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THE ENGAGEMENT OF STUDENTS IN ONLINE LEARNING

A MASTER'S THESIS SUBMITTED TO THE FACULTY OF BETHEL UNIVERSITY

BY NATHAN JACOBSON

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

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BETHEL UNIVERSITY

THE ENGAGEMENT OF STUDENTS IN ONLINE LEARNING

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APPROVED

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Abstract

Online education should include the engagement of students in as many ways as possible. Social, emotional, behavioral, and cognitive engagements are the primary types of engagement that can be applied. This research was conducted firstly, to discover to what extent engagement can be leveraged in education, with the purpose of improving the academic achievement of students. The second purpose is to identify strategies that can be implemented in educational instruction with the goal of increasing academic engagement across the four identified types of engagement. It was discovered that engagement can be utilized to improve student outcomes, and that there are distinct strategies to increase academic engagement.

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Chapter I: Introduction

In February and March of 2020, schools, teachers, students, and parents across the globe were forced to make one of the most abrupt and disrupting shifts that the educational system has ever seen. The walls of school buildings were expanded to encompass indoor and outdoor spaces across their community. Kitchens and bedrooms became makeshift classrooms, and parents became teacher's aides in addition to working their own jobs from home. While online learning had already been building and expanding over the last few decades, this forced shift has truly pushed technologies to advance, strategies to be formed or adapted, and approaches to education to be revamped. There are now an incredible number of possibilities for schools, educators, and students to not only be successful in online learning, but to really thrive in online learning.

Although it seems as though the COVID-19 pandemic is slowing and communities are beginning to return back to normal, education will never return to what it looked like in January of 2020. It is not expected that online learning will become a thing of the past, nor is it expected that remote learning will become just a blip in the radar of educational history. It is expected that online learning will continue to play a significant role for school districts and their families. Now that we have seen the expansive opportunities that online learning provides, it will continue to be a preferred option to meet the differentiated needs of certain families and communities.

Prior to 2020, online learning was more or less "independent" learning where evidence of learning was presented or shared with the instructor via the internet. There was limited connection between instructors and classmates, and although connection and discussion were attempted, it tended to be forced. True collaboration between students as they learned together and created together was rare. Most students are not as successful learning independently, so when classrooms were shuttered and students were not able to meet face to face, it fell on schools and educators to replicate the type of engagement that leads to academic success in the classroom and bring that engagement to online learning. (Young & Bruce, 2011)

Throughout and after the COVID-19 pandemic, the research and thinking that focused on the topic of online learning exploded in new directions as teachers tried numerous ways of making learning happen during the pandemic. Now that the outcomes from this shift can be seen, we can really assess the successes and failures of how teachers taught and how students were able to learn through online learning. There is data that shows the importance of engaging online students in a variety of ways in order to achieve academic success. (Buelow, 2018) (Prestridge & Cox) We can couple this data with proven strategies and structures from within the classroom to create adaptations of those strategies and structures that will work for students who are learning from outside of the classroom. This will provide that same opportunity to students who are learning remotely to achieve their desired academic outcomes. (Bergdahl, 2020)

In general, studies show that the engagement of students translates into increased levels of academic achievement. As a result, in any mode of instruction, the engagement of students needs to be a primary focus of instructional design. (Czerkawski & Lyman, 2016) With the expected need for online learning to continue growing over time, it is important that as an industry, we are able to adapt to the academic engagement needs of students who choose to participate in remote learning. This research is important in gaining an understanding of how online learning can be a medium of education that allows students to achieve high levels of academic success.

In order to fully understand the research, it is important to clarify some of the terms and ideas that will be discussed throughout the research:

Academic Engagement - the interaction between the time, effort, and other relevant resources invested by both students and their institutions intended to optimize the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution. (Czerkawski & Lyman, 2016)

Behavioral Engagement - refers to student participation and conduct in relation to the behaviors associated with learning (Bergdahl, 2020)

Cognitive Engagement - the engagement of the brain, the investment in learning, and the process of how students are thinking about what they are learning. (Bergdahl, 2020)

Emotional Engagement - the ways in which students react to instruction, peers, and learning.

This could be positive and/or negative feelings towards the learning process. (Bergdahl, 2020)

Social Engagement - the social, collaborative, and interactive aspect of academic engagement. (Bergdahl, 2020)

Choice Boards - a graphic organizer that allows students to choose from different methods of learning about a concept and/or choices of how demonstration of understanding will be presented.

Technology Enhanced Learning - the use of technological tools as resources and/or vehicles of educational concepts. (Czerkawski & Lyman, 2016)

While much has been researched and written on the engagement of students in the typical face to face classroom, where students and instructors are in the same physical space, there has been less comprehensive writing on the engagement of students in online learning environments, where students and instructors are not physically together. Their interactions often happen via email, discussion boards, or virtual meetings. The purpose of this study is to compile research and findings to discover the effect of engagement in online learning as well as building best practices of strategies that can be utilized in order to increase the successes of students who are participants in online learning. This focus of what I would like to discover leads me to two guiding questions;

- How can academic engagement be leveraged to improve student outcomes in online learning environments?
- 2. What methods can be implemented to improve engagement in online learning?

Chapter II: Literature Review

The decision to focus my research on online learning was prompted by being selected as the online social studies teacher for my school, teaching grades 6-8, when our district made the choice to offer fully online instruction to students as a result of the COVID-19 pandemic. I wanted to compile research that could be directly translated into improving my classroom instruction. Because this was a new type of teaching experience for me, I wanted to enter into online teaching with as many skills and tools as possible. As an instructor, I am acutely aware that the successes or failures of this endeavor could have a direct correlation to the successes and failures of my students.

I initially conducted general research of best practices through some common education websites like edutopia.com and teachingchannel.com. I discovered that the research was fairly limited. I also went to the education section at my local college university, searching for books that focused on online learning, and discovered very few relevant texts that would be beneficial. Even those that I found to be helpful were very limited in the scope of being useful for online education. From there, my primary source of research was the online articles and texts through my university library databases. ERIC, ProQuest Education Journals, and Academic Search Premier were the databases used, with all searches conducted limited to peer-reviewed results.

As resources were gathered, each article and piece of research was read, annotated and summarized for meaning and relevance. Then, the research was grouped into topics which were used to build the guiding questions and outline for the research. As the research progressed into the later stages, new studies and research continued to be discovered. This was expected as studies and data from the online learning that had begun during the pandemic began to be published. These discoveries were included and provided further backing to the previous research.

Engagement in Online Learning

For the purposes of this study, engagement can be defined as "the interaction between the time, effort, and other relevant resources invested by both students and their institutions intended to optimize the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution." (Trowler, 2010) Engagement can further be broken down into emotional engagement, behavioral engagement, cognitive engagement, and more recently, social engagement. (Buelow, 2018) (Bergdahl, 2020)

Improved student outcomes can be observed through many different indicators. Improved student grades, increased time on task, self-reflection, and student confidence are some of the many data points that can be used as tools to gauge the level of success experienced by students in their learning environment. While these are important markers in assessing outcomes, it is important to note that student improvement may look different for each student. Diverse learners will show growth in different ways and to varying degrees. The purposes of this study are not to discover what works for all or to how to raise student outcomes by "x" points, but rather to build a toolbox of proven, effective strategies for instructors to draw from in their instructional practice. This toolbox can then be a resource for instructors as they seek to solve the continuous task of meeting students where they are at, assessing their needs, and implementing strategies that will help students take the next step forward to advance their learning.

The first goal of this research is to analyze the effect of emotional, behavioral, cognitive, and social engagements on student learning; particularly through the lens of an online learning environment in order to learn how student outcomes can be improved. The second goal will be to analyze and assess specific strategies and methods from which instructors and students can draw from. The goal of this is for instructors to be able to assess the academic progress of students. In this study, the focus is the online learning environment. That said, the ultimate goal is to improve online instructional strategies so that students can achieve academic success in

that online educators can use to help create an approach to online teaching that can aid in the improvement of the emotional, behavioral, cognitive and emotional engagement of their students, and in turn to improve the student outcomes of students in online learning. This practice, similarly to the practice of teaching in-person, must be targeted, differentiated, and effective for the specific students for whom the educator is responsible.

Within the framework of education, there are three primary roles of individuals that impact and are impacted by education. The primary role in learning is that of the student. The student is the most determinant factor and has the ability to influence everything needed to achieve learning goals. (Mayasarai, 2020) The second role in learning is that of the teacher. In this role, the teacher helps students so that they can learn according to their needs and interests. (Mayasarai, 2020) And the third role is that of the administrator. Administrators help create and support the systems and structures that allow effective learning to occur. As these roles are more effective in their work together, the greater the achievement of the learning goals of the student can be.

Prior to 2020, the number of secondary students who participated in online learning was a small percentage compared to the overall number of secondary students who participated in traditional face to face learning. According to the National Center for Education Statistics, fewer than 13% of public middle schools offered any courses fully online. Of those schools that offered online classes, 78% of them offered only one or a few online classes. At the high school level, 57.5% of schools offered online classes, but the majority of those that did, 54%, offered only a few classes online. (NCES, 2019) The students that participated in online learning prior to 2020 were students that selected that option based on necessity. They were motivated to take one or two classes online, often because of scheduling conflicts, the lack of course availability, or other special circumstances that required distance learning. These students were typically self-motivated and had access to the required resources that would allow them to succeed.

These resources were the tools like internet access and the necessary technological tools for student success.

In 2020 and beyond, the number and "type" of students that participated in online learning changed drastically. As a result of the COVID-19 pandemic, many students that had never considered, let alone participated, in online learning were forced to take classes from home. They found themselves using tools they were unfamiliar with and without many of the social supports they were accustomed to in their traditional face to face educational setting. In February of 2021, 43% of students in the United States were enrolled in remote instruction. In addition to that, 21% were enrolled in hybrid instruction, which is a mix of online and face to face instruction. At that time, only 35% of students in the United States were enrolled in an educational experience that was fully in-person. (NCES, 2019) Many of these students did not choose to engage in online learning, but instead were forced to be in online learning because of external factors that were related to the COVID-19 pandemic. There were a range of factors, from individual health concerns about being in a class full of students, to reduced options from school districts for in-person learning, to needing to quarantine as a result of school outbreaks, among other reasons. But the reality is that students who were not accustomed to online learning or did not particularly want to participate in online learning, were thrust into this new world of online education which was completely different from the education experiences that they were accustomed to.

With the ongoing pandemic, as well as the flexibility offered to families by online learning, it is expected that the option for online learning will continue to be available for students even beyond COVID-19. The educational system will continue to see a higher number of students that choose to opt in to online learning than those that they were used to prior to 2020. With online learning becoming more mainstream and more available, it is important that the educational systems progress and adapt for the needs of their communities and are able to adequately provide for the educational needs of the students and families who choose to

continue participating in online education. Going forward, this may no longer be out of necessity, but rather out of preference or the specific learning needs of students.

Engagement and Student Outcomes

Student engagement has long been a focus of study in education. It is often found to be a determining factor that can improve upon or increase the levels of student outcomes. Student engagement has consistently shown to be positively linked to student outcomes. It is noted, however, that different institutions have had varying degrees of success in translating engagement into student success. (Czerkawski & Lyman, 2016) These varying degrees of success points to the importance of engagement that is meaningful and appropriate.

Engagement tends to look different in online or blended learning than it does in the traditional classroom, but it is just as important, if not more so, to effectively engage students in an online environment. When online students are effectively engaged, results show increased levels of achievement. (Saritepeci, 2015) Saritepeci was able to discover this by analyzing development scores of student engagement in control groups and experimental groups prior to learning, during learning, and after learning. These scores were compared to the student achievement demonstrated at the outset of learning as well as at the end of learning.

Engagement is a result of a student's involvement and contributes to their learning and sustains their further involvement in course activities. (Meyer, 2014) It is also important to understand the role of teachers and students in how they can provide the most positive outcomes for students. It is the role of the teacher to *facilitate* the learning, and that the participation of the student is required in order for learning to be successful. (Wdowick, 2014) This tells us that the ultimate responsibility of learning falls on students, and that it is the role of the teacher to engage students in the resources, collaboration, and activities that will help students best participate in their learning. Mayasari describes the role of the educator in a similar fashion. She says that the role of the teacher is to be a learning resource, a

demonstrator, a motivator, and a manager. (Mayasari, 2020) This research supports the idea that the participation and engagement of the student is foundational and can lead to the successful transfer of knowledge and skills.

The ability for students to take responsibility and have autonomy is even more important in an online learning environment than it is in face to face learning. Students must have the ability to take responsibility for their learning and to hold themselves accountable for the things that will lead to success. These skills were some of the major markers that helped students succeed. The reason for the importance of this is that in a typical face to face classroom the instructor is able to visually notice students who begin to become disengaged and proactively redirect or re-engage students back to instruction or learning tasks. In an online environment, this is far more difficult because of the inability for instructors to be physically present with students. It is much easier for online students to hide their disengagement from their instructors.

Overall, it is important that instructors take ownership of their design to improve student engagement. Online students have fewer ways to be engaged and more numerous opportunities to become disengaged than in-person students. Because of this, instructors must take advantage of the opportunities that they do have to build engagement so that they can maintain the connection and involvement of students. (Meyer, 2014)

The overall effect of remote learning on student outcomes has been found to have mixed results. In studies on virtual charter schools, they were found to have lower levels of student achievement when compared to schools with typical in-person instruction. (Prettyman & Sass, 2020) These studies found that students scored lower on standardized tests, typically -0.1 to -0.4 standard deviations of normalized test scores. This equates to nearly one fifth of the expected annual learning that students could be falling behind. It was also found that students performed lower across nearly all subject areas, and were more frequently associated with students failing to graduate on time. (Prettyman & Sass, 2020) This type of evidence brings a sense of urgency to the development of online learning. Training and best practices must be

identified and implemented so that online students have equitable access to a good, high quality education.

Emotional Engagement

Emotional engagement refers to the ways in which students react to instruction, peers, and learning. Some examples of how emotional engagement can be observed are joy, interest, frustration or boredom. (Bergdahl, 2020) Emotional engagement is important because it provides a window into how students are feeling about class and how they feel about their relationships and interactions within that class. When an educator understands and leverages emotional engagement, they are able to better help students "buy in" to the learning.

Learning in an online environment provides specific challenges to the emotional engagement of students. When students perceive instruction as "boring" they increasingly turn to digital technologies to escape. (Bergdahl, 2020) The special danger this holds for online learners is that the majority of the tools used to distribute and engage students are digital technologies. So, when a student feels bored, the very tools used to facilitate their learning can quickly become the tools that they turn to when they want to escape instruction. Because of this, it is imperative that educators are not only able to maintain the emotional engagement of students, but are also able to monitor how the digital technologies are being used by their students.

Allen and Phillips discovered that in North Carolina, a team of ELA teachers found a way to engage their remote students in learning in a way that changed not only their own instruction, but the instruction of students throughout the state. They were able to get students to buy into not only their learning, but also to buy into the assessment of their learning. When they implemented choice boards into their curriculum, it was found that both engagement and ownership were increased, and students were more eager to engage in their work and their assessments. (Allen & Phillips, 2022) The reason choice boards are so helpful in encouraging

students to buy-in is because students are able to select the process of learning, how they will produce evidence of learning, or both. Choices can also be provided that allow for a differentiation of difficulty so that students can enter into learning at a challenge level that they are comfortable with.

For educators, the ability to scan the room, see student activity, and assess the emotional engagement of students through facial expressions and the interest of students has been a relied upon tool that they count on for an understanding when learning is occurring or when the teacher needs to "pivot" in order to re-engage students in learning. This is one of the barriers that online instructors face in gauging the emotional engagement of students. (Tawfik, 2021) In order to combat this, they must find strategies to quickly and efficiently gauge the feelings of students towards learning so that they have the opportunity to re-engage students back into the learning processes. From Tawfik's study, one of the participants stated:

You have to check on the student's emotional well being more strategically, but also more purposefully have to get to know your students and the needs of your students and their individual struggles, without drawing attention to them in the whole classroom. (p. 932)

It is clear that the same strategies used in face-to-face instruction are not as effective when used in online learning. For this reason effective strategies for checking in on the well being of students in an online environment must be discovered.

Another discovery, by Wong, has shown that goal setting plays a significant role in the academic success of students. Goal setting allows students to guide and assess their own learning based not only on perceived outcomes, but by allowing students to gauge and plan the strategies and pace by which they will be able to successfully meet the outcomes that they identify. Because online learning is largely self-regulated by students, this can be a strategy to maintain the engagement of students and keep them invested in the processes and how they influence the outcomes of learning. Studies show that specific goal setting can be highly

effective in helping students regulate their learning, especially when the goal setting is session specific and particularly effective in sessions where students may be less interested in the topic of the session. (Wong, 2021) This effectiveness would be very useful when courses or sessions of courses are a "means to the end" for students and is something where students lack interest in. This could be effective because it causes the student to refocus on what they are working toward, and how their engagement in learning will benefit them.

Student reflection is one of the most powerful tools that can be utilized to determine the feelings, interest, and comfort level of their educational experience. Student reflections are tools that can easily be a part of online instruction, but must be meaningfully related to instruction.

Some examples of student reflections are journals, personal evaluation, blogs, and portfolios.

(Plough, 2017) These reflections can be embedded as an assignment for students to complete, or can be simply tossed in mid-lesson or at the end of the lesson for a quick check-in for students to think about their successes and difficulties in terms of how they have been able to engage in the learning. When self-reflection and self-assessment are embedded into the online classroom, it pushes students to assess their engagement in learning, emotionally, behaviorally, and socially. (Wang, 2017)

When assigning individual work and homework for students, the emotional engagement of students can be leveraged by encouraging student opinion and real world application. When assignments lacked practicality or connection to the opinions of students, they tended to be perceived as more disengaging to students. As a result, independent work that allows students to share their thoughts and opinions or connects to practical, real world situations, is work that tends to have an increased level of "buy-in" for students to connect with. Practicality not only applies to student work, but to facilitated discussions between students as well. Discussion deemed as fact based and straight-forward were less engaging than facilitated discussion that was practical and had application to the real world. (Buelow, 2018)

Buelow discovered that "students appear to be more engaged when they learn something that changes the way they understand an issue or concept, connect their learning to societal problems or issues, have fun in online chats or discussion, and/or connect new learning to prior experiences and knowledge." This provides a very good guide to what students connect to. When students are allowed to give their opinion, listen to other perspectives, discuss personal experiences, or address significant social issues, they tend to be more emotionally engaged in the learning and as a result, tend to have heightened learning experiences. (Buelow, 2018)

Research informs educators on how to effectively manage the emotional engagement of students. First, it is important for instructors to have a connection with their students that allows them to connect and assess their emotional well-being. (Tawfik, 2021) Second, instructors can implement assignments with aspects of student choice and opinion that have real world application. (Buelow, 2018) Lastly, to maintain emotional engagement, it is important to provide opportunities for goal setting and authentic self-reflection throughout the learning process, and have ways to re-engage students when they or the instructors see that emotional engagement is beginning to lack. (Wong, 2021)

Behavioral Engagement

The behavioral dimension of student engagement refers to student participation and conduct. This type of engagement can be observed through positive or negative actions that relate to learning. Positive actions are behaviors that students exhibit when they take action to learn. Some examples are taking notes, signaling participation in class, or completing assigned tasks. Negative actions are those that disrupt learning, like disruptive behaviors, not following classroom rules, or refusal to engage in productive work. (Bergdahl, 2020) The nature of online learning can make an assessment of behavioral engagement difficult. Being physically separated from students makes it tricky for instructors to see if students are "doing" the activities

of an engaged learner. But, some indicators for behavioral engagement could be online attendance, logging into online platforms, and completion of academic or non-academic school work.

Bergdahl has conducted a study that revealed the behaviors of students in online learning environments and how those behaviors related to the academic successes of students. It was discovered that social media played a significant role in determining the academic success of students. The less time students spent on social media sites like YouTube, Facebook, or Twitter, the more they were able to succeed academically. The differences in reported time on social media differed greatly between low performers, average performers, and high performers. (Bergdahl, 2020) As a result of these findings, if students are able to avoid behaviors that tend to distract them from learning, it will have a positive impact on their overall academic achievement.

Above all, it was found that if the technology was a behavioral distraction, the grades of online learners suffered greatly. One of the largest contributors to this was games. When the technology of students was used to access games during class, this significantly correlated with lower grades for students. These distractions were self-identified by many low performing students as contributions to their own lack of success. (Bergdahl, 2020) While in-class distractions from technologies occurred regularly, some students were able to handle those distractions better than others. High performance students were able to develop strategies to use digital technologies in ways that were productive and supportive of their learning goals. Although they had similar urges to engage in distracting behaviors, they were more able to resist the urges and avoid distractions from technologies. (Bergdahl, 2020) This is an indication that if the self-regulation of students is able to be developed, students will have greater success as online learners.

This tells us that although students may have developed ways of engaging with digital technologies in everyday life, they may lack the development of understanding how to use them

in a way that leads to academic success. As a result, it is important that schools and educators are able to help students develop the ability to regulate their use of technology for learning. One particularly troubling finding for educators was the discovery that the things that are disengaging for some students are the same things that are highly engaging for other students, and direct them towards lower performance and higher performance. Therefore, it is very important for instructors to assess the needs and engagement of their students in order to differentiate for the needs of their students. Likewise, it is incredibly important that schools, instructors, and students work together to develop the digital competence of students in a productive manner. The failure to do so creates a danger for students to develop their own self-regulatory strategies to combat boredom within their education. This can lead students to direct their engagement elsewhere, away from activities that lead to academic success. (Bergdahl, 2020)

Bledsoe argues that one of the best ways to keep students engaged in the learning is to use multimedia resources as a part of the instruction. This allows students to process information in a variety of modalities that can scaffold and anchor their learning. The switching between modalities of multimedia helps students re-engage in the learning, allows the instructor to differentiate instruction modes, and allows students to collaborate and provide feedback. (Bledsoe, 2013)

When the behavioral engagement of a student is lacking, one powerful support for students is the MTSS protocol, or Multi-Tiered System of Supports. The MTSS system is a data driven system that relies on partnership between students, families, teachers and school leadership to provide support for students to be able to succeed academically and socially in school. This uses data to not only assess issues or barriers, but to collaboratively solve problems and provide support that can be implemented to overcome issues or barriers. With the MTSS process, the team can set specific and targeted supports to meet the needs of students who are struggling engaging with school, and provides learning opportunities as students, families, and teachers are oftentimes adapting to new learning environments. Engaging in these

types of communication with students and families helps to maintain the attendance and participation of students in the learning process and will increase the level of success in online learners.

Cognitive Engagement

The third type of engagement is cognitive engagement. This refers to the engagement of the brain, and how students are thinking about what they are learning. Teachers can observe cognitive engagement when students exert the effort that is necessary to comprehend complex ideas, master demanding skills, or give up when they face challenges. (Bergdahl, 2020)

The challenge faced with cognitive engagement in any setting is ensuring that the work and the thinking happening with students leads to effective learning. To meet this goal, Czerkawski developed the E-Learning Engagement Design (ELED) as a procedural framework to apply instructional design models and incorporate best practices for student engagement in online learning to produce a learning model that can be utilized to use effective instruction to promote academic achievement of students.

The ELED framework (Appendix A) relies on data that suggests that the frequency of faculty-student interactions have a significant impact on student engagement, as well as data that community participation and peer interaction also have a significant impact on academic outcomes. ELED emphasizes a "balance between instructor-guided and self-guided learning while providing appropriate communication, instruction, and encouragement in the context of an environment of inquiry." Once the instructor has conducted the first two steps of assessing instructional needs and objectives, they can move on to creating the learning environments that meet the academic needs and objectives of their students. It is important that these environments are targeted, differentiated, and conducive to the needs of the students as assessed in the first two elements of ELED. From this "instructors are no longer only content experts but experienced learners and mentors who ask questions that lead to critical thinking

and deeper learning." This is evidence of the type of cognitive load that instructors can impart on their students. Pushing students towards critical thinking and deeper learning are some of the best ways to achieve academic success for students. (Czerkawski & Lyman, 2016)

Prestridge and Cox discovered that the cognitive engagement of students differed within a chat-based social learning environment. They separated the six different levels into two groups of lower cognitive complexity and higher cognitive complexity. The lower cognitive complexity levels were associated with the behaviors of liking or agreeing to the posts of others or completing assigned tasks. The higher level complexity of cognitive tasks were those that engaged students in extending and co-creating knowledge. The second set, of higher levels of complexity, were more community oriented and actively worked to extend each other's thinking over time. An interesting finding of their research focused on the determining factors of the ability of students to reach higher cognitive levels. They found that online learning capabilities weren't the determining factor, but were instead related to the choice of students to engage, as long as course design allowed for relational student spaces. (Prestridge & Cox, 2021) This exemplifies the idea that for students, it is more beneficial for their own academic success if they choose to engage in higher level discussions. This will stretch the cognition of their thinking and deepen the level of their understanding.

Social Engagement

The final form of engagement to be reviewed is social engagement. This is the social, collaborative, and interactive aspect of academic engagement. This type of engagement can be seen when students enjoy, participate, and interact with their peers, the lack of engagement can be observed when students withdraw from peers or express that they don't feel noticed or included by their peers. (Bergdahl, 2020)

At the middle school level, it seems that synchronous education has a significant impact on the overall learning of students. A study in central Virginia showed that students face-to-face

had fewer misconceptions than students who learned via online platforms. The explanation for the causality of this was the inability for the online students to collaborate with other students. (Prettyman & Saas, 2020) The collaboration of students allows them to share ideas in a safe environment, get feedback from their peers, and solidify understanding in a way that builds upon the shared learning of others. Middle schoolers seek approval from peers and adults in all areas, thus, even in the realm of learning, that approval helps middle school students as they learn. Studies like this provide a glimpse into the importance of creating a similar type of experience for students to collaborate with their peers in a way that allows them to build on shared learning and share their independent learning with others.

Historically, in online learning, discussion based forums have tended to have been largely split between students who found them engaging and students who found them disengaging. Buelow discovered that approximately 25% of students surveyed referred to online discussions as disengaging, while approximately 33% of students found the discussions engaging. He found that the type of discussion was a good predictor of how engaged students would be in the discussion. The discussions that had the most success in engaging students with each other were those that were based on application rather than fact, challenged the thinking and perspectives of the students, and built authentic connections between students. (Buelow, 2018)

When instructors are able to create a sense of connection between students, it contributes to their perceived social presence, and can solidify connections between themselves and the learning. The will for students to share their opinion and make their voice heard is a strong urge that can be utilized to build connections between students, but it is important that students are able to share opinions, or differences of opinions, in an appropriate and respectful manner. The ability for students to respond to thought provoking questions allows them to share their own thinking and opinions as well as hearing the voices and perspectives of their fellow classmates. (Buelow, 2018)

Providing opportunities for students to participate in deeper discussions is a great way to extend the learning and differentiate for students. Discussion prompts provided by the instructor that allow students to connect with topics, find value in them, and apply them to the real world are great tools for students to engage in deeper learning. Oftentimes, these are ungraded, and as a result, not all students will participate in the discussion. (Buelow, 2018) Even when with fewer students contributing to these discussions, other students who may not have contributed tend to access, read, and learn through the thinking of their peers. This collaborative learning and discussion can push students to further their own learning, but also allows peers who choose not to participate the opportunity to understand and learn through the deeper learning of their peers.

Bergdahl discovered that "the higher the student's grade, the more likely they were to be upset or frustrated when engaging in collaborative TEL (technology enhanced learning)." This can be explained by higher performing students expecting their peers to be more self-sufficient, where instead, they find it unfair that struggling students are allowed to complete tasks through the support and achievement of others. This can often lead to frustration within both average and high performing students. (Bergdahl, 2020) With this in mind, it is important to help students remain grounded in how their own contributions will be beneficial. Even when these contributions are not equal, that does not disqualify the educational gains that any student will gather from their own individual educational effort.

Chapter III: Application of the Research

This research allows the educator to come to conclusions that will be of great benefit to students and teachers alike. As a teacher, it is important that you engage students in as many modalities as possible in order to increase the academic achievement of each student. In the role of the educator, it is your responsibility to leverage the social, emotional, behavioral, and cognitive engagement strategies in the instruction of your students. My goal in the application of the research on engagement of online students is two-fold. First, I want to provide teachers with a set of tools that they can use to help students engage in ways that will help them succeed. This could be presented to school staff as professional development, be shared with instructors as they begin online teaching or as a resource that can help educators expand their current practice. The second application of my findings is to provide a framework of practices for students and their parents that can be shared or taught at the outset of instructional periods so that they can be proactive in building habits that will help students be more successful in their academic goals.

Best Practices for Engaging Students in Online Teaching

Firstly, for teachers, there is no prescribed set of strategies that will simply work. As in any educational setting, the teacher needs to assess the needs of their students and provide the tools, supports, and strategies that will help those particular students succeed. The primary purpose at hand is to use the research and data to provide frames for reference and strategies that can be implemented to increase levels of academic achievement for students. These can be implemented individually, across Professional Learning Communities, or brought to professional development so that entire staffs have additional ideas for use in their classroom.

For behavioral engagement, it is important that teachers are able to help students participate in the activities that are going to lead to student success. In online learning this can be more difficult than in other methods of learning. In the case of online learning, the student is

not in front of the teacher. Students are in their own environment, and there is no one on one environment that a teacher can assist the behavioral engagement of students. So, how can instructors actually maintain the behavioral engagement of students? Here are a few strategies for instructors to use in class, some will be proactive and some will be reactive.

Some initial components that can help instructors are thinking proactively about how to keep students on task. Similarly to teaching in person, one of the greatest deterrents to students disengaging behaviorally is keeping them busy and entertained throughout the learning process. This is a challenge in the classroom, and is just as difficult, if not more difficult, when students are learning at home. Phones, games, YouTube videos, and social media can all be distractions for students that they have easy access to, and teachers are very limited in how they are able to monitor these types of behaviors in students. One way to combat this, is to use types of device monitoring programs like Securely so that teachers can see what students have on their screen. While these programs are very helpful, even they are limited in monitoring the behaviors of students. The other avenue to maintain behavioral engagement is to keep students as active and engaged in learning as possible throughout the lesson and by providing them with the negative effects of these behaviors.

"Teacher time", or when teachers are providing instruction, materials, or directions are often times when students tend to check out and look for things that are more exciting. As a result, it is important to keep them involved in those processes. Checking in with students, asking them questions, and having them share are ways to keep students plugged into instruction. Pear Deck is a student engagement tool that teachers can use to gather instant feedback, hear student voices, and allow students to actively participate in instructional lessons. These can be monitored, assessed, and shared with class instantaneously so that students can immediately share their thinking with peers as well as see the thinking, creativity, and production of their classmates.

Using the practices of goal setting and reflection are two things educators can do to keep them connected to the purpose for learning, what they want to accomplish, and track their progress towards their goals. Reflection must be authentic in how it is applied by students, and they must see that it is providing utility to their learning. At the outset of learning, it is helpful for students to not only set goals for their desired outcomes, but to be thinking of what they will do in order to achieve what they want to achieve. This can then be tracked through student reflection throughout the semester. This will keep the student grounded in not only what they want to achieve, but also in how they have been successful or unsuccessful in meeting their goals.

One strategy in online learning that has been found to increase student "buy-in" is the use of choice boards. Choice boards offer students a "menu" of options that they can select from during times of independent or collaborative work. You can use these choice boards to offer a variety of topics, differentiation of tasks, or even differentiation of challenge levels. When students have the ability to select their work based on interest, difficulty, or type of task, they tend to have more buy-in than when they are assigned a specific task that may or may not be of interest to them or challenge them.

Another way to increase the emotional engagement of students is to ensure that the educational tasks are relevant to the desired student outcomes, have real world applications, and include aspects of student opinion when applicable. These criteria apply to some of the greatest motivations for students. First, they hold value both presently and in the future. When tasks are known to matter now and can be applied in the future, students see the relevance of the learning. Second, by tapping into the opinions of students, educational tasks allow students to share personal experiences and discuss beliefs and ideas that they are passionate about.

Social engagement is one of the more difficult problems to solve in this new world of online learning. When students are unable to sit next to each other, share ideas, and work together, how can they engage in collaborative learning? One of the most important things for

middle school learners is to simply allow them to connect to their peers, both in academic and purely social ways. While some may initially believe that social connection between students that lacks an academic goal is a waste of instructional time, that idea could not be further from the truth.

Middle schoolers are social beings, and are constantly looking to discover who they are within the larger social construct. When instructors allow students to connect with each other, students have the opportunity to become comfortable and familiar with communicating with their classmates in a way that can be translated into the academic setting. Because the natural environments like recess, the lunchroom, or passing time aren't available to students, these connection times need to be reproduced, and it is worth sacrificing class time to make this a reality. Starting a class where each student shares something about themselves, their interests, or activities is one way that students can get to know each other. Other ways to accomplish this are to give students unstructured time together in break out rooms or to provide "hang out" times during out of class hours. These times of personal connection between students, peers, and teachers can increase the comfort level between students in ways that can be translated to have impacts in academic realms as well.

The benefits of social connections does not stop at just building relationships for students, though that is highly important and impactful. Within the educational setting, collaborative learning can be utilized to help students solidify their own thinking through sharing, expanding their thinking through listening to peers, and creating new ideas and connections through collaborative work. While this has previously been incredibly challenging, technological advancements have made this far more possible and applicable than the previous efforts of chat based discussions between students. Through the use of screen-sharing, document sharing, and video conferencing, the options are nearly limitless for how students can engage in collaborative learning together. Using Zoom or Google Meet, educators are able to group students and split them into "breakout rooms" where they can meet as a small group, screen

share, and work on learning tasks as a team. They could be working on their own individual assignments, while sharing ideas, or they could be creating a shared document that they will complete and present as a product for their group.

When sending students to breakout rooms to work collaboratively as a team, it is important that each student has a role or responsibility that they are taking for that group. Without the sense of personal responsibility for the group, it can be tempting for students to sit back while their group mates do all of the work for them. Here are some common roles for online grouping, which can be adapted to the task that students are working on: scribe/recorder, reporter/spokesperson, time keeper, project manager, quality control, questioner, and designer. These types of strategies can be used to allow classes to jigsaw large pieces of information, where the final pieces are compiled onto a common presentation or JAMBOARD which can then be shared with the class as a resource to go back to.

When facilitating discussion and engagement between students, if the focus of the task is one which is relevant, purposeful, and meaningful for students, it will help to increase the depth of discussion and impact for students. The reason for this is that students will be more engaged with one another, and will be more likely to go beyond a surface level discussion to one which is deeper and encourages students to think critically as they build on or respond to the thoughts of their peers.

Steps for Student Success in Online Learning

As students are entering into online learning, it would be highly beneficial for them to have an understanding of what they may experience throughout the course of the class. It would also be to the benefit of the student as well as the student's parent's to have an idea of the habits that they can build in order to increase the likelihood of success in what may be a new type of learning experience for them. These are some of the habits that students can build in order to find greater academic achievement in their online learning.

Be Purposeful - As a student, it is important that you keep in mind what you want to get out of the time that you spend learning. How will it benefit you? How can you get the most out of your time? What are the daily habits that you can build to meet your long term goals?

Avoid Distractions - One of the greatest supports you can offer yourself as a student is to separate yourself from the things that will distract you from learning. The greatest of these are digital distractions, things like gaming, YouTube, Netflix, and social media. The more you are able to avoid the things that distract you during times of learning, the more likely you will be to succeed in your academic goals.

Create Connections - As a student, it is beneficial to be creating connections with the people who are going through similar experiences as you. To start, this may feel uncomfortable or awkward, but if you are able to push through that discomfort and build connections with your classmates, it will accomplish two things. First, you will have stronger relationships with peers with whom you will have mutual support in learning. Secondly, as you get to know and grow closer to your classmates, the learning becomes both more enjoyable and of higher quality. Use these connections that are available to you to your benefit, and offer what you are able to benefit your peers.

Take Ownership - The most powerful thing about learning is that you have the ability to choose the level of your own success. By the choices you make, the habits you build, and the effort you put in each day, you have the power to control the level of success that you will achieve throughout your learning experiences.

These 4 steps should be shared with students and parents prior to online learning, so that they have the opportunity to lean into the habits and ideas that can help with student success. Appendix B provides a handout that would be useful to provide for students and parents during these conversations. Appendix B also provides a guide for either self-reflection of the students or a conversational guide that teachers can have with students and parents during conferences, progress monitoring, or regular check-ins.

Chapter IV: Discussion and Conclusion

Summary

Because of the COVID-19 pandemic, educators and students were forced into a wide-scale implementation of online learning. This method of education was previously used in limited circumstances but would quickly expand as classrooms across the world were shuttered. Using previous data and research, as well as discoveries made after the onset of COVID-19, it was found that as educators are able to increase the levels of engagement of their students the levels of success and achievement are also increased. (Saritepeci, 2015)

Researchers and educators both discovered that engagement can be leveraged to improve student outcomes in online learning environments through the implementation and focus on four main areas of engagement. Behavioral engagement of students can be improved by supporting the effective use of technology of students and by avoiding distractions like social media, games, or streaming platforms. (Bergdahl, 2020) The cognitive engagement of students can be expanded through an intentional educational framework and curriculum that pushes students to deepen their thinking. The ELED Framework helps accomplish this through a balanced approach between instructor-guided and student-guided learning where communication, encouragement, and instruction is appropriately provided. (Czerkawski & Lyman, 2016)

By considering and building emotional engagement, educators can convince students to "buy-in" to the learning that is at hand. One of the ways educators can do this is through a practical use of goal setting and reflection of learning. (Wang) Another is by adapting the types of work produced or the content that is produced. This can be through the inclusion of student opinion, or by providing student choice in the production of work. This choice can be based on skill level, where students are able to self-select the difficulty of their work, or by choosing their preferred method of production, where students can choose how they want to present the evidence of their learning. (Buelow, 2018)

Social engagement can be built through instruction so that students can share learning, build connections, and discuss perspectives of their content. The use of practical discussion or sharing of learning helps students to solidify their learning and builds connections between students and the learning in a way that helps students succeed. (Buelow, 2018) Providing opportunities for shared learning and collaborative creation allows students to extend their thinking and learn from one another in the different ways that they understand content. (Bergdahl, 2020)

What methods can be implemented to improve engagement in online learning?

Educators have the ability, through training and communication with students and parents, to increase the engagement of students as they participate in learning. Some of these will take place prior to learning, as teachers and administrators communicate behavioral and social expectations for engagement that will lead to success with the students and parents. Other implementations will take place in the design of curriculum and lesson planning. Social and cognitive engagements need to be well thought out, practical, and applicable for students so that they are beneficial. Lastly, some of the implementation of engagement may be reactive, in order to address barriers that students are facing and provide the support to overcome those barriers, through systems or procedures similar to MTSS.

Professional Application

The findings of this research will be beneficial as online learning continues to be used going forward. As online learning continues to expand, this can be used to formulate and identify types of strategies as best practices that will lead to higher levels of academic success and social-emotional health for students, as well as higher levels of professional success for educators. Looking ahead, educational systems can begin to refine the practices that are most beneficial for online students.

At the state and district level, this research can be used to build resources and training that can be included in their online curriculum for their expanding online learning platforms. Specifically, districts can implement this research by using the findings into their professional development of teachers. The greatest use for districts is for instructional coaches to use the findings to help online teachers who are new, struggling, or looking to expand the skills they have. This can help create a culture of meeting students where they are, and overcoming the challenges of creating a cohesive curriculum that engages students cognitively, behaviorally, emotionally, and socially.

The impact that this research can have on individual educators is massive. As we strive to become better at our craft and fine-tune the practices we have, this can be used as a driver in that process. This would be incredibly beneficial for new teachers or teachers who are transitioning into online teaching so that they can start and transition better. Implementing these findings will help any teacher move towards their goal of increasing the success levels of their students. Teachers can use them to be more prepared for the particular challenges that they may face as online instructors.

The findings of this research could also be used by students. It would be advisable for school administration and teachers to be using this to share with students their responsibility in online learning and the habits that will lead to greater successes. Students can use the research to increase academic performance, sense of enjoyment, and social satisfaction. By building the behavioral habits that lead to success, students will be better learners. When students engage with their peers in respectful, academic discussion they are able to both stretch their thinking and build positive peer relationships.

The benefits of the implementation of this research is wide ranging. It will be beneficial from the state and district level, including administration, to be mindful of this research when training their teachers. It will also be beneficial to implement this research at the classroom level by instructional leaders, teachers, and students.

Limitations of the Research

This research is limited in a couple of aspects. First, the large-scale adoption of online learning is still relatively new. The data that has been collected is primarily from a smaller window of outcomes. While the data provides insight into the effects of engagement, it would be beneficial to see data over a longer period of time.

The second limitation of research was the amount of research that was found specifically on middle and high school students. There was wide-ranging research on post-secondary students who were participating in online learning, but a relatively small amount of research on students prior to post-secondary education. The differences in self-regulation between students who are not as mature as post-secondary students may strike different sets of findings and lead to differences in how educators build engagement into their classes.

Implications for Future Research

The limitations of the study lead to the future research that would be beneficial for education. First, continuing to identify data-backed strategies that lead to increased student success would be great. As studies are able to gather more data, we can get a more solid foundation of evidence as to what creates higher levels of engagement of students. For the first few years of widespread online learning, it seemed that much of the work was to replicate the type of engagement a student might experience in a face-to-face classroom. This type of methodology can be improved upon once online learning finds its footing. Engagement strategies that are specific to online learning will be discovered and have even greater impact than those strategies that are replicated or adapted from the typical classroom.

Further research into the academic engagement of younger students would be highly impactful. Middle and high school online learning is rapidly expanding, and the need for research in these particular grade levels is needed. While there is much research on the online engagement of post-secondary education, the self-regulation and accountability of students in

middle and high school is not developed to the level of post-secondary students. Research that specifically focuses on the success levels of these strategies on secondary students will be highly anticipated. Additionally, research to discover ways to increase the engagement of middle and high school students will drive this topic further.

Within the context of cognitive engagement, the research seemed to focus on how to build in higher level thinking opportunities for students. One particular piece that was missing and could be discovered is how to assess the thinking of students and be able to push students to the next level of cognition. In the classroom, this is often done during work time as teachers check in on the work of students and can ask questions and prompt them to think more deeply. This is very difficult to do in an authentic way online and could be a good topic for future research.

Conclusion

How can engagement be leveraged to improve student outcomes in online learning environments? By employing the use of social, emotional, cognitive, and behavioral engagements in online learning, educators can increase the academic achievement, social connections, and student satisfaction within the learning experience.

What methods can be implemented to improve engagement in online learning? Districts, administrators, teachers, and students can create and participate in specific structures, course design, and learning activities that can promote increased levels of behavior, cognitive, social, and emotional engagements.

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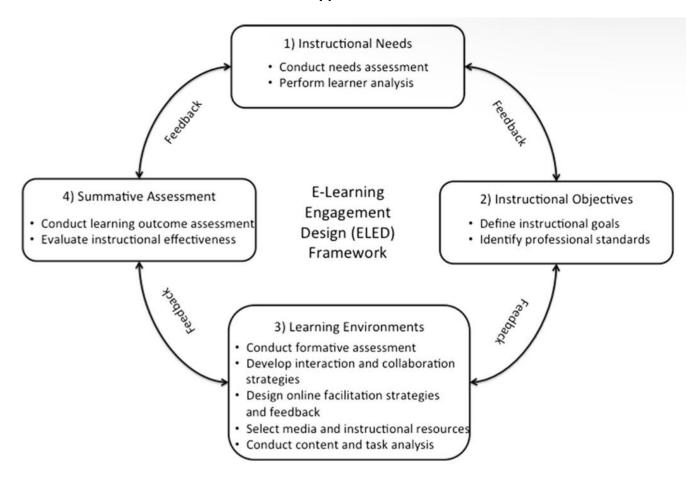
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Appendix A



Appendix B



A Guide for Students and Parents by Nathan Jacobson

Have Purpose

Keep in mind what you want to get out of your learning. How will learning benefit you? How can you get the most out of your time?

Avoid Distractions

In order to succeed, you need to be able to avoid things that distract from learning. Avoid things like gaming, videos, and social media while learning.

Connect With Others

Create connections with your classmates. Build relationships to make learning more enjoyable, successful, and meaningful.

Take Ownership

You have the power to choose your own level of academic success. The choices you make will build habits you need to be successful.

Nathan Jacobson, 2022

ENGAGEMENT IN LEARNING

A Guide for Students and Parents

Emotional Engagement

The level of a student's "buy-in" to the learning. What are your feelings toward the learning? What are the goals you have and how can you reach those goals?

Behavioral Engagement

Doing the things that lead to learning. Are you participating in learning? What are the things you get distracted by? What actions benefit your learning?

Social Engagement

The way you practice, share, and create learning with your peers. How do you participate in discussions with peers? What does your collaborative work look like?

Cognitive Engagement

The practice of being challenged by your learning. Do you feel like work is too easy or too difficult? How well do you persevere when the work is hard?

Nathan Jacobson, 2022