

Severe Cognitive Disabilities in Online Learning: Creating Effective Engagement in a Remote Setting

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ABSTRACT

The present study analyzes different strategies employed during remote learning for high school students with Severe Cognitive Disabilities (SCDs), in order to determine which are most effective for engagement. Utilizing methods from previous research (Kurth 2015, Kurth 2016), individual student observations were completed throughout online learning class sessions. Data revealed that giving the student the chance to demonstrate their knowledge, providing choices, working with peers, and having a self-chosen goal to work toward were some of the most important factors for increased engagement. Furthermore, distracted teachers and paraeducators hindered the engagement. Consequently, the present study displays suggestions for increased engagement during online learning for this population. Given the limitations of the present study, additional research should also be completed to expand on these results.

Literature Review

The study of how to create an environment conducive to the best learning for students with Severe Cognitive Disabilities (SCDs) is constantly evolving. While self-contained/segregated classrooms used to be the standard, where special education students were only surrounded by other special needs students, now more than ever, teachers and parents alike are pushing for inclusive education, where their student has access to the common core curriculum and is surrounded by neurotypical peers. According to a peer-reviewed study by Kurth (2016), in self-contained settings, students were engaged in passive activities led by paraprofessionals, using curriculum that was not individualized to the students, in loud or busy classroom settings. Because of the ineffectiveness of self-contained classrooms, inclusive education has been on the forefront of special education literature for several years. Downing (2007) explains that the concept of inclusive education for students with moderate-severe disabilities consists of access to the core curriculum along with any modifications or supports such as assistive technology or paraeducators. However, Downing has committed to moving past the concept of inclusive versus self-contained education with her study surrounding what makes a good education for students with moderate/severe disabilities, assuming inclusive education is already a given. Through this research, Downing found that one of the most important factors for the success of students with severe/moderate disabilities is not only making sure they have access to the core curriculum but knowing how to modify the curriculum to better serve the learning pathway of each individual. Concluding the article, she recommends that standards are set in place to determine what students at varying levels of cognitive capability are expected to learn relative to the core curriculum; however there have been many challenges surrounding this request as special education is different for each child, making it difficult to standardize or categorize. While the research includes students with moderate and severe disabilities, most of the recommendations center around students with moderate disabilities, leaving those with severe disabilities fewer options in the common core curriculum.

A similar peer-reviewed study, by Courtade (2014), emphasizes the importance of Evidence-Based Practices (EBPs) for students with SCDs. Some of these practices, as identified by the National Professional Development Center on Autism Spectrum Disorders, include modeling, prompting, reinforcement, scripting, and much more. Bringing these, and other, EBPs into the learning plan for students with SCDs has been proven to help engage students and

has been effective in teaching functional life skills such as grocery shopping, laundry, goal attainment, and home maintenance. Bouck (2012) writes on the balance of life-skills based teaching methods, finding that the majority of students with SCDs received a practical skills curriculum as well as instruction in core content areas. Despite this balanced curriculum, Bouck also discovered the students experienced low engagement in any post-school outcome, such as independent living, employment, and post-secondary school. Bouck proves that, although the students are learning life skills, they are being taught them minimally, and a larger focus should be placed on life skills in the teaching of students with SCDs. With the combination of the proven effectiveness of EBPs on life-skill learning, and the clear importance of increasing life-skill education, it is evident that a shift in curriculum may be critical to create an effective learning environment. Connecting to Downing (2007), both studies also mention modifying student curriculum. However, the current learning environment in 2020-2021 presents an unprecedented challenge.

The sudden onset of the COVID-19 pandemic has thrust underprepared teachers and students into an experimental yet necessary platform of online learning. As many teachers and students struggle to adapt to the new reality, students who require the most support are too often overlooked: those with SCDs. Being taken away from their peers, para-educators, occupational/physical therapists, etc. creates a challenging environment for these students, and one they have certainly never experienced before. In a peer-reviewed study, Smith (2014) takes a more positive perspective on online learning, explaining how its personalized nature can provide advantages to students with disabilities. Smith cites individual learning plans, as showing promise to align with online instruction. Each public-school child receiving special education services is federally required by the government to have an Individualized Education Program (IEP), where the caretakers set goals and work with the school to create a plan unique to their child. This plan is updated annually in a collaboration between guardians and school representatives. It is easy to think that these individualized programs would lend themselves to online learning quite well, but this is often not the case: teaching students according to their IEP is not plausible if the available online resources are not accessible (Siegel, 2020). Smith (2014) details a tool used to gauge the accessibility of online resources: the UDL Scan Tool. This tool helps teachers know whether the resources they are sending their students are accessible, to make sure all students in their classes have the opportunity to succeed. Similarly, Crow (2008) details certain steps to make websites accessible for students with visual, auditory, motor, and cognitive impairments in his study. He suggests that in order to appeal to all audiences, developers should use a clear webpage design and ensure captions and audio descriptions occur in all media. While this research is beneficial for students dealing with mild disabilities, Crow points out the lack of supports for students with SCDs, concluding that many developers do not even attempt to create accessibility for students with cognitive impairments, because they do not view these students as their target audience. He adds that many designers believe that incorporating this accessibility may present an “undue burden” (Crow, 2008). This makes it clear that current information regarding disabilities in online learning only focuses on mild/moderate disabilities and not those with SCDs. According to a peer-reviewed study completed by Hashey and Stahl (2014), the benefits of online learning can only be brought to students who can effectively participate. They had investigated the method and success of full-time virtual schools serving students with disabilities and found that most full-time online learning environments do not have the resources or capacity to adequately accommodate students with SCDs. Although this may be true, faced with the current circumstances in the rise of a global pandemic, providing accessibility to these students is no longer optional; it is now a necessity. A study finding student engagement data, similar to Kurth (2015, 2016)’s findings, to evaluate the effectiveness of different online learning strategies, as mentioned in Hashey and Stahl (2014)’s work for students with SCDs could present a solution to this important problem.

Methods

To explore this issue, I chose to use a classroom observation model to observe high-school student engagement in different activities during a typical remote learning class session. Three students were selected to be individually observed over the course of four sessions each.

An observation was chosen to conduct this research because it gave the best, unbiased view of what happens during a typical class. Additionally, since many of the students in the population would not be able to independently take a survey, and parents may not be able to recognize the exact effectiveness of each activity, it allowed for more accurate data to be collected. An observation also provided the best way to truly see what activities engage the student, not relying on self-reported (or teacher/parent reported) data. In order to select the students to follow throughout this observation period, special education teachers at LWHS were asked to rate the level of support necessary for each student based on the scale defined in a peer-reviewed study about disabled students' access to general curriculum completed by Soukup (2007). Soukup's study justified this practice by comparing their new scale to a Likert-type scale. This scale had the teacher provide support level ratings of the student in two situations: overall functioning and learning new knowledge/skills. In both situations, the student was assessed on a scale of 1-5 with 1 being "No Support" and 5 being "Full Physical Assistance". Any students who received a ranking of 3 ("Gestures or Modeling Prompts") or above in both sections were designated as eligible for this study. This created the present study's definition of "severe cognitive disabilities". No specific diagnoses of the students were collected as the purpose of the study was to analyze students with all types of SCDs. The full scale and specific definitions of each rating can be seen in Appendix 2. The choice to complete the study at LWHS was chosen as it provides a picture of an average high school classroom, as LWHS is a public high school located in a relatively large suburb. Additionally, this school has a mid-size population of 1,705 students ("LWHS"). Within the population of students in the online program at LWHS, three students met these criteria.

The observations were completed using a structured individual student observation template utilizing certain codes to note students' behaviors. The design of this form was based on a peer-reviewed study done by Kurth (2016) on the ecobehavioral characteristics of self-contained high school classrooms for students with SCDs. The beginning of this form includes space for student information and the previously defined student support level. The general support level range (3 or higher) of all students was released as it provided crucial context for the data; however, all identifiers were removed. The observation outline used in Kurth (2015)'s study contained a section centered around student engagement. Since engagement was the main focus of this observation, Kurth (2015)'s observational codes were heavily utilized with some slight modification to provide more in-depth information. Some of the codes used included DT (different types of engagement), AM (different strategies to access material), AD (appeared distracted), AF (appeared focused), GC (given a choice), etc. (Kurth, 2015). These codes were noted in a table including time, engagement code, activity the student was participating in, and a fourth column for further description if needed. A blank version of the observation template, including the code definitions and the observation table, is included in Appendix 1.

All eligible students were observed four times each over the course of five weeks in order to collect the most accurate data. With the intention of gathering data that best represents the overall student experience, observational data on the student was collected each minute of the class period. This was per Kurth (2015), where she used this method to allow for an in depth-qualitative analysis on the effectiveness of learning in both self-contained and integrated learning. Although I did not have two separate scenarios to observe, this method still set the grounds for in-depth analysis. In my study, this also ensured that behaviors are being reported equal to how often they occur and eliminated the bias that may come from potentially only noting observations when they "stand out". Using this approach provided the best overview of the experience and laid the grounds for a more efficient form of data synthesis later on. To ensure correct timing, each minute there was a signal on the "BeepWatch" smartphone app reminding me to note the codes the student most closely aligned with and any other observations if necessary. Any codes or observations occurred at the exact minute noted, not before or after (Kurth, 2015).

Another important note is the choice to focus on what the teachers defined as academic instruction instead of social-emotional learning (SEL) or vocational-community instruction. Although a shift to life-skills curriculum is supported by previous research, as stated in the Literature Review, the academic route was chosen because it most aligned with the research question and the overall purpose of the study (Courtade 2014, Bouck 2012). Focusing on all three topics may have presented too wide of a scope to gain accurate data. The choice to only focus on academic

instruction also helped eliminate the variable of time. The schedule of the students placed them in individual academic instruction time during their second, third, and fourth period, which took place at 9:00 am, 10:10 am, and 12:15 pm respectively. Observing students strictly in this second/third/fourth period academic setting allowed observation to occur around the same time each day, making sure that energy at the start of the day/fatigue at the end of the day would not become a factor in the results. Each class period was 50 minutes long, and all LWHS students attended class using Microsoft TEAMS.

In order to synthesize the data, all observations were categorized by the code applied to the behavior. The codes were categorized into positive and negative signs of engagement. A positive sign of engagement included codes such as AF (appeared focus) or DK (given the opportunity to demonstrate what they know) while a negative sign of engagement contained codes such as AD (appeared distracted) or MO (a missed opportunity for more engagement). After categorizing the codes, the correlation to the activity was taken into account. Since the activities were completed for different amounts of time, the values were expressed as a percentage of minutes the negative/positive factors occurred over the total time the activity took. The activities that had the highest percentage of “positive factors” were deemed the most effective for student engagement and the activities that were seen the most under the “negative factors” were proved the least effective. In this step, there may have been similar activities combined into one category/counted together if they were executed in the same manner and focused on the same skills. This was to eliminate any information that may have been lost or ignored if the activity description was too detailed or individualized. The original description was still available for subcategorizing in any given grouping to show more in-depth analysis of the final results if needed.

Results

The activities displayed throughout this section represent all strategies teachers and paraeducators implemented during the five weeks of observation. The different activities have been grouped into larger categories: discussion, expectations, lifestyle planning, occupational therapy work, and reward. The coded behaviors were sorted into “Positive factors” and “Negative factors” as seen below in Figure 1.

Positive Factors	AF= appeared focused
	DT= different types of learning
	LS= learning style
	DK= demonstrate knowledge
	AM= access materials
	GC= given a choice
Negative Factors	AD= appeared distracted
	MO= missed opportunity for engagement

Figure 1: Coding Map

See Appendix 1 for more in-depth descriptions of each code, showing when they were applied

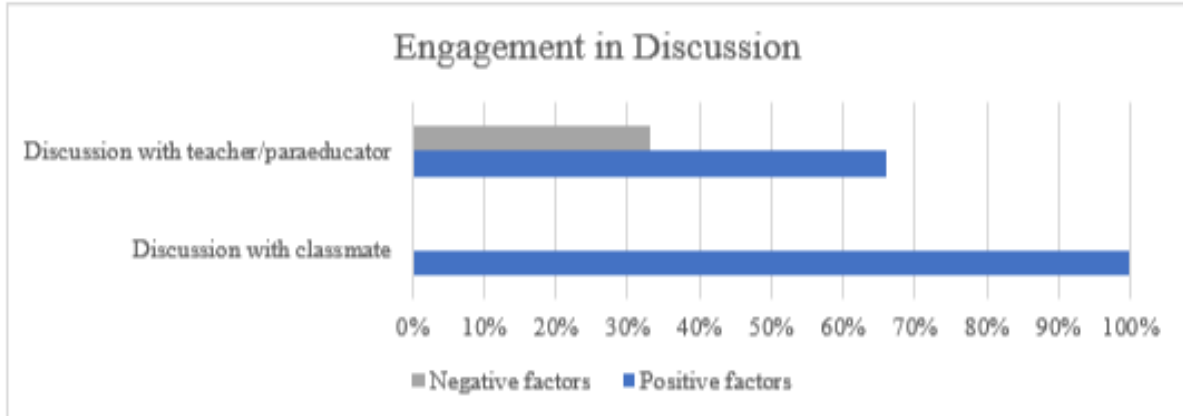


Figure 2: Engagement in Discussion

Discussion occurred whenever the student was having casual conversation on the Microsoft TEAMS call either before or during class. This category was separated into discussion with teacher/paraeducator (33% negative, 66% positive) or discussion with a classmate (0% negative, 100% positive).

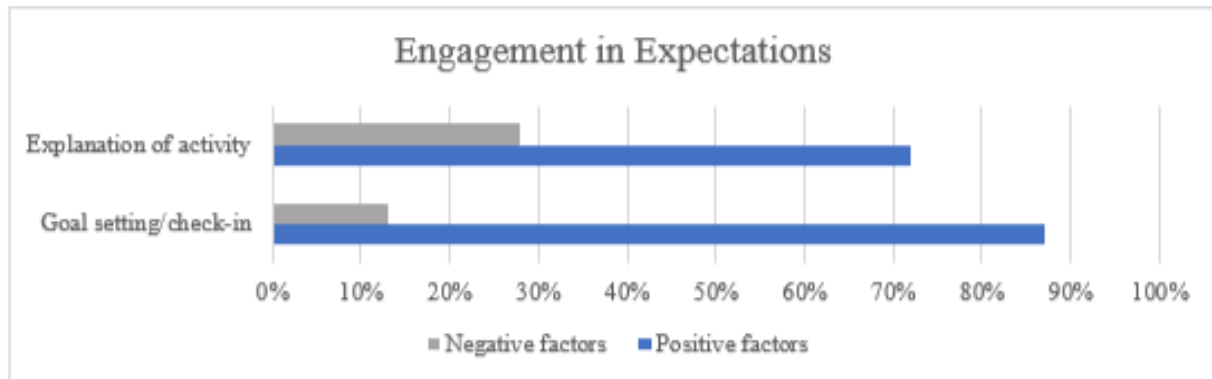


Figure 3: Engagement in Expectations

Expectations consisted of introducing the activity to the student (28% negative, 72% positive), and any goal setting or check-ins that may have occurred throughout instruction (13% negative, 87% positive). For example, one student implemented a “star chart” that required a certain number of stars earned to reach a reward, so often times the teacher and student would check in on the progress the student is making (or the “stars” they are earning) to move towards their chosen reward.

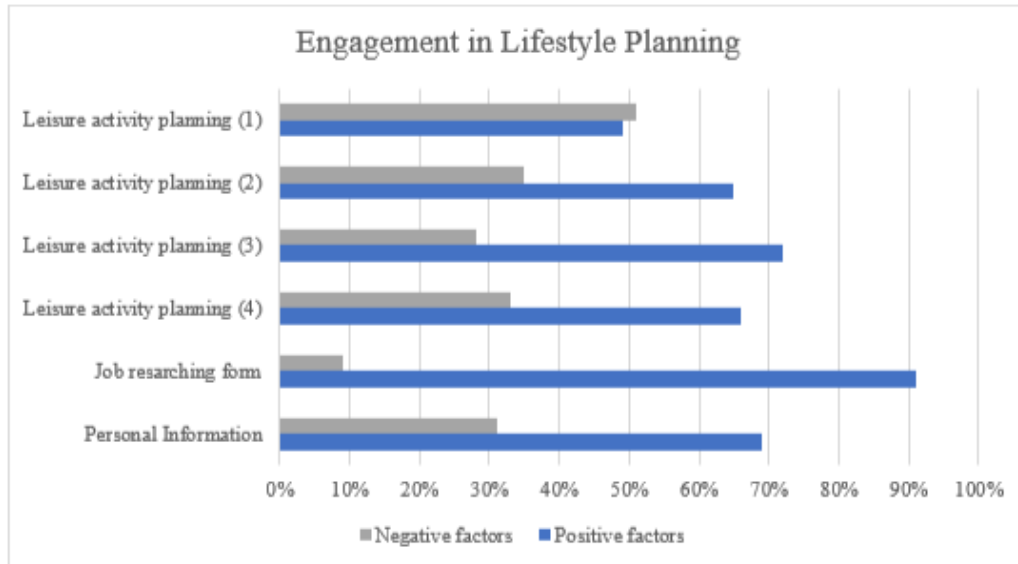


Figure 4: Engagement in Lifestyle Planning

Lifestyle planning consisted of work where the student was practicing life and planning skills. This consisted of a Microsoft form on “Leisure Activity Planning” (28%-51% negative, 49%-72% positive depending on which repetition), where the student would choose an event on Eventbrite.com and fill out information about the event such as cost, time, location, etc. The numbers in parenthesis indicate which repetition the student was on for that class period. For example, if the student was completing their first event there would be a “(1)” or if the student was completing their third event for that day there would be a “(3)”. Another activity in the Lifestyle planning category was a “Job Researching Form” (9% negative, 91% positive). In this case, the student would find a local job listing on indeed.com and then use the information on the website to fill out questions on another Microsoft form regarding company name, position, qualifications, etc. “Personal Information” (31% negative, 69% positive) was also included under this category. This consisted of a student using a speech aid on their iPad to spell out personal information such as their name, address, etc. while a paraeducator typed this information for them on the screen. The student progressed from copying the letters/numbers from the screen to spelling with memory.

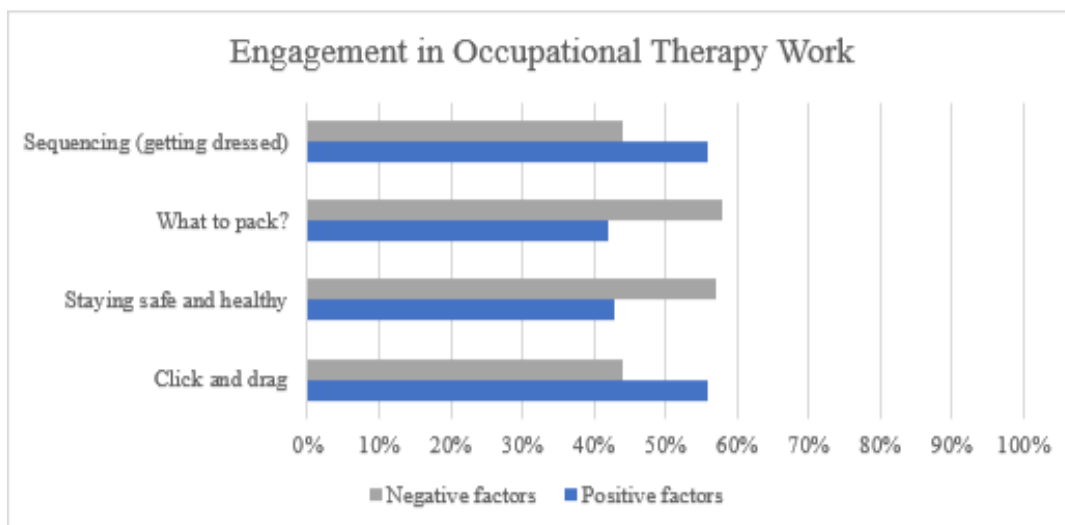


Figure 5: Engagement in Occupational Therapy Work

The next broad category listed was “Occupational Therapy Work”. This was when the student worked with an occupational therapist (OT) on tasks that an OT would usually cover, such as habits and functional skills. “Sequencing (getting dressed)” (44% negative, 56% positive) required the student to place the steps of getting dressed in order using images. “What to pack?” (58% negative, 42% positive) gave the student a prompt such as, “What would you pack when you go to the beach?” and the student would select images that match with the prompt (in this case they may have selected images of sunscreen, beach towels, etc.). “Staying safe and healthy” (57% negative, 43% positive) asked the student general questions about health and safety such as, “Which picture means you can walk at the crosswalk?”. Finally, “Click and Drag” (44% negative, 56% positive) was an activity that worked on teaching the student how to move an object around the screen by clicking and dragging it to different areas.

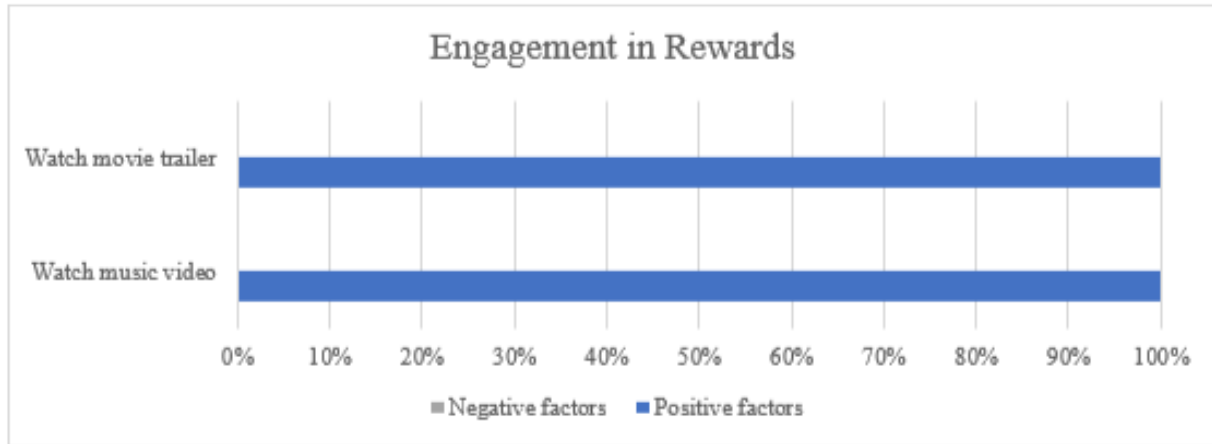


Figure 6: Engagement in Rewards

The final category that was observed was the “Reward” category when a student earned a reward they were working for. Some of the rewards the students engaged in were watching a movie trailer or listening to a favorite song (both categories consisted of 0% negative and 100% positive factors).

A full in-depth chart including percentage frequencies for each individual code and time spent on each activity can be found in Appendix 3.

Discussion and Analysis

Analyzing the results, it is clear that the different activities had an impact on student focus and engagement. This section will concentrate on analyzing each activity to the extent of its category and examining what factored into creating successful engagement.

Discussion

Beginning in the “Discussion” category, the students were engaged in more positive behaviors while speaking with their peers than with a teacher/paraeducator. This aligns with several other studies, including Kurth (2016), encouraging peer interaction for the many benefits it has on students. This discussion time before/after class was also the only time these students had to discuss with their classmates, as once class began the students observed were put into individual calls with only themselves and a paraeducator. While there are benefits to working individually with a paraeducator (i.e., individualized instruction), this data shows that peer interaction should not be overlooked, even in the remote environment.

Expectations

Moving into “Expectations”, as shown in *Figure 3*, the explanation of an activity kept the student engaged the majority (72%) of the time. These results show that it is important for student engagement to clearly illustrate and explain the plan and expectations for the class period. The use of goal setting/check-ins also proved effective in garnering engagement. Looking at the in-depth chart in Appendix 3, it is clear that this activity had a high frequency of the codes LS and GC, meaning that within these check-ins the students were often engaged in learning of their own style, and that they were regularly given choices. These choices included what reward the student would want to work for, bringing a more personalized motivation factor into the rest of the class period. Downing (2007) and Perry (2020) analyzed the factors parents viewed as important in the education of their students with SCDs, and the findings of the present study align with the parent reports that molding learning to individual learning styles and providing motivation for the student throughout an activity is of high importance. Looking at when these check-ins occurred throughout instruction, it can also be concluded that there is a correlation between reminding a student of their progress and regaining focus. For instance, one student experienced the following pattern during their instruction:

Table 1: Observed Check-In Interaction

Time	Engagement Code(s)	Activity	Other Notes
10:52 AM	GC, AD	sequencing	not participating, teacher giving student the option to receive help
10:53 AM	LS, AF	check in with star chart	reminded of previously chosen reward, looked at progress made in class so far
10:55 AM	LS, AF	sequencing	connected new learning to something student already knows

In this interaction, the student appears distracted (AD) during a sequencing activity and checks in with their star chart and is reminded of their work. Then, the student returns to sequencing, appearing focused (AF). Interactions such as these accounted for much of the positive factors seen in the “check-in” category.

Lifestyle Planning

The next categories are perhaps the most important data for future implications as they center around specific academic instruction and instructional activities. Investigating the “Lifestyle Planning” category, there is a large range of data depending on the activity the student completed. First analyzing Leisure Activity Planning, there were differing levels of engagement depending on which repetition the student was completing that day.

This data suggests that generally there is a benefit in repeating activities. This correlation was also found in a peer-reviewed study on music education, which came to the conclusion that repetition was the most important factor in teaching music to special needs students (Gerrity, 2013). Completing an activity for a second time can help the student learn more information, and it appears that as the student adjusts to the activity and learns the method to completing the task, their engagement actually increases. The data for this particular activity suggests that after the third repetition, engagement begins to decline; however further research should be completed to confirm or disprove these results, as this was the only activity observed that was able to present a repetition-based pattern.

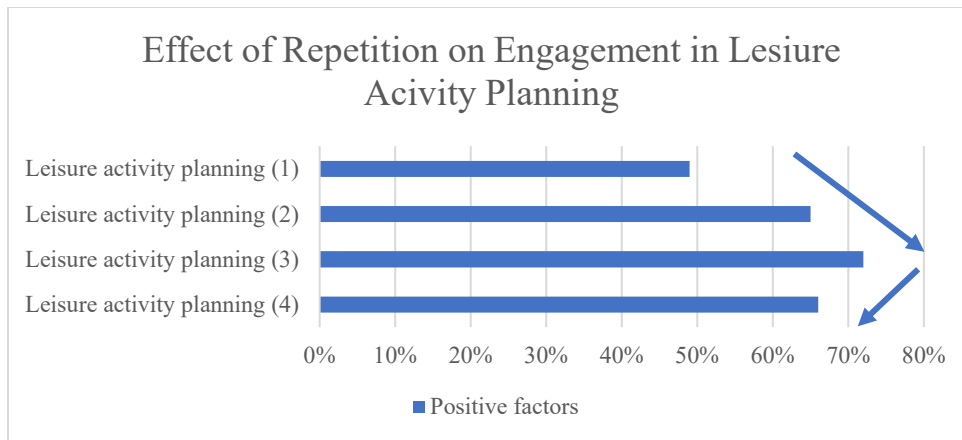


Figure 7: Effect of Repetition on Engagement in Leisure Activity Planning

The next activity within Lifestyle Planning was the Job Researching Form. This activity had the highest engagement level out of all other activities, with only 9% negative factors. Breaking down the chart in Appendix 3, the positive factors most frequently seen in the Job Researching Form were AF (appeared focus) and DK (demonstrate knowledge). It is difficult to attribute AF to a specific aspect of the activity; however, the relationship between a high level of DK and engagement should be noted. Downing (2007)’s results again bolster this conclusion, explaining the importance of pushing students to engage in difficult curriculum to see growth. Other research also reaches a similar conclusion in a study surrounding self-contained vs integrated classrooms for students with SCDs. Their results suggest that placing students in integrated classrooms is beneficial because it allows them to be challenged and show exactly what they can do (Kurth, 2016). The results from the present study corroborate this same conclusion, and show that a key factor to the success of the Job Researching Form is the high amount of opportunities for the student to demonstrate what they know in a variety of different ways (reading questions out loud, recalling information from the past, navigating websites with fluctuating levels of paraeducator support, etc.).

The final activity observed in Lifestyle Planning was “Personal Information”. Although the ratio was not as engaging as the Job Researching Form, the result still showed overall positive engagement. Similar to the Job Researching Form, another large component of this activity was the DK opportunities given to the student. Another potential reason for the overall positive engagement could be the DT (different types). “Personal Information” had the highest DT percentage of any activity, largely due to the changes in task as the student progressed and improved. This natural progression can be seen in the following excerpt from the observational notes:

Table 2: Observed Personal Information Interaction

Time	Engagement Code(s)	Activity	Other Notes
10:18 AM	AF, DK	personal information	spelling name (copying from screen)
10:19 AM	DT, AF, DK	personal information	multiple choice question instead of spelling, “what is your first name?”
10:20 AM	DT, AF, DK	personal information	spelling first name on their own without copying/prompting from teacher

Here, looking especially at the notes column, the DT as the student progresses is evident. At first, the student is shown their name on the screen, and copies it by pressing the corresponding letters on their iPad, which this student used as a speech aid. Next, the student progressed to identifying their name in a multiple-choice style question without copying it. Finally, the student was asked to type their name, using the letters on their iPad, from memory without

copying or a multiple-choice question. Interactions such as these throughout the whole of the “Personal Information” activity demonstrate the importance of DT in engaging learning.

Occupational Therapy Work

The first activity in the Occupational Work category was “Sequencing (getting dressed)” The proximity of the negative and positive factors here creates inconclusive evidence to the overall engagement of this activity. The same can be said of the activity “Click and Drag” which ended with the same percentages of negative and positive factors as “Sequencing (getting dressed)”.

However, “What to pack?” had slightly more conclusive results. This activity was one of the few where the negative factors (58%) outweighed the positive factors (42%). As seen in Appendix 3, this activity had the highest percentage of AD and also low percentages of several positive factors. It contained the lowest GC of all activities and contained low DK numbers as well. Gerrity studied music learning and students with special needs and found that one of the most important factors in their learning was student choice (Gerrity, 2013). Connecting to the present data, the lack of choices and lack of opportunity for students to show their knowledge could attribute to this overall low engagement.

Table 3: Observed “What to pack?” Interaction

Time	Engagement Code(s)	Activity	Other Notes
10:58 AM	AM, DK	what to pack?	Choosing pictures of items for “what should be packed” for specific scenarios
10:59 AM	AD	what to pack?	Not focused, choosing all pictures, not answering the questions

The excerpt from one of the observation sessions above demonstrates the lack of engagement that occurred throughout this activity. The student would often select all of the multiple-choice answers without giving thought into which actually was correct, and little learning seemed to occur.

The last OT activity was “Staying Safe and Healthy”, which had a similar ratio to “What to pack?”. The results of this activity display more negative than positive factors, again calling into question what resulted in this high level of negative engagement. Looking again to Appendix 3, this activity has a far higher rate of MO (missed opportunities for engagement) than any other activity. About 57% of the time spent on this activity involved MO while, for reference, the next highest amount of MO was only 8.3%. Consider the following:

Table 4: Observed “Staying Safe and Healthy” Interaction

Time	Engagement Code(s)	Activity	Other Notes
11:03 AM	AF, MO	Staying safe and healthy	student seems to be picking answers at random until it is correct, teacher is not taking the opportunity to slow down and explain every answer
11:04 AM	AF, MO	Staying safe and healthy	see above

Here, the MO stems largely from the paraeducator. The student would pick random answers until getting the correct one, and the paraeducator did not take the time to slow down and go over the question. This process continued for several minutes, and often the majority of the activity, shedding light on the importance of engaged instruction for

engaged learning. As a part of her study, Kurth (2016) observed a live in-person classroom and also found that the engagement of paraprofessionals was an imperative element of the engagement of the students.

Rewards

Finally, there is the “Rewards” section, which consisted of all positive and no negative engagement. Although these numbers support an engaging environment, there is no learning being done while the students engage in rewards. The prospect of using rewards as motivation is promising, as seen in the “Expectations” section; however, any content from rewards in the context of the aim of this paper becomes unnecessary. Rewards, although engaging, do not facilitate learning.

Conclusion

While conclusions can be drawn from this research, it is first important to consider that the present study contains several limitations. At the time the observations were completed, many students with the target student support level were attending hybrid in-person learning, reducing the number of eligible students to observe to only three. The studies the observation model was based off originally researched sample sizes of 18 and 19 (Kurth 2015, Kurth 2016). Special education students’ needs are diverse, and the reduced number of students in this study may not be a complete representation of the whole community. This study also focused on what the teachers defined as “academic instruction”, and not SEL or vocational community instruction.

Consequently, in order to gain a further understanding of this topic, the study could be replicated or altered to be completed on a larger scale with more students and a wider range of activities. Additionally, research could be completed on engagement surrounding SEL and vocational instruction. This research could be particularly beneficial moving forward as the special education research conversation is shifting towards focusing on life-skills oriented instruction to better support post-school outcomes for students with SCDs (Courtade 2014, Bouck 2012). However, the results found still provide great insight into the goal of this research.

This study aimed to identify which factors create the most engagement in online learning for high school students with SCDs. Through the research conducted, it can be concluded that there are several considerations that can factor in to making an activity engaging for a student, and conversely, there are some adverse factors that hinder engagement. From the discussion category, it is clear that the opportunity to interact with peers aids engagement. Expectations showed that setting and working towards goals with a student-chosen reward is helpful to maintain focus and serve as motivation. The results in “Lifestyle Planning” suggest that giving the student opportunities to demonstrate their knowledge may be the most important factor in engagement, and also suggests that different types of instruction can also be beneficial. This section also gives more supporting evidence to the claim that repetition can foster improvement (Gerrity, 2013). In Occupational Therapy instruction, the influence of student choice is identified as another factor that can increase engagement. The importance of engagement in the case of the instructor is also exposed in this category, aligning with parent opinion of the importance of an enthusiastic and caring educator (Perry 2020, Downing 2007). The findings from this study conclude that demonstrating knowledge, working towards specific and continuously challenging goals, giving opportunities for student choice, and interacting with peers work most effectively to create an engaging environment for students with SCDs during online learning, while unfocused paraeducators and teachers can hamper this engagement. This clearly mirrors results in in-person learning trials, showing that remote learning may not have as much of an impact on student engagement as some may have believed.

These findings suggest several implications. Adding more peer-interaction instead of splitting students into individual calls with paraeducators during class time would be beneficial if remote learning was to continue. Integrating more rigorous curriculum and chances to push the limits of their knowledge as well as student choice should be included and considered when creating and selecting activities (Kurth 2016, Downing 2007). Ensuring that each paraeducator is focused and invested in the student’s learning in all activities is also an important step to ensure

engagement occurs (Perry 2020, Downing 2007). The consistencies of the results with previous research suggests that remote learning operates on similar patterns to that of in-person learning, and though the circumstances may be different, the steps to create effective learning remain similar. Although in person learning still may be the best option for high school students with SCDs, when remote learning is necessary, the findings from this study can help create the environment most conducive to engagement in the future.

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