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Fostering Autonomy and Relatedness in Online Education

Busra Dokmen
Harmony School of Innovation Sugar Land
busradokmen24@gmail.com

Zahrah Butler
Rice University
zmb1@rice.edu

Yetkin Yildirim
Rice University
yetkin@rice.edu

Abstract

The online learning necessitated by COVID has required students to be more self-regulated than ever before. But online education is not always structured with student needs in mind, especially the needs autonomy and relatedness as defined by Self-Determination theory. In order to increase retention and keep students from dropping out, online learning environments must find ways to keep students engaged and motivated. Project-based learning offers one model for active learning that can be adapted into online environments, but this will require direct and deliberate communication from teachers in order to positively affect student learning. The present article will consider strategies for using active learning to teach these two essential student needs of autonomy and relatedness online as well as review surveys of student satisfaction with online learning in order to help teachers determine ways to better meet their students' psychosocial needs in an online context. The first study analyzed impacts of perceived psychological environment and academic emotions on higher education students' intentions to drop out through surveys at an institution in Norway (n=206). The second study gathered data using questionnaires that asked college students from Austria (n=6071) and Finland (n=1653) to self-report the impact varying factors had on their academic experience during COVID-19. Results from these studies reveal that social factors such as belonging and interpersonal relationships impact student academic success, along with the personal motivation for academic success.

Keywords: online learning, Self-Determination Theory, project-based learning, active learning, social and emotional learning, autonomy, relatedness

Introduction and Background

Learning environments that are engaging and interactive can have positive long-term effects on student academic achievement. The social experience of the classroom has been shown to directly affect a student's ability to master course material, and a student's perception of their own social relationships in the classroom is a predictor of his or her likeliness to drop out (Chiu, 2021). However, with the unprecedented rise of COVID-19, many schools around the world have shut down and moved their lessons online. As a result, many students are now without the social support that once drove their learning. This has caused them to lose motivation and become less engaged in their course material, which has in turn led to an increase in student absenteeism and a rise in drop-out rates.

Online education requires students to be more self-regulated than ever before. But the tendency of virtual classrooms to isolate students from each other has led to a lack of engagement and increased the risk of students falling behind in their studies. The high school dropout rate had been declining steadily until 2019, but anecdotal evidence from teachers suggests that COVID-19 may reverse the trend. Moreover in 2020, about half a million fewer students around the country enrolled in college. It's too early to determine whether online classroom environments are specifically to blame for these losses, but it is clear from the research that retention in online classes is consistently lower than face-to-face classes (Bawa, 2016). This suggests that students may not have the self-regulation skills required to face the unique challenges of online learning. The present research is interested in determining how online learning impacts students, especially how social factors affect education.

Self-Determination Theory provides a useful lens for clarifying the needs of students and explaining the influence of social factors on education. According to this theory, experienced competence, autonomy, and relatedness are essential needs that must be met for a student to grow and learn. In classrooms that support these three psychological needs, students are more likely to be motivated. (Reeve, 2013). Perceived relatedness is the primary predictor of behavioral, emotional, and agentic engagement (Chiu, 2021). This has led to the acknowledgement of the importance of teacher support and has been used to promote learning in face-to-face classrooms, but it has been largely missing from online learning research. (Chen & Jang, 2020; Hsu et al., 2019).

Higher education spaces are meant to places where a student's whole wellbeing is supported, not just their academic growth. Social and emotional skills are recognized as crucial components of education, and students need these skills today more than ever (Tunc et al, 2022). Unfortunately, the social isolation required by the pandemic has made this social and emotional dimension of education much more difficult. The transition to digital classrooms has led to a lack of informal interactions and an increase in the transactional distance between students and teachers. This creates a psychological gap that can lead to misunderstanding and negatively impact student engagement.

To address this problem, online learning must find ways to meet student's basic psychological needs and promote social relatedness, while at the same time providing them opportunities to practice what they've learned on their own. In the context of online, distanced learning, this mix of autonomy and collaboration may look different than it did in the past. Even when they are working at home, students still need extensive communication from their peers and instructors in order to help integrate their learning into everyday life.

Project-Based Learning (PBL)

In the past, active learning has been one solution for fostering autonomy and relatedness in students. According to the available research, students learn best in experiential, collaborative environments (Blinkoff, 2021). For most students, long-term learning comes from teaching that situates its material in a practical context rather than a simply theoretical framework. The best way to provide students with these applied, practical skills is through "active" learning, which involves interactive and meaningful exercises that closely resemble real-world situations. Active learning has been shown to foster creativity and open-mindedness in students, and because it requires the communication and collaboration of involved students, students have to actively pay attention and cooperate and bring their own ideas and solutions to the table for different settings (Blinkoff, 2021).

The most common form of active learning in higher education is project-based learning. In this format, students are given a real-world problem that requires them to learn concepts, apply information, and collaborate with others in order to find a solution (Marx et al., 1994). PBL fosters self-determination by making students responsible for their own learning as they "actively participate in the processes of constructing knowledge and making meaning" (Mergendoller et al., 2006). They learn to set goals, plan a course of action, select appropriate strategies, self-monitor, and self-evaluate their learning (English & Kitsantas, 2013). Project-based learning instils self-determination in students, which research has shown is strongly correlated with academic success (Zimmerman, 2008).

The rotational station model is another type of active learning that gives students experience with a real-world project. In this type of learning, groups of students rotate through the different stages of a project in a more condensed fashion, so while they may not be seeing one project through to completion, they still gain experience through practical, contextualized knowledge. The different modalities offered by this type of learning give students much more experience than simply listening to an instructor. Students speak with each other, they draw, write, explain, present and build their creations and take pride in the work they do which nourishes their hunger for learning and discovering the world through individual scopes of interest and hobbies. Once that association of excitement and eagerness to learn ignites within the student, it triggers a sense of autonomy and responsibility, and learning is no longer forced (Brandt & Thompson, 2020).

Teaching Self-Determination Online

Clearly project-based learning is an excellent way to meet student needs of self-determination, but does that hold true when instruction shifts online? Rotational station learning is clearly dependent on in-person teaching, but early case studies do suggest that PBL can be adapted to virtual classrooms. Some teachers have adapted their project-based curriculum online, which they've viewed as essential to maintaining social connections during remote learning (Miller et al., 2021). Another study found that while online PBL still results in a positive impact on self-directedness, there is still a problem with student perception: students don't consider online projects to be as meaningful as face-to-face projects (Abuhmaid, 2020). This could be a related to the transactional distance of online learning, a gap in communication that creates negative emotions and misunderstanding. Teachers should be aware that translating such projects online may require more direct communication with students about their concerns

and needs. It could also be the case that online groupwork is simply more difficult and frustrating for students to coordinate.

Before COVID-19, researchers found that students utilized self-regulated learning strategies in online learning more regularly than they did in face-to-face classrooms (Lee & Tsai, 2011; Sletten, 2017). But this relationship has shifted with the transition to online learning. A survey of 20,000 middle school and high school age students conducted in 2020 found that only 41 percent of them could motivate themselves to do their schoolwork at home. Self-motivation and self-determination thus remain the biggest hurdles to a productive online learning experience. However, these results may have a lot to do with the type of education students were receiving prior to the disruption of COVID-19. In schools that already prioritized active learning, COVID-19 did not severely disrupt instruction (Mathewson, 2020; Levine, 2020). The more that students were encouraged to take responsibility for their own learning, the more easily they were able to manage the transition to online learning.

The Institute for Self-Directed Learning is a helpful resource for teachers struggling to teach self-determination now when students are less motivated to learn than ever. One important change they suggest is the movement from a top-down accountability model focused on the teacher-student axis to a more community-focused model (Institute of Self-Directed Learning, 2021). According to their research, students are at their most self-determined when they are being held accountable for learning by a set of norms or a code of conduct generated they have generated themselves, not by an authority figure.

This emphasis on community, whether online or in-person, is evident in other research too. Ryan and Deci have found that a student's motivation is directly related to their sense of belonging to a classroom or academic community (Ryan & Deci, 2000). The more social investment that students feel, often because they perceive that their work is being acknowledged by others, the more likely they are to persist in their learning (Carpenter & Pease, 2013). One strategy for creating such a social investment online is to develop community agreements for the digital classroom. This allows students to determine their learning goals together and define what kinds of behavior are appropriate to these goals, as well as how they will hold each other responsible. Such agreements can help educators build a culture of accountability and foster students' ownership in their work, which may help to compensate for some of the depersonalization and transactional distance that comes with online learning (Henry, 2020). The more emotionally and socially secure students feel in their learning environment, the better their work will be.

Teaching Relatedness Online

When students practice critical thinking and problem-solving skills in a collaborative environment, they also build confidence and nurture crucial social skills. Learners get to discuss ideas and reflect on each other's work while also reflecting on their own strengths and shortcomings, which can help them develop autonomy and a sense of responsibility. Group work also promotes relatedness, as it requires peers to communicate and collaborate well together, delegating tasks and managing group emotions in order to bring the project to its conclusion. The structure of online classrooms makes it harder for teachers to promote relatedness in students, but several successful examples of social collaboration in virtual learning do exist. Some teachers have taken advantage of the "breakout room" feature of

video chat applications in order to quickly create student groups within a particular assignment. This can be a short-term solution, but a more effective approach involves a more deliberative integration of collaborative work into the curriculum. The most important consideration for teachers is communication, as students are more likely to be engaged in group work if they understand the reason for the collaboration (Columbia Center for Teaching and Learning, n.d.). This could also mean choosing an appropriately complex problem for student groups that requires them to combine their various skillsets.

One example of a school that has managed the transition to online learning relatively well is the South Bronx Community Charter High School (Levine, 2020). Educators there have been able to build productive collaboration and class community online, and their success offers a useful glimpse of how relatedness might be fostered in virtual classrooms. First, the problems of technological access were addressed, and every student was required by school policy to be given a device that enabled them to work online. This meant that at the very least, all students had and were familiar with the tools they needed to participate in an online community, even before the pandemic. It also meant that teachers were already familiar with using online learning management systems, making the transition from hybrid learning to fully online learning much smoother. But more importantly, a structure of small advisory groups instituted before the pandemic hit provided a built-in accountability mechanism and served to minimize each student's sense of isolation (Levine, 2020). Essentially, these advisory groups were small groups of students who would regularly meet with an advisor outside of class to discuss their professional and emotional development. Because the relationships of trust were already established before learning moved online, the school saw a much lower drop in attendance once the pandemic hit. The expectation established by these groups also allowed the school to check in with students daily, which in turn reduced student isolation and fostered more accountability. This type of trust and accountability is essential for creating collaborative environments (Columbia Center for Teaching and Learning, n.d.).

Student Surveys

One useful analysis by Holzer collects self-reported data from students in Austria and Finland regarding their basic psychological need satisfaction in relation to online learning. (Holzer, 2021) The study helps to clarify how social factors affect students' educational experiences. In Austria, a survey measured which psychosocial factors affect the student's desire to drop out of school and analyzed age and gender differences within the results. The survey respondents were all teachers, social workers, and early childhood educators. They answered questions about their psychological states and their opinions regarding education experiences in the following categories: confidence in student role, instructional quality, group-work satisfaction, teacher-student relations, and sense of student community. The second study was conducted via survey in Finland. It analyzed the impact of COVID 19 in regard to academic factors while measuring three basic needs: feelings of competence, autonomy, and relatedness. The second study tested a wide age-range of college students (mean 25.76 years, median 23 years) and tested for three basic need factors: competence, autonomy, and relatedness.

The first study analyzed impacts of perceived psychological environment and academic emotions on higher education students' intentions to drop out through surveys at an institution

in Norway (n=206). A strong positive relationship was found between student-teacher relations and instructional quality, paired with a negative correlation between a sense of student community and loneliness (Holzer). The study also found a high positive correlation between testing emotions and learning related emotions. Additionally, instructional quality, learning related emotions, test emotions, and loneliness, had a significant contribution in the variance of a student's intention to dropout. The results of the second study were less straightforward. It relied on data gathered using questionnaires that asked college students from Austria (n=6071) and Finland (n=1653) to self-report the impact varying factors had on their academic experience during COVID-19. The second study found that the strongest relationship in factors was between autonomy and competence-influenced intrinsic learning motivation. Additionally, relatedness among peers had a slight impact on positive emotion.

In both studies, their responses were considered valuable for analysis. Study one, done in Austria, found a high correlation between competence and autonomy, leading to an investigation of the variance inflation factor (VIF); a VIF of 3.94 for competency and 3.40 for autonomy were found. Although acceptable, the values raised concern about the reliability of Study 1, and it was concluded that it should be interpreted with slight wariness, as certain academic opinions consider the VIF values to be wary. After performing Confirmatory Factor Analysis (CFA) and invariance testing, CFA results showed that the data done in each study must be looked at individually to come to a conclusion about the factors' impacts in the given country. Two structural equation models, Model 0 and Model 1 were created to measure the effect of the three basic needs on the remaining factors.

Autonomy was a found to be a positive predictor for intrinsic learning motivation, and self-regulated learning positively predicted learning motivation. Competence and autonomy were highly correlated in the first study as well, with competence having the strongest effect of positive emotion. In Austria, it was determined to have a small negative prediction on positive emotion while in Finland, a positive prediction was found. Additionally, Finland's results saw a small positive relatedness for positive emotion onto intrinsic learning motivation and positive emotion. In both studies, self-regulated learning positively predicted learning motivation, with a slight negative prediction for positive emotion in Austria. In the Austrian study, competence tended to be the most significant predictor for outcomes, whereas in the Finnish study, it was the most important determinant of positive emotion. Using the MPlus Model Constraint command, researchers found that all of the regression coefficients for the Austrian study were statistically significant, aside from those between autonomy and positive emotion, as well as self-regulated learning and positive emotion. Using the same analysis, all of the regression coefficients in the Finnish study were statistically significant aside from that between autonomy and relatedness.

Conclusion

The overall conclusion to these studies points again to the importance of explicit, direct communication of goals and needs in online learning. In order to encourage self-determination in students, universities need to instruct students to structure and plan their learning consciously (Holzer). Other studies have found that students often do know about self-regulated learning strategies, but misperceive them as burdensome and unnecessary (Foerst et al., 2017). To help students maintain relatedness in an isolating online environment,

educators need to pay particular attention to compensating for physical separation, conveying enthusiasm, encouraging student reflection on newly learned topics, facilitating discussions, and monitoring contributions from each learner (Purcell and Lumbreras, 2021). Digital collaborative documents (like Google docs, Google sheets, etc.), online whiteboards (like Miro board), Zoom polls, Twitter discussion threads, and GroupMe/Slack channels can be used to increase student engagement and solicit peer feedback (Glantz et al, 2021). It is also important that teachers develop metrics for showing the consistency of learning outcomes across a diversity of modes (Blankenberger and Williams, 2020). Most importantly, educators need to be trained to bring active learning and collaborative instructional approaches into their courses and to communicate the benefit of such approaches clearly with students, even in an online environment.

In order to increase retention and keep students from dropping out, online learning environments must find ways to compensate for the loss of social experiences that comes from leaving the face-to-face classroom model. Autonomy and relatedness are two essential needs that must be met if students are to stay engaged and motivated in online learning. Teachers can meet these needs by adapting active learning models into the online course environment, but this must be accompanied with extensive communication and direct explanation of the goals for each project and the student needs that are being met. Teacher-student communication remains the most important factor in predicting student motivation and learning success.

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