# Factors That Influence
# Learner Motivation, Learning Perceptions, and Identity
# in Graduate Level Online Synchronous Classrooms

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**Abstract**

The literature identifying factors that influence learning, motivation, identity formation and participation, termed affordances, has focused primarily on face-to-face classrooms. However, literature about affordances within online synchronous classrooms at the graduate level is only just emerging. Therefore, the purpose of this study was to contribute to uncovering the affordances in online synchronous classrooms at a graduate level. Using a qualitative method with a phenomenological design, learners from a hybrid Doctor of Physical Therapy program using online synchronous classrooms participated in a semi-structured interview via video conference. Interviews were transcribed via Zoom software and then manually coded using NVivo 12 software. Additionally, two previously recorded synchronous classes were observed and manually coded. Inductive thematic analysis was used to identify and refine codes to construct themes and subthemes. Three major themes were identified from the coded data: teacher influence, learner positionality, and social connection are three major affordances that can change learner motivation, identity formation, and learning perceptions in the online synchronous graduate-level classroom. This study adds a new perspective to the existing literature on affordances affecting participation. Using interviews and observing online classes, this research provides a comprehensive analysis of affordances that influenced learning outcomes in an online synchronous classroom at the graduate level. By understanding the affordances that impact how learners participate, teachers can design classrooms that have the potential to improve learner outcomes.

Keywords: *online learning; physical therapy education; teacher influence; learner positionality; social connection*

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**in Graduate Level Online Synchronous Classrooms**

Situative theory provides a lens for understanding how learners participate in a classroom. *Participation* is defined as an act of taking part in something, which, in situative theory, includes learning, discourse, and forming a personal identity (Greeno, 1998). Participation is shown to occur through an intact activity system, described by Greeno and Gresalfi (2008) as the interplay between the common practices of the system, the learner's ability to participate, and any resources used in the experience. All elements that influence participation in the activity system are termed *affordances* (Greeno, 1998; Greeno & Gresalfi, 2008). By understanding the affordances of the system and how they affect participation, a teacher may be able to redesign learning experiences that can enhance learner participation (Hickey & Harris, 2021). Additionally, identity, motivation, and learning are all shaped by the ways in which learners participate (Archambault et al., 2022; Hand & Gresalfi, 2015).

While much of situative theory was originally applied to a face-to-face context, the emergence of synchronous learning platforms requires continued exploration in this field. It is important to recognize that face-to-face classrooms have differences compared to synchronous classrooms and that the affordances of one context may not translate directly to another. Thus, the primary aim of this study was to uncover the affordances that influenced learners' motivation, identity formation, and learning as they reflected on their participation in online synchronous classes of a hybrid Doctor of Physical Therapy (DPT) program.

**Review of Literature**

Healthcare education programs that offer online classrooms have grown over the past several years (Gagnon et al., 2020; Posey & Pintz, 2017; K. Volansky, 2019). Online classrooms can include synchronous and asynchronous learning experiences. Defined, *online synchronous classrooms* use a web-based streaming service that engages learners together in real-time; however, learners are not within the same physical space (Singh & Thurman, 2019). In comparison, *asynchronous learning* is content delivered online to learners to consume on their own time and in a location of their choice (Singh & Thurman, 2019). Online synchronous classrooms (SC) offer similar learning activities to face-to-face classrooms; however, the classroom dynamics and norms are different (Yarmand et al., 2021). Therefore, understanding those differences and how they impact learners is important for teachers to cultivate the most effective and welcoming classroom.

Adult learning theorists suggest online SC prioritize flexibility for learners to opt into a meaningful learning experience (Tay & Quek, 2019). For example, Swaminathan et al. (2022) used a questionnaire and a focus group discussion to find that learners reported higher motivation and increased perceived learning when they could access class materials prior to the synchronous meeting time. Additionally, online SC affords learners to see, hear, and interact with the material in a way that can be leveraged differently by each learner, based on each learner's needs (Angelone et al., 2020). Luckritz Marquis (2021) discussed how learning increased when teachers used easily accessible and intuitive technology platforms, as the technology provided more scaffolding opportunities and increased capabilities for formative assessments. Resultingly, learners had increased flexibility in how they participated in the scaffolding and were able to connect concepts more clearly (Luckritz Marquis, 2021). However, technology applications must

be straightforward and easy to use for learners to maintain motivation and engagement. More complex technology applications may decrease learner motivation to use the technology, as it requires too much time and cognitive load to interact with the online interface (Shi et al., 2021). Repeated use of technology applications can also be beneficial for engagement, as Flynn-Wilson and Reynolds (2021) found that learners were more participative in online discussions and thought the discussions were of higher quality when learners had previous experience with using the technology.

Additionally, learner engagement and social presence can leverage participation and promote learning (Gagnon et al., 2020). Therefore, it is an affordance that can be created in an online space. Using a team-based approach during online synchronous classes, Parrish et al. (2021) found learners appreciated having a connection with other learners in their assigned teams, which led to increased engagement. Furthermore, levels of social engagement in an online course were the biggest predictor for the level of satisfaction with the course, with high engagement predicting high satisfaction (Nasir, 2021). Importantly, Yarmand et al. (2021) discussed social engagement barriers that are commonplace in SC. Through interviews, they uncover three main themes; learners had hesitations with broadcasting their appearances on screen, they used the chat feature instead of verbal discourse to decrease social anxiety with answering or asking questions, and learners overall felt less connected with their peers and teachers (Yarmand et al., 2021).

Lastly, research into identity formation has found experiential learning in face-to-face classrooms to be beneficial in promoting professional identity formation (Hayward & Li, 2014; Mak et al., 2022). Additionally, online asynchronous modules have been found to be helpful in developing subcomponents of professional identity, namely grit and resilience, in DPT learners

(Wagner & Jackson, 2021). However, to our knowledge, no studies have investigated affordances that drive identity formation for learners in the online SC at the graduate level. While identity formation is a joint accomplishment that occurs in an intact activity system (Hand & Gresalfi, 2015), factors at play in the online SC space are unknown.

Despite the growth in teachers using online SC in DPT programs (Gagnon et al., 2020; Jordon et al., 2023), little understanding is known on best practices that impact learner identity formation, motivation, and learning in the online SC. Therefore, the purpose of this qualitative study was to determine the affordances that learners perceived as motivating, led to identity formation, and changed learning through the lens of situative theory in a DPT online SC. Accordingly, the following research questions were examined in this study:

(1) What are the affordances that influenced the learner's motivation, identity formation, and learning as learners reflected on their participation in online synchronous classes (SC) taken at a hybrid Doctor of Physical Therapy (DPT) program?

(2) How did the affordances change the learners' motivation, identity formation, and learning perceptions?

**Recruitment Methods and Sample Population**

A convenience sample was used to recruit participants by email sent to all eligible DPT learners at a small private institution in the Midwest. Nine out of 48 learners voluntarily responded and were interviewed through Zoom in January 2023. Inclusion criteria required learners to be currently enrolled in the DPT program and have completed two semesters with the DPT program. No benefits or incentives were offered for participation. Of the nine, five were in their sixth semester, and four were enrolled in their third semester with the DPT program. All nine participants completed the entire study. Table 1 shows participant demographics.

**Table 1**

*Demographic Characteristics of Participants* (N = *9)*

| | |
|---|---|
| **Age range** | |
| 21-25 | 5 |
| 26-29 | 2 |
| 30-35 | 2 |
| **Gender** | |
| Male | 3 |
| Female | 6 |
| **Race/ethnicity** | |
| White (not of Hispanic origin) | 6 |
| African American | 2 |
| Native Hawaiian | 1 |
| **Semester enrolled at time of study** | |
| 3rd semester | 4 |
| 6th semester | 5 |

**Research Methods, Design, and Procedures**

A qualitative method with a phenomenological design was used in this study as it best captures the essence of participants' lived experiences as learners participating in graduate-level online synchronous classrooms (Creswell & Creswell, 2022; Ravitch & Carl, 2016). The phenomenological framework also guided the development of the semi-structured interview questions found in Table 2 (Creswell & Creswell, 2022). Using interviews, researchers were able to explore the lived experiences of first- and second-year DPT learners participating in online SC in a DPT program utilizing distance learning SC.

**Table 2**

*Sample Interview Questions and Follow up Probes*

| Sample Questions | Sample Probes |
|---|---|
| Describe a time that you learned something in Zoom synchronous sessions that has stuck with you. | What supported you in learning that thing? That is, are there factors or conditions that were especially helpful, or without which you might not have learned that thing in the same way? |
| Describe a time when the asynchronous lectures impacted your learning/ participation synchronously. | What supported or inhibited your learning here? |
| Think of a time in Zoom class when you see yourself as motivated. Describe that class/activity, and describe your behavior there. | What about the activity/class was motivating? |
| Think of a time in Zoom class when you see yourself as unmotivated. Describe that class/activity, and describe your behavior there. | What do you think is different about those contexts, between the class that was motivating and the class that was unmotivating? |
| Describe how you see yourself in the context of the neuroscience class as a student PT. | Can you think of a class where you act or see yourself really differently? Why do you think you see yourself differently between these classes? |

**Data Collection Procedures and Instruments**

After approval from the college's Institutional Review Board, where the study was conducted, participants were recruited as described above. After obtaining written consent from the nine participants, 30 to 60-minute, semi-structured interviews were conducted through video conferencing software, Zoom, in January 2023. Pseudonyms were assigned to each participant to maintain confidentiality. The lead researcher, a female and assistant professor at the institution, conducted the interviews. At the time of the study, she had earned a DPT and was enrolled in a Doctor of Education program where she received graduate training in qualitative research.

Before starting the interview, participants were told of the study description, the researchers' personal positionality statements, and reasons for interest in the research topic. Interview protocols were developed based on the research questions and field tested before data collection on three teachers at the institution. All interviews were recorded and transcribed verbatim using Zoom audio transcripts and cross-referencing audio files for accuracy. Member checks were conducted for accuracy after coding was completed and sent to the participants with no revisions received from participants.

The fieldwork observations were conducted using the Zoom video recordings of two previously recorded SC that were approximately 60 minutes each in length. The Zoom classes were held between September 2022 and March 2023 and were classes where participants were enrolled. During observation, researchers looked for instances of major themes as discussed in the interviews and recorded these observations in a table.

**Data Analysis**

First, all three researchers manually coded each transcript individually using NVivo 12 Software, where codes and codebooks were created. Then, the researchers held two meetings for iterative reviews of data coded from the transcripts to refine codes. Themes were developed based on coding. Thematic analysis via inductive coding of the interview transcripts was used to examine the data completed individually by all researchers, and themes and subthemes were created. Data saturation was reached in the nine interviews; therefore, no additional interviews were requested by the researchers. In addition, a meeting was held with all researchers to code two Zoom audio/video recordings of SC. The coding of audio/video recordings used an inductive coding approach and reflexive dialogue.

**Trustworthiness**

Strategies were implemented to ensure data trustworthiness (Ravitch & Carl, 2016). Data credibility was enhanced through data triangulation of interview transcripts and the observed synchronous classroom recordings. Additionally, member checks following transcription and coding of the interview transcripts was completed. Member checks ensured that coding was appropriately interpreted based on the participants intended meaning. Multiple coding was performed, with all three researchers completing individual inductive coding of transcripts followed by discussions to create agreements in codes. Researchers used thick, rich descriptions to exemplify themes and ensure transparency. An audit trail describing how decisions were made and how the data were collected and documented was performed to enhance the dependability and transparency of the data. Throughout the data collection and analysis process, the creation of memos and use of research journals and reflexive dialogue between researchers supported the formulation of codes, themes, and subthemes (Ravitch & Carl, 2016).

**Results**

Three themes emerged from coding the data. These included teacher influence, learner positionality, and social connection. Each theme represents affordances that affect learner participation and influence learner identity formation, motivation, and learning perceptions as they participate in the SC.

***Teacher Influence***

All learners commented on teacher influence being a major affordance that impacted the learning environment. The term *teacher influence* includes the many aspects of how a teacher sets up the learning experience within the SC and engages with learners. Out of all the possible affordances teachers can manipulate, learners discussed five specific affordances repeatedly.

First, several learners noted how teachers' explanations beyond the original material source helped provide clarity and increased learning, making comments like Adam saying, "You can read something 100 times, but then you ask a professor, and they explain it in a different way than what was on the PowerPoint, and it clicks. It's like, I got it. I'll never forget it."

Second, several discussed how presentation style and use of visuals utilizing shared screen afforded their understanding of the material, making comments such as Thelma, "I'd say visuals, especially over Zoom. I think it can be tough to stay tuned in when you're sitting in front of the screen. So I think that visuals are really [helpful]." However, learners cautioned against the use of visuals that do not aid in furthering discussion, such as Rebecca noting:

> I really can't stand when it's like a monotonous lecture that you like read off the slides… I like phase out within like 5 min, and then we get to the end of the class and I'm like, I don't even know where we are.

Third, several learners discussed the usefulness of scaffolded learning activities that bridge the asynchronous to synchronous coursework, compared to SC set up lecture style. For example, Adain noted:

> There's definitely been some classes where I really like the structure of the class really having that asynchronous lecture, and then coming into class and applying that to a specific scenario, discussions being able to hear different viewpoints from different students or the professor kind of putting everything together to increase my understanding of the specific topic. That's what I love the most. I would rather have that than listen to another lecture.

Fourth, most learners stated a preference for active over passive learning activities. This was exemplified by Natalie who said:

We've taken courses where it's: Watch the asynchronous lessons, an hour video, take

notes, do all the things, and then we come to class, and it's just reiterating everything

on the slides, and that's personally when I lose my attention. I'm like I already knew

that when I was asked if I had any questions, I said No, because all information is on

the screen on the slide, I don't need to go over them.

Additionally, Adam warned against the overuse of learning activities that have a gamified

and repetitive nature, noting, "I think this is probably just a personal thing, but I am Kahooted

out. I was so sick of Kahoot… I've just seen it so much. It's just not helpful."

Lastly, several learners appreciated the use of personal stories and clinical applications

when learning from teachers. For example, Diana stated:

I really like when you guys relate what you say to a story, or something that makes it

easy to remember. Sometimes, if you just read off the slide and then just move on,

I'm like, okay. Well, I could have read that, and I still don't know how to associate

that with what it's supposed to be.

The use of personal stories was also seen in the classroom observation. In one of the

classroom observations, the teacher discussed their personal experiences with an intervention,

which led to further discussion, as seen with an influx of learner-driven questions and verbal

confirmation of connections made between learners' previous and current knowledge.

### Learner Positionality

*Learner positionality*, defined as a personal characteristic that reflects how a learner

references themself in relationship to others as they interact in the classroom, was another theme

that emerged. It appears that learner positionality affords participation in three main ways. First,

if a learner has increased confidence, it was likely due to prior knowledge and/or interest in the

topic. For example, a couple of learners, such as Diana, noted:

> Okay . . . something I already knew that I liked and had a lot of kind of confidence in
> it was like, pediatrics in general. I feel like I've experienced it a lot. I know I like
> working with kids. I know how to build connections in that area. So I feel like during
> that class it was easier for me to talk about it because I've seen a lot in that area.

Secondly, three learners noted they felt their confidence grew because of their classroom experiences online, which prompted further participation. For example, Adain noted:

> With telehealth, [from] what we've learned so far, we have the advantage over others
> when it comes to being able to talk with each other over Zoom. I think it gives me an
> advantage over other students just in the fact that this is not something completely
> new to us.

Along with confidence, aspects of identity formation surfaced, with Joan noting how online learning required her to have a level of self-motivation and ownership over the covered content. Based on her words, it can be inferred that she is forming the identity of being self-directed. Inversely, some learners noted they felt the need to hide when in the online SC due to anxiety about being wrong in front of their peers. From these comments, it can be inferred that they are forming an identity of being reliant on others when they are unsure of answers. The comment made by Adain exemplifies this:

> There's been a few times going into the harder case studies, especially cardio
> pulm[onary], and even neuro. Where oh, man, this stuff just isn't clicking for me. I
> don't feel confident. So yeah again, I'm gonna let everyone else kind of do [the]
> majority of this talking. I'll chime in if I feel like there's a specific point in the topic
> that I'm comfortable [with].

However, a couple of learners noted that the feeling of insecurity was countered using the breakout group function. For example, John stated:

> I think I'm able to learn more in the breakout groups, like I said before, like when we are in the big session people are a little shy. When we go into the breakout groups that's where everybody, you know, comes out of their shell and gives like the input of what they think is happening.

To note, a couple of learners stated how group membership inside breakout groups also influences participation due to positionality, with comments such as Cathy's:

> Personally. I'll usually try to, like, get things rolling, and then when people don't want to do anything, it gets contagious. So, then I just start like just putting myself on mute, trying to finish whatever I can and then I just won't talk like because if they're not talking to me. I'm not going to waste my time. It's pretty clear that no one wants to do this, but someone needs to. So . . .  I'll just take over on my side quietly.

### Social Connection

The final theme that emerged from the data was the difficulty in how learners connected socially in the online environment compared to students attending classes together in a physical classroom. To exemplify this, Adain noted "The one thing I don't like is not being able to see my classmates every day in person being able to have outside conversations with them." The lack of social connection time that naturally occurs in an in-person classroom during breaks and down-time does not occur online, which was also seen during both classroom observations. Because of the lack of non-academic social experiences in the online classroom, learners noted that they changed the way they attempted to connect with people. John stated:

> You sort of have to learn a different way on how to connect with people. Like before, you know, you connect with people by actually seeing them. I would say for me personally, you know, I connect with people by, you know, doing physical handshakes. But you can't do that in a blended program that often. So you have to figure out ways to connect with people.

Learners often relied on the affordances of the online learning platform to aid them in building social communication norms, with a few learners making statements such as Rebecca:

> The nice thing about Zoom is that when we first started classes like, we have some pretty interesting personalities in our class, and so, if I didn't have a face and . . . facial expressions to go with some of the things they were saying, it could have been taken in like a million different ways.

Additionally, a few learners also commented on feeling less guilty about being unmotivated in a class if they saw other students showing behaviors of distraction. Therefore, their connection to other learners in the online setting made them feel more comfortable to continue the current group behavior, even with knowing the cost to their learning and motivation. To counter the limited social connection learners experienced in their online classroom, four learners noted their reliance on finding community outside the cohort. For example, Rebecca noted:

> It's also kind of help[ed] me to become a more independent and, like, a stronger person. Because sometimes spending so much time, like so many hours alone, like it's kind of depressing, so you have to find ways to get out and be part of your community... you have to find, like, a group of people in your community that can support you.

**Discussion**

Using the lens of situative theory, the researchers attempted to uncover the affordances that influenced learner motivation, identity, and learning perception via participation in online SC taken at a hybrid DPT program. Findings from the present study indicate that learner participation is connected to three main themes: 1) teacher influence, 2) learner positionality, and 3) social connection.

Teacher influence plays a significant role in a learner's experience and success in a SC. According to Martin et al. (2019), an online teacher's role has many facets, including course designer, teacher, mentor, facilitator, and supporter, with the most important being facilitator. Therefore, consistent with the findings of our study, best practice recommendations are to maintain a student-centered lens by facilitating learning through discussion, formative assessments, and creating engaging and meaningful learning experiences (Brown et al., 2021; Martin et al., 2019; K. J. Volansky, 2020).

An additional consideration in online learning is course design. The structure and organization of the content and the choice of the content to be included and excluded is a part of the design (Martin et al., 2019). Similar to the findings of this study, strategies such as scaffolding and chunking should be included in the course design for effective learning (Martin et al., 2019). Also, the course design can be strengthened by the teacher's content expertise as a subject matter expert. Similar to the classroom observations in this study, teachers who connect content to current practice and real-life experiences helps deepen the learner's perception of content mastery (Gagnon et al., 2020; Martin et al., 2019, 2021).

As described earlier, positionality plays a central role in how an individual experiences the world and is profoundly shaped by social interactions (Bayeck, 2022). This study builds on

previous work showing positionality as context-dependent, based on social identities, and is constantly negotiated (Scipio, 2023). Therefore, teachers can shape a learners' positionality indirectly with their instructional design choices within the online SC in the same way that learners can shape the context of the classroom with their previous experiences and current social interactions. For example, like the findings of this study, a learner's prior knowledge and experiences can dictate an individual's level of confidence, which directly influences their likelihood to participate (Warren et al., 2020). Therefore, it is important for teachers to reflect on the positionalities of the learners and themselves as it will influence classroom norms and participation.

Consistent with previous studies, several learners initially reported a lack of social connectedness with their peers (Yarmand et al., 2021). However, learners overcame this using the affordances of Zoom, such as facial expressions and placing emphasis on finding community outside the DPT program. As discussed earlier, social interaction can be manipulated in online SC, and learners show greater engagement when learning is collaborative (Brown et al., 2021; Parrish et al., 2021). Therefore, if a teacher wanted to influence the social connection dynamics in the online SC, affordances such as learner-captured video with an emphasis on promoting non-verbal communication might improve social engagement (McArthur, 2022). Importantly, this technology must be relatable to learners and serve a function, or learners may not be motivated to use it (Shi et al., 2021).

Related to identity formation, our findings support the work of Hand and Gresalfi (2015) who recognized that identity formation is a joint accomplishment that occurs in an intact activity system. Additionally, in this study, it was found that a learner's willingness to participate in activities can be affected by a learner's self-efficacy, which is an aspect of their professional

identity (Wagner & Jackson, 2021). Applied, our findings further the work of understanding the interplay of affordances on participation and identity formation by successfully applying it to a graduate level online SC.

Therefore, this qualitative study supports the evidence that affordances change classroom dynamics and learning experiences within the online synchronous context (Greeno, 1998; Greeno & Gresalfi, 2008; Hand & Gresalfi, 2015). Based on our findings, a teacher can manipulate the affordances of the online SC to influence participation, which bidirectionally affects learner identity formation, motivation, and learning, as shown in Figure 1. Additionally, it implies that teachers should consider learner positionality when designing online SC activities.

**Figure 1**

*The Online Synchronous Classroom Acting as the Intact Activity System Where Learners Participate*
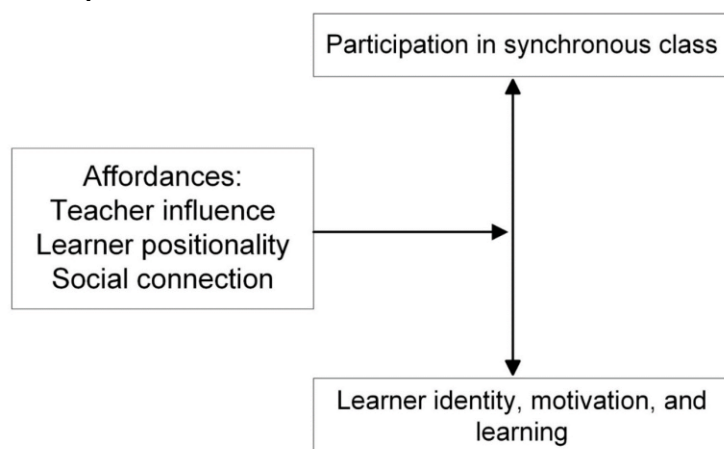


**Limitations**

There were limitations associated with this study that might affect transferability. For example, this study was conducted at one institution and may not reflect affordances driving participation at other institutions with different cultural and classroom norms. Additionally, it is unknown whether the nine voices who chose to participate are truly representative of all learners

at the institution investigated. Lastly, learners may have held back in their responses due to the lead researcher's relationship as a current teacher. However, this was in part mitigated by establishing rapport with learners, ensuring confidentiality, and sharing all researcher's positionalities, interests, and goals related to the study.

**Conclusion**

Learners who participated in the online synchronous classroom identified affordances that drove learner motivation, learning perceptions, and identity formation to include teacher influence, learner positionality, and social connection. By understanding the affordances that impact how learners participate, teachers can be tactful in the ways they select instructional design elements in their classrooms to improve learner outcomes. This understanding is especially useful for teachers who may have less familiarity with teaching online and those wanting to enhance learning, motivation, and identity formation via online classrooms.

Future researchers should investigate the impacts of teacher influence, learner positionality, and social connection to determine which affordance(s) are most impactful in improving learner participation, identity, motivation, feelings of belonging/connectedness, and learning outcomes in the classroom. Furthermore, future researchers should investigate if the affordances found in this context are replicated in other contexts with different classroom and cultural norms, such as at different institutions and different graduate-level programs utilizing online synchronous classrooms.

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