very slightly or not at all / A little / Moderately / Quite a bit / Extremely
5.	In the past year, how often have you used the following online conferencing platforms? - Class - Microsoft Teams - Zoom	Never / About once or twice a year / About once or twice a month / About once or twice a week / Every day or almost every day
6.	How comfortable are you with the online conferencing platform you will be using for this session?	Not at all comfortable / A little comfortable / Somewhat comfortable / Quite comfortable / Extremely comfortable

7.	What is your current role?	Free Response
8.	How many years of work experience do you currently have?	Numerical value
9.	What is your age?	Numerical value
10.	What is your gender?	Male / Female / Non-binary or another gender
11.	What is the highest level of education you have completed?	Did not finish high school / Finished high school / Attended some college or earned a 2-year degree / Finished a 4-year degree / Finished a professional or graduate degree after college (e.g., Master's; Ph.D.; M.D.)

Post-Session Survey

1.	How would you rate your current level of knowledge about the session topic?	Not at all knowledgeable / A little knowledgeable / Somewhat knowledgeable / Quite knowledgeable / Extremely knowledgeable
2.	Currently, how confident are you in your ability to do the following? - Explaining to a colleague the barriers that prevent your organization from implementing a plan effectively - Working with colleagues to develop a clear strategy for achieving a common organizational goal - Working with colleagues to develop clear systems for achieving a common organizational goal	Not at all confident / A little confident / Somewhat confident / Quite confident / Extremely confident
3.	Thinking about the session, to what extent did you feel the following? - Interested - Excited - Enthusiastic - Alert - Attentive	Very slightly or not at all / A little / Moderately / Quite a bit / Extremely
4.	Thinking about the session, to what extent do you agree or disagree with the following statements? - I felt engaged during the session. - It took a lot of mental effort for me to follow along with the information that was shared in the session. - I was distracted during the session.	Strongly disagree / Somewhat disagree / Neither agree nor disagree / Somewhat agree / Strongly agree
5.	Thinking about the session, to what extent do you agree or disagree with the following statements? - I learned a lot from the session.	Strongly disagree / Somewhat disagree / Neither agree nor disagree / Somewhat agree / Strongly agree

	- The session stimulated my interest in the topic that was presented. - The session content was explained in ways that had practical value for me (i.e., I could relate it to everyday experiences).	
6.	Thinking about the session, to what extent do you agree or disagree with the following statements? - I felt comfortable giving others feedback during the session. - It was easy to use the online platform to interact with other participants. - I knew how to use the tools in the online platform to collaborate with others in the session. - The online platform felt more like a learning space than a meeting space.	Strongly disagree / Somewhat disagree / Neither agree nor disagree / Somewhat agree / Strongly agree
7.	Thinking about the session, to what extent do you agree or disagree with the following statements? - The instructor tried to understand how we felt during the session. - The instructor gave us time to explain our ideas. - I liked the ways we learned the subject material in this session. - The instructor checked to make sure we understood what they were teaching us. - The instructor asked questions to be sure we were following along when they were teaching. - The instructor asked us to explain more about the answers we gave. - The session participants stayed on task and didn't waste time.	Strongly disagree / Somewhat disagree / Neither agree nor disagree / Somewhat agree / Strongly agree

Coded Engagement Indicators

Behavioral Indicators of Cognitive Engagement (Coded as observed frequency counts)
Accessed and/or reviewed shared content
Asked or responded to questions (verbal or through chat)
Explained thought processes
Provided examples, help, or suggestions

Behavioral Indicators of Emotional Engagement (Coded as observed frequency counts)
Used emoticons/reactions in chat (positive e.g., thumbs up, heart, stars, celebration)

Smiling
Nodding (in response to co-learner and/or instructor comments)
Looked bored
Looked confused