

## **Let's CHAT About Online Student Engagement: Cultural-Historical Activity Theory as a Theoretical Lens**

Jacqueline Yu\*

University of Calgary

*Student engagement has been linked to academic outcomes and school completion. During the COVID-19 pandemic, online instruction became a learning mode of necessity, resulting in an explosion of related research. This article will explore Engeström's (1987/2019) cultural-historical activity theory (CHAT) as a theoretical lens to understand online learning environments. Using third-generation activity theory, in-person learning environments will first be described through a model of two activity systems; one system relates to the teacher's instruction, and the other relates to the student's school participation or studying. This model will be extended for online settings to incorporate a third activity system, the homeschooling family. This extension may provide a promising approach to conceptualizing the unique dynamics of online student engagement.*

**Keywords:** Engagement, Online Learning, E-learning, Cultural-historical activity theory, 5-12 schooling

Yu, J. (2024). Let's CHAT About online student engagement: Cultural-historical activity theory as a theoretical lens. *Emerging Perspectives Special Edition: Designing for Digital Futures*, 7(1), 1–11.

Before the COVID-19 pandemic, student enrollment in K-12 online learning had already been building momentum in Alberta, Canada (Barbour et al., 2021). However, the ubiquitous “emergency remote teaching” that became a necessity during the pandemic spotlighted the key difficulties of delivering effective online instruction, including fostering attentiveness and meeting students’ academic and socio-emotional needs at a distance (Leech et al., 2022; Martin et al., 2022; Openo, 2020, p. 6; Vaillancourt et al., 2022). The factors linked to course completion and student attrition have been an enduring concern for online learning environments, including

\*jacqueline.yu@ucalgary.ca

efforts to develop techniques to identify and support at-risk learners (Archambault et al., 2010; Bienkowski et al., 2012; Friedhoff et al., 2022; Robyler et al., 2008)

Presumed to be supportive of school completion (Appleton et al., 2008), student engagement has been a prominent research focus for online learning environments (Henrie et al., 2015; Martin et al., 2021). This emphasis placed on engagement is unsurprising, given the evidence supporting its relationship with academic perseverance and achievement (Alrashidi et al., 2016; Fredricks et al., 2004; Lei et al., 2018). Given the instructional challenges posed by online learning settings, an enhanced understanding of student engagement may help improve online pedagogies and interventions. In this paper, Engeström's (1987/2019) cultural-historical activity theory will provide a theoretical lens for the unique dynamics of online learning environments and a promising framework for understanding student engagement.

### **Engeström's Cultural-Historical Activity Theory**

To provide a conceptual outline of Engeström's (1987/2019) cultural-historical activity theory (CHAT), it is first necessary to generally define the term, *activity system*. Building on the prior theoretical work of Vygotsky and Leontiev, Engeström (1987/2019) first proposed an approach to studying activity systems in *Learning by Expanding*. To provide an introductory definition, "an activity system is a relatively durable collective formation directed at and motivated by a continuously evolving *object*" (Engeström, 2022, p. 134). Activity systems are mainly composed of a singular or collective *subject*, an *object* serving as the intended focus and aim of the subject, and *instruments*, which the subject employs to alter the object; it supposes that the activity system is centred on an object, which is actively altered to strive for *outcomes* to meet the demands of its members, and those of additional activity systems (Engeström, 2022). They are complexly wrought with multiple perspectives and traditions, possessing their historical

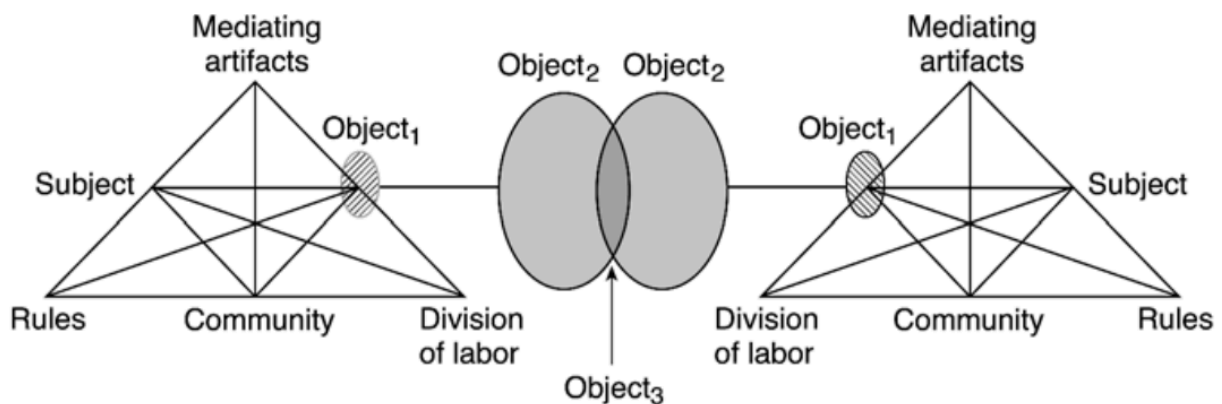
narrative, which shapes current actions (Engeström, 2001). A classroom environment can be studied as an activity system with its teacher, the subject focused on the progressing object, and their pupils' learning (Engeström, 2022).

### Classroom Learning through the Lens of CHAT

Research related to activity systems may focus on a single activity system or the interactions between multiple activity systems (Engeström, 2001; 2022; Engeström & Sannino, 2021), providing a lens to analyze K-12 online learning environments. Referred to as “the third generation of activity theory” (p. 135), Engeström (2001) described a model accounting for the interrelation of at least two activity systems. As shown in Figure 1, the interaction between the two activity systems can be conceived as a transition from object 1, which is the basic, uninterpreted object, to object 2, referring to the meaning-imbued object as perceived by the activity system, to object 3, a “jointly constructed object” (p. 136). Object 3 is the central focus of inquiry in this generation of activity theory (Engeström & Sannino, 2021).

#### Figure 1

*Engeström's third generation of activity theory featuring two interrelating activity systems*



Using this third generation, Engeström (2022) argued that, within school environments, learning can be conceived as an interaction between two associated activity systems, with one

system relating to the teacher's instruction and the other to the student's "activity of studying, or school going" (p. 137). As subjects of these two activity systems, teachers and students likely have dissimilar objects when understanding their goal-directed behaviours and the meaning they ascribe to learning in the school environment (Engeström, 2016). For example, some students may be motivated by grades and the practical utility of their learning, whereas some teachers may focus on students' content mastery (Engeström, 2016). As a result of this dissonance, these two systems must "construct common ground for their objects, that is, a partially shared object that allows them to collaborate effectively" (Engeström, 2022, p. 137).

### ***The Third Activity System of Online Learning***

Suppose traditional classroom learning can be understood as two interacting activity systems (Engeström, 2022). In that case, an analysis of online learning environments should account for interactions with a third activity system, that of the homeschooling family. Applying Engeström's second-generation framework (1987/2019), the family that chooses online schooling is an activity system bound by its own *rules* and expected distribution of responsibilities centred on the object of student learning. The in-person classroom is where the activity systems of traditional schooling intersect (Engeström, 2022), but the home environment forms this space for the activity systems involved in online learning. Unless synchronous classes are mandatory, a significant amount of online learning is asynchronous, providing students with considerable leniency; this amount of unstructured learning and its physical distance from teachers renders tracking and engaging students more time-consuming and challenging (Stevens & Borup, 2015). The crucial role of the parent or guardian in online learning has attracted researchers' interest (e.g. Borup et al., 2013; 2019; Chen et al., 2019; Liu et al., 2010; Smith et al., 2016). Multiple frameworks have identified the unique role of parents in supporting online

learning, including organizational, supervisory, motivational, and academic capacities (Stevens & Borup, 2015). An at-home adult mentor may be so essential to supporting most K-12 online learners that this role has even been referred to as a “*learning coach*” (Smith et al., 2016, p. 102).

### **Future Directions for Online Student Engagement**

Engeström’s (1987/2019) cultural-historical activity theory (CHAT) provides a promising lens to study K-12 online learning environments in terms of three interacting activity systems. As defined by Fredricks et al. (2004), engagement is a tripartite construct consisting of interconnected cognitive, affective, and behavioural dimensions, which can shift in duration and magnitude. Engagement reflects an interaction between a person and their environment (Fredricks et al., 2004; Renninger & Järvelä, 2022). Relevant to online high schools, Borup et al. (2014) proposed that *parental engagement* is of central significance to student engagement in their Adolescent Community of Engagement (ACE) framework. Extending Engeström’s (2022) analysis of student learning in traditional school settings, suboptimal learning or disengagement may be due to a lack of alignment between the school, studying, and homeschooling activity systems in terms of working together on their partnership with regard to the object of student learning. As argued by Engeström (2022), it would be naive to study learning only within the context of teacher instruction: “The common failure to recognize and analyze studying as an activity system in its own right, not reducible to instruction or schooling, maybe a root cause behind various forms of student alienation” (p. 137). When striving to engage online learners effectively, this potential nativity may also include lapses in understanding the importance of the homeschooling family’s activity system in student learning. Given that some research has shown the increased responsibilities of the parent in online learning settings (Borup et al., 2013; Liu et

al., 2010; Smith et al., 2016), effective communication and collaboration may be essential to student engagement.

### References

- Alrashidi, O., Phan, H. P., & Ngu, B. H. (2016). Academic engagement: An overview of its definitions, dimensions, and major conceptualisations. *International Education Studies*, 9(12), 41-52. <https://doi.org/10.5539/ies.v9n12p41>
- Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools*, 45(5), 369–386. <https://doi.org/10.1002/pits.20303>
- Archambault, L., Diamond, D., Brown, R., Cavanaugh, C., Coffey, M., Foures-Aalbu, D., Richardson, J., Zygouris-Coe, V., Scribner, D., & Barbour, M. (2010). *Research committee issues brief: An exploration of at-risk learners and online education* (p. 1-24). International Association of K-12 Online Learning. <https://files.eric.ed.gov/fulltext/ED509620.pdf>
- Barbour, M. K., Labonte, R., & Nagle, J. (2021). *State of the nation: K-12 e-learning in Canada*. <https://k12sotn.ca/wp-content/uploads/2022/06/StateNation21.pdf>

- Bienkowsi, M., Feng, M., & Means, B. (2012). *Enhancing teaching and learning through educational data mining and learning analytics: An issue brief* (pp. 1–77) [Issue Brief]. SRI International. <http://tech.ed.gov/wp-content/uploads/2014/03/edm-la-brief.pdf>
- Borup, J., Graham, C. R., & Davies, R. S. (2013). The nature of parental interactions in an online charter school. *American Journal of Distance Education, 27*(1), 40–55.  
<https://doi.org/10.1080/08923647.2013.754271>
- Borup, J., Walters, S., & Call-Cummings, M. (2019). Examining the complexities of parental engagement at an online charter high school: A narrative analysis approach. *The International Review of Research in Open and Distributed Learning, 20*(1).  
<https://doi.org/10.19173/irrodl.v20i1.3605>
- Chen, T., Wanberg, R. C., Gouioa, E. T., Brown, M. J. S., Chen, J. C.-Y., & Kurt Kraiger, J. J. (2019). Engaging parents' involvement in k–12 online learning settings: Are we meeting the needs of underserved students? *Journal of E-Learning and Knowledge Society, 113–120*. <https://doi.org/10.20368/1971-8829/1563>
- Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work, 14*(1), 133–156.
- Engeström, Y. (2016). From learning environments and implementation to activity systems and expansive learning. In *Studies in expansive learning: Learning what is not yet there* (1st ed., pp. 101–116). Cambridge University Press.  
<https://doi.org/10.1017/CBO9781316225363>
- Engeström, Y. (2019). *Learning by expanding: An activity-theoretical approach to developmental research* (2nd ed.). Cambridge University Press. (Original work published in 1987)

- Engeström, Y. (2022). Learning in activity. In R. K. Sawyer (Ed.), *The cambridge handbook of the learning sciences* (3rd ed., pp. 134–155). Cambridge University Press.
- Engeström, Y., & Sannino, A. (2021). From mediated actions to heterogenous coalitions: Four generations of activity-theoretical studies of work and learning. *Mind, Culture, and Activity*, 28(1), 4–23. <https://doi.org/10.1080/10749039.2020.1806328>
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Friedhoff, J. R. (2022). *Michigan's k-12 virtual learning effectiveness report 2020-21*. Michigan Virtual. <https://michiganvirtual.org/research/publications/michigans-k-12-virtual-learning-effectiveness-report-2020-21/>
- Henrie, C. R., Halverson, L. R., & Graham, C. R. (2015). Measuring student engagement in technology-mediated learning: A review. *Computers & Education*, 90, 36–53. <https://doi.org/10.1016/j.compedu.2015.09.005>
- Leech, N. L., Gullett, S., Howland Cummings, M., & Haug, C. A. (2022). The challenges of remote k–12 education during the COVID-19 pandemic: Differences by grade level. *Online Learning*, 26(1). <https://doi.org/10.24059/olj.v26i1.2609>
- Lei, H., Cui, Y., & Zhou, W. (2018). Relationships between student engagement and academic achievement: A meta-analysis. *Social Behavior and Personality: An International Journal*, 46(3), 517–528. <https://doi.org/10.2224/sbp.7054>



- Liu, B., Algina, C., & Dawson. (2010). The validation of one parental involvement measurement in virtual schooling. *Journal of Interactive Online Learning*, 9(2), 105–132. <https://www.ncolr.org/jiol/issues/pdf/9.2.2.pdf>
- Martin, F., Bacak, J., Polly, D., & Dymes, L. (2021). A systematic review of research on K-12 online teaching and learning: Comparison of research from two decades 2000 to 2019. *Journal of Research on Technology in Education*, 1–20. <https://doi.org/10.1080/15391523.2021.1940396>
- Martin, F., Xie, K., & Bolliger, D. U. (2022). Engaging learners in the emergency transition to online learning during the COVID-19 pandemic. *Journal of Research on Technology in Education*, 54(sup1), S1–S13. <https://doi.org/10.1080/15391523.2021.1991703>
- Openo, J. (2020). Education’s response to the COVID-19 pandemic reveals online education’s three enduring challenges. *Canadian Journal of Learning and Technology*, 46(2). <https://doi.org/10.21432/cjlt27981>
- Renninger, K. A., & Järvelä, S. (2022). Designing for meaningful learning: Interest, motivation, and engagement. In R. K. Sawyer (Ed.), *The cambridge handbook of the learning sciences* (3rd ed., pp. 603–618). Cambridge University Press.
- Roblyer, M. D., Davis, L., Mills, S. C., Marshall, J., & Pape, L. (2008). Toward practical procedures for predicting and promoting success in virtual school students. *American Journal of Distance Education*, 22(2), 90–109. <https://doi.org/10.1080/08923640802039040>
- Smith, S. J., Harvey, S. P., Burdette, P. J., & Cheatham, G. A. (2016). Parental role and support for online learning of students with disabilities: A paradigm shift. *Journal of Special Education Leadership*, 29(2), 101–112.

Stevens, M., & Borup, J. (2015). Parental engagement in online learning environments: A review of the literature. In M. F. Rice (Ed.), *Advances in Research on Teaching* (Vol. 25, pp. 99–119). Emerald Group Publishing Limited.

<https://doi.org/10.1108/S1479-368720150000027005>

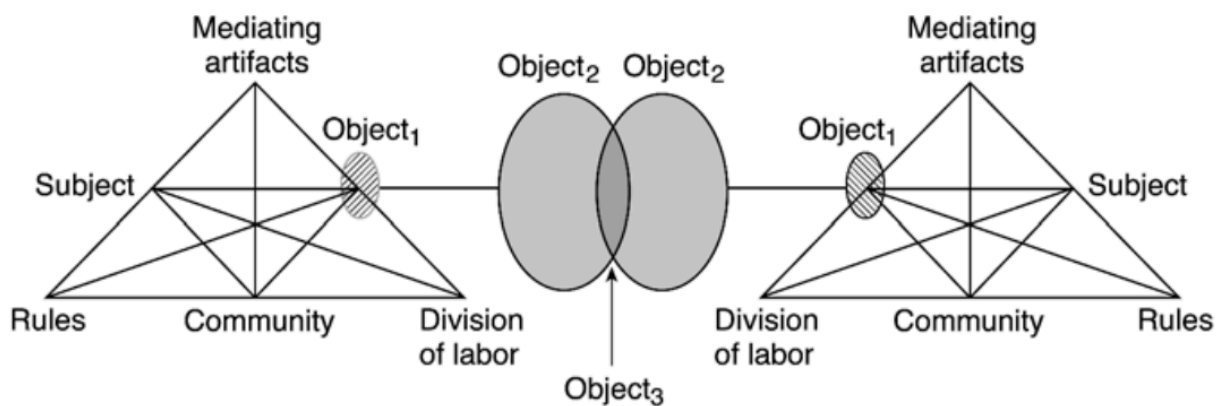
Vaillancourt, T., Brittain, H., Krygsman, A., Farrell, A. H., Pepler, D., Landon, S.,

Saint-Georges, Z., & Vitoroulis, I. (2022). In-person versus online learning in relation to students' perceptions of mattering during COVID-19: A brief report. *Journal of Psychoeducational Assessment*, 40(1), 159–169.

<https://doi.org/10.1177/07342829211053668>

### Figure 1

*Engeström's third generation of activity theory featuring two interrelating activity systems*



*Note:* Reprinted from Y. Engeström, 2001, Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14 (1), p. 136. Copyright 2001 by Taylor & Francis Ltd. Reprinted with permission.