Enhancing Learning Environments: One collaboration step at a time

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Abstract

Current educational systems are trying to transform their practices with those that align with critical thinking skills, collaboration amongst students and allowing students to feel motivated and engaged in learning. Within a special education classroom at Marcos de Niza; a Title I high school located in South Tempe, Arizona, a design was innovated in order to attempt to enhance this learning environment to foster students' ability to build intrinsic motivation and engaged within their classroom through collaboration and the autonomy supported by the teacher and this innovation. Throughout this paper, you will be able to see the contextual analysis, theoretical inspirations, design constructs and analysis of the implementation within two separate class periods.

Situational Analysis

Purpose, Vision and/or Mission of Context

Throughout this applied project course, I will be partnering with Marcos de Niza, a high school located in Tempe, Arizona. The current enrollment consists of approximately 1596 students. 9 % are African American, 2% are Asian, 17% are Caucasian, 54% are Hispanic, 12% are Native Americans, 1% Pacific Islander, and 4% are two or more races. 56% of their students receive free or reduced lunch which considers them a Title I school within the state of Arizona. According to Marcos de Niza's school profile, their purpose and mission are as follows and listed in the images below:

Image 1.1 Mission Statement

Mission Statement

It is the mission of Marcos de Niza High School to nurture a positive environment in which all students are inspired to strengthen their character, challenged to reach their highest level of achievement and prepared to be enrolled, enlisted, or employed upon graduation.

Image 1.2 Vision Statement

Vision Statement

Marcos de Niza High School is driven to become a premier learning community in educating diverse students by:

Strengthening character.

This is accomplished as a result of

- Valuing diversity and celebrating the traditions and cultures of all people.
- Encouraging students to take pride in their own success.
- Recognizing the strengths of all individuals.
- Building integrity and positive relationships through extracurricular activities.

Challenging all students to reach their highest level of achievement.

This is accomplished as a result of

- Empowering students to become active learners.
- Demonstrating growth through high achievement, self evaluation and SMART goal setting.
- Ensuring all students learn through intervention and enrichment.
- Fostering a culture of self-advocacy.

Preparing students to be enrolled, enlisted, or employed upon graduation.

This is accomplished as a result of

- Providing a guaranteed and viable curriculum.
- Partnering with sister schools, colleges, businesses, military, parents/guardians and the surrounding community.
- Offering opportunities for college credit through CTE, dual enrollment and AP courses.

After reviewing both of these statements, I understood that they (Marcos de Niza) are not focusing strictly on college readiness with their students but appreciate, accept and encourage their students to grow into holistic people. After interpreting these, my emotions heavily weighed in on my understanding of their statements. I agree with and appreciate that building the whole child is included in their daily language as a collective school. As a former special education teacher, I always felt like the purpose and visions of my former schools never really encompassed my program or students but after reading Marcos de Niza's, I feel that they live up to these. The systems of teaching and learning that I gather from these two statements shows that their main goal is to bring students to reach their own maximum potential and realizing that it may look different for each individual. These align well with my own personal teaching philosophy and mission too. I believe that this will give me a good guide in order to lead the design initiative with my partner while also allowing the teacher, Ms. Anspach, to be the expert of her specific context too. I think that since Marcos de Niza's statements along with the specific classroom I will be partnering with, align with my personal beliefs, that this impact of a small innovation could be sustainable. With regards to my small move, smartly made, I feel that moving forward in a co-designing model will allow for collaboration on a design innovation that lies within both of my partner and my passions.

Organizational Overview

Within this educational context, my project will be able to fit into the teaching and learning systems within one to two class periods of the day with a special education teacher, Ms. Anspach. These classes are built for students who thrive in a smaller learning context such as this rather than a co-taught English class. Each of these class periods do the same sort of activities but just with different students. This class period consists of freshmen students who are in need

of specialized instruction and have an Individual Education Plan (IEP) to provide them the level of support necessary. Two other adults, one assistant and one as a speech pathologist, are also involved in this classroom but only one day a week. The two class periods observed were second and sixth in which are titled "Basic English". I feel that my innovation will fit into the existing system and potentially could hold a sustainable value, due to the fact that I was a special education teacher and I already have a shared understanding of these particular classroom spaces. However, I am not the expert of this specific class so I would love to be able to implement a co-designing process with Ms. Anspach, if time allows. According to Benichou (2022), the term 'boundary crossing' is used prevalently when discussing a concept that invokes the ways that "people from different communities productively work with each other by crossing socio-cultural differences among them" (Benichou, 2022). This idea is something to think about when I'm working with the special education teacher who also is a first-year teacher of freshmen, which has another sense of a sociocultural perspective. Looking through various perspectives and keeping in mind the sociocultural differences between my context and the teachers, will allow me to provide a design that we both will understand and meaningful while also creating shared knowledge of the innovation itself. Some implications of implementing a design within this complex system may be that the co-designer might not want to design with me or have the time to do so since teachers are incredibly busy already. However, if this is the case, I believe that I will have more empathy towards this and be able to utilize my special education teacher perspective into the design itself coupled with my learning theories and understandings, and design based research perspective as well.

While being able to collaborate with a special education teacher within this specific context, it does actually allow for a little more freedom and flexibility. When discussing with

Ms. Anspach, she mentioned that she doesn't really have a curriculum that helps these students who are mostly labeled with learning disabilities, to level the playing field of the general education curriculum, so she tends to create her own ideas that would be helpful to teach these freshmen and more relevant to their needs and abilities. With this, she mentioned, comes more flexibility. She isn't as tied down to curriculum as a general education teacher which allows for more creative ways of learning. Knowing the context and the overview of the high school will allow me to be able to create an innovation which will be sustainable and potentially helpful. In order for me to design something that will be beneficial, it's important to look at and try to understand the current system and its existence.

Organizational Culture and Everyday Practice

Due to the nature of this complex system, a public high school, there have been many people who I've communicated with and gotten perspectives from. In the table below is an explanation of the certain stakeholders involved, their role that they play in according to my applied project, purpose behind the communication with me, questions that were posed to them and my initial intuitions behind those questions.

Table 1.1 *Organizational Structures and Initial Analysis*

Stakeholders:	Role:	Purpose:	Questions Asked:	Initial Intuition:
Mrs. Drowne	*Student Support Services-Department Chair* She oversees the Special Education department and supports teachers within Marcos de Niza.	In order to find a cooperating teacher partner, Mrs. Drowne was presented with information regarding my Applied Project and reached out to teachers who may be interested in participating.	What is the atmosphere of Marcos de Niza with Special Education services? Are there teachers who would be willing to participate in innovating a design? What are the demographics of this school?	This space is inclusive and really wants to support the whole child. Through this conversation, the administration really supports special education and the programs within the school. The teachers have created a very dynamic special education department

				who support each other as well. Due to the Title I status of the school, they do have many supports on campus to provide to all students too.
Ms. Anspach	*Freshmen Basic English-Special Education Teacher* The teacher of the classroom in which I will be co-designing an innovation with.	Ms. Anspach was willing to have me come into her classroom to evaluate and co-design an innovation based on my observations of her class.	Are any of these students involved in co-taught English as well? Do you have a set curriculum that you use to teach?	Could feel the pain points from a district level, not school. District is making classrooms utilize new reading curriculums that the teachers feel are not appropriate. She tends to think about what is best for her students rather than what the district tells her to accomplish.
Ms. O	*Speech Pathologist-Pushes-In for Support-6th hour* She is involved with one period of Ms. Anspach classroom and helps assist students with speech during her 6th hour.	Ms. O is an important part due to her experience working within this context and having a different perspective of the same classroom space as Ms. Anspach	Would a cross collaboration between 2nd and 6th period be appropriate for these students? Socially or academically?	Showed concerns about the students who may not be able to write fully or have the appropriate working memory to remember questions regarding academic material. However, she had high hopes for utilizing something like this with the social aspects of these students.

After being put into contact with a special education teacher within this school who teaches freshman "Basic English" to students with disabilities, I was able to go in and observe the current contexts in both second period and sixth which utilizes the same curriculum that Ms. Anspach creates, but with different students. When walking into the classroom, you could tell that this teacher has created a community in which students feel welcome and comfortable with each other. This may be due to the fact that it is getting closer to the end of the school year or

prior to being freshman, some of them may have known each other previously. However, when the teacher speaks or gives directions, approximately 95 % of the students follow her directions and are engaged with the material presented in both of the classes. The time I observed the sixth hour, unfortunately Ms. Anspach left early due to being sick, so the speech pathologist who was present during that class, took over and you could tell students felt comfortable and still followed all the directions and were all engaged in the activity presented. This evidence may potentially show that students within this specific classroom space are comfortable with various people within their classroom and have a sense of community.

A specific example of this is when students were working on a Greek Mythology lesson in which they were required to read aloud. For students who do not particularly have the ability to read at a higher education level, the teacher made it known that it was okay to stumble across words and made this activity not feel as daunting as it could've been. They all sat on their desks to read passages and popcorned around asking friends who was going to read next. I was pleasantly surprised that no one within this class refused to read aloud when their name was called. All of the other students were following and listening to whoever was reading as well. This provides evidence that students feel comfortable within this classroom and are willing to persevere through potentially challenging activities. When students were presented with activities regarding the unit they are working on, all of them did the work without hesitation. However, one area that I did notice that did not present as high of engagement encompassed their work that they do right when they come into class. Students will put their backpacks and phones at the front of class while waiting for the bell to ring. Once the bell rings for the start of the class period, students are asked to get their journal out and copy the prompt from the board and follow the task that it asks. Within both periods of the classes that I observed, students were often

reminded or hesitant to fill out the journal. The teacher eventually goes around to check everybody's journals after the first 10 minutes of class to make sure they did it or assist them if they didn't get all of the prompts. However, there was not much talk amongst the students at this time. When the class came together to go over the journal task, only the same couple of students answered the questions the teacher had posed. Since this was consistent between both class periods, I feel that this is a piece within the system that shows lack of motivation or engagement with this specific task. Due to this ingrained as a daily practice for students, I wonder how this could be transformed into a more engaging piece of their routine?

Due to me having the opportunity to observe both classrooms, second and sixth hour, I felt that I was able to grasp the everyday practices of the context. Students within both class periods reacted and acted alike to tasks that were similar, if not exact. Due to the saturation that was seen, I can conclude that this may be similar to their everyday practices. With the data collected through observations, field notes and discussions with the three different stakeholders, I feel confident that I have been informed of the organizational structure and how it currently exists. The school as a whole, based on the conversations with Mrs. Drowne, originally shows that it's an inclusive environment where the main goal is to create a successful whole child who is ready for their future after graduation, is what Marcos de Niza thrives and succeeds at. Due to this, I feel that an innovation that creates more engagement or motivation within a specific context in Marcos de Niza, will be able to support their main purpose, mission and values that lies within this system.

Resources

When creating an innovation for a complex system such as a high school setting, many resources may be needed in order to sustainably implement a design. For example, this

commitment to this classroom will cost me time due to wanting to be as involved as I can so I can really understand the pain points and find gaps that need to be filled or ways that could enhance these learning systems which are so ingrained in the US educational system. Resources that potentially are available to me currently are literature regarding special education classrooms and the sense of belonging students feel within school spaces coupled with engagement or motivation that potentially lacks within this specific world of education. Through literature, I will be able to support and validate my future potential design that would also allow for buy-in with the stakeholder. I feel that through theoretical guidance in the literature, it will provide evidence in which I can support my claims and design to the stakeholder. Another resource that is available to me is the flexibility within this context. I feel like this is a resource as it allows for me to be able to be creative and foster a co-designing relationship with my partner. Due to the nature of this applied project, I feel that there is a reciprocal resource relationship between me and my partner. We will be able to co-design a small innovation that potentially could help enhance the teacher's learning system, while also giving me insight and practice in order to design on my own rather than working with a team like previous experiences that I have had within the Learning Sciences program.

Since this project is done within one short semester of ASU's calendar, utilizing the resources that are available will be necessary to have a successful innovation. One of the main goals of this project is to design this small move, smartly made, to be sustainable or be able to be modified by the stakeholder in the future if she is still wanting to utilize this. Therefore, the resources of this innovation provided to her will be helpful for iterations to this from a teacher's perspective. Ultimately, this would be ideal for the teacher to take over the Learning Sciences

perspective in order to still be able to create meaningful learning opportunities for her students within the constraints of the complex educational systems.

Theoretical Inspiration

Introduction

According to Mckenney and Reeves (2019), utilizing a theoretical framework when conducting educational design research (EDR) can aid us in a way to "describe, explain, predict, or even prescribe how to change or affect certain phenomena" (Mckenney & Reeves, 2019 p.35). Due to the nature of this work, utilizing several lenses of theoretical ideas can give us a more holistic sustainable innovation. While partnering with a complex system such as Marcos de Niza, which has multiple layers of social structures, it's necessary to find an area that could potentially have a small move, smartly made which will alter the teaching and learning systems in an effective and sustainable way.

After analyzing the current systems in Ms. Anspach's freshman English class, there were a few different opportunities for further support that were illuminated. Within this space, students were extremely quiet and did not engage with one another when working through their academic work. One specific space that I noticed this to be the most prevalent was their journal entries that they do daily. Students were asked to get their journal entry out, copy the prompt on the board and then finish the prompt in their journal. Ms. Anspach gives the students about ten minutes to accomplish this task and it is presumed that it's their work that begins their class period. When observing this task happen, Ms. Anspach needed to remind students multiple times throughout the journal activity, she had to monitor and walk around to make sure students knew what the expectation was, following the task or if they needed help. After most students were done with this journal entry, the class went over the answers to their journal entries and the same

two students answered all of the questions and approximately 70% of the students were not paying attention to the teacher or other students. After observing this phenomenon, I felt that this may be an area where students could utilize collaboration in order to enhance their motivation and agency in their daily practices. Through the explanations of self-determination theory coupled with motivation and engagement, this could drive an innovation in a successful and sustainable way. Throughout the next sections, I will be discussing these two theoretical lenses that will support my design ideas in the future.

Self-determination theory

Within the United States and specifically formal educational institutions, special education students are more likely to drop out of high school due to lack of resources or motivation. According to the *National Center of Educational Statistics* in 2019 approximately 10.7% of students with a disability dropped out of high school compared to the 4.7% of the non-disabled peers (2023). However, self-determination theory coupled within a special education classroom can hopefully overcome these dropout rates and provide these students the motivation and thought of capability that they desperately need. According to Deci and Reeve (2008), self-determination theory can be applied to educational settings in order to motivate students, by having teachers who support their autonomy within the classroom. Through autonomy, students will be able to feel that they have ownership of their learning, which is lacking within the special education classroom that I am designing for. With autonomy support from the teachers, students should be able to create their own motivation in learning through this gradual process. These authors state that "Autonomy support requires a willingness to enter into relationships from the students' perspective to encourage initiative, nurture competence and communicate in ways that are non controlling and information rich" (Deci & Reeves 2008, p.190). By utilizing this

framework to build a design around building autonomy within the classroom space could potentially foster agency and motivation for students. Due to the classroom not being well versed in tools exposed to intrinsic motivation strategies yet and although the teacher has created a safe environment for learning to occur, students still feel that the authority and agency is within the teacher solely. Utilizing this theoretical lens along with engagement pieces of design within this space can enhance these complex systems. This could appear if the innovation can provide the teacher an observable action of students' motivation (Decin & Reeves, 2008 p. 194). This will be able to show that with collaboration set up in a way that allows for less control from the teachers' end, that students potentially could feel this sense of autonomous support throughout this design innovation. Moving forward with the design sketches, motivation coupled with self-determination theory will play an integral role in order to make this small move, smartly made sustainable.

Intrinsic Motivation

Kusurkar et. al (2011) developed a framework regarding how to build intrinsic motivation within classroom contexts by utilizing the support of self-determination theory. In order to be able to build intrinsic motivation within these students, who have been in special education classes for over 3 years, this framework could guide an innovation which potentially develops these intrinsic motivation feelings and the thoughts of capability that these students desperately need. Intrinsic motivation defined by these authors is, "observed when one engages in ana activity for a particular benefit or because of pressure from others (Ryan & Deci 2000a, b)." (Kusurkar et. al, 2011). This is something that is educators are striving to allow happen within classroom spaces. Kusurkar et. al (2011) mentions that when building these motivational aspects, the learning environment should consist of three basic components: autonomy,

competence and relatedness. If there is autonomy or supportive teaching, students may feel like they can be agentic in their learning coupled with feeling confident in this space. While supported by the teacher, this could also create a sense of relatedness within the classroom, where they all are creating knowledge together rather than just being receivers of knowledge from the teacher. In Ms. Anspach's classroom, you can feel that she has tried to create an environment where students feel this sense of relatedness or connectedness within this space. However, the autonomy and competence, which are two other aspects these authors discuss to build an intrinsic motivational classroom, are lacking. When students feel that they are capable of learning while also feeling that they have ownership of their learning, they will be able to slowly create this context in which intrinsic motivation can occur. Kusurkar et. al (2011) utilizes various "tips" that could help guide an environment like this one, in this direction and a few of them are specifically applicable in regards to this design innovation. Throughout this article, they illuminate various ways that you can build an environment in which fosters intrinsic motivation within students. In the following table (Table 1.1), these tips that are applicable to this specific context are elaborated in more detail.

Table 1.1 Kusurkar et. al (2011)'s Tips

Kusurkar et. al (2011)'s tips for building intrinsic motivational spaces:	Description and Application
Tip 3: Encourage active participation:	● Makes learning more autonomous and is easy to give feedback. ● Increases relatedness among students and teacher ● Can stimulate discussion of those involved in the learning processes. ● Seating within the classroom is important to set up for collaboration
Tip 4: Encourage students to accept more responsibility for their learning:	● Having responsibility can stimulate students' motivation.

	• Can do this by giving expectations early that active participation will be the way to learning. This is where there may be peer to peer learning transformation.
Tip 5: Provide structured guidance:	• This doesn't come naturally to students (giving them the responsibility of their learning) • Teacher provides some structure and then guides students on the path of active participation. • Balance of letting students lead and bringing in their own expertise with the teacher supporting this as well.
Tip 8: Give emotional support:	• Create an environment where this is present • Warm, positive, sharing atmosphere where students feel it's safe to express feelings etc.

These four areas can be developed or are developed within Ms. Anspach's 2nd and 6th hour

classes and moving forward can be utilized to allow for an environmental shift in this

educational system. From my observations of this classroom, students feel that there is emotional

support weaved throughout the class period. From my prior field notes, I mentioned that

"Students were chatting and seemed comfortable with each other while the teacher took

attendance and got the lesson ready. Ms. Anspach also has conversations with the students about

their outside of classroom life." This shows that this teacher has created a positive and warm

environment that fosters students' willingness to express their feelings therefore *Tip 8* feels like it

is already present within both of the Basic English classes she has. This is a good indicator that if

utilizing the other steps within a design innovation, this could potentially position students to feel

intrinsically motivated. One of the main tips to focus on within the design sketch would be that

of encouraging active participation coupled with providing structured guidance. Due to the

nature of the classroom and the lack of collaboration between students currently, utilizing a

model that provides structural guidance for students to collaborate effectively would be

beneficial for them instead of an extreme change of classroom culture without a model. When

utilizing a framework for students to collaborate with each other, such as; group roles and activities within that group work but also allowing the freedom of what exactly is being discussed between the students, will help create autonomy support which in turn is motivating students to learn. According to these authors regarding *Tip 4: Encourage students to accept more responsibility for their learning,* mentions using a seating chart within the classroom, "A seating arrangement, an important element of this process, which facilitates the interaction of the students with each other and the teacher is recommended" (Kusurkar et. al 2011). Currently, students are seated in rows where there is minimal ability to interact with each other and doesn't provide a layout that is conducive to collaborative learning. However, moving forward with the design prototypes and sketches that a seating arrangement may need to be altered in order to enhance these students' motivation and autonomy within their classroom spaces with hopes that this could potentially be transferred to various settings of theirs.

Conclusion

After analyzing Ms. Anspach's classroom and thinking creatively about the different variations in which I could potentially bring more autonomy and intrinsic motivation to this space, self-determination theory is a way to explore this even further. I believe this will help transform this space into one where students feel comfortable and confident with talking to each other and coming up with solutions together rather than looking at the teacher for all of the answers. If students are positioned in a way where they can effectively collaborate with each other on academic pieces, while creating a community in which fosters the ability to critically think together, this will foster a sense of motivation and agency in their learning. Moving forward towards the design phase, these will help guide the essence of the innovation and potentially help with keeping it sustainable.

Design Statement and Prototypes

Introduction

After theoretically analyzing Ms. Anspach's classroom context and systems in place, I moved forward with thinking through the design process. Utilizing Ms. Anspach's feedback regarding the areas I saw in need of a small move, smartly made I was able to find a space in which students do a daily activity called their "journal entry". When originally observing, students needed to be reminded each time I observed within two different class periods as well to complete their journal entries. This is something that is done daily and takes up about 10 minutes of the beginning of their class period. The journal entries that I observed were where students copied down the sentences within their journals and either fixed the sentence or found the adjectives within the sentence on the board. After students finished this exercise and were reminded by the teacher several times, the whole class came together to figure out what the answer to the prompt was. At this time, only one to two students would answer the question and then the whole class would move on. Another gap of motivation that I noticed as well was that students do not engage with each other and what seems to have a difficult time collaborating and answering and asking each other questions and go straight to the teacher if an answer is needed. Through looking at this class through a self-determination theoretical lens, I saw an opportunity to design an innovation within this space where there was already a caring environment built by the teacher, but motivation of students and engagement was lacking.

Exploring Solutions

While observing and brainstorming through this potential area of design, I utilized my knowledge on motivation and collaboration in order to develop the following design sketches in which I discussed these with Ms. Anspach on a Zoom meeting. The following images allow you

to see the two design sketches along with the highlights and considerations regarding each design sketch.

Image 1.1 Cross Class Collaboration-Design Sketch

There are two classes of Basic English that Ms. Anspach teaches where she essentially teaches the same material but has different students. I thought this may be an opportunity where there could be some crossover between the two classes that could create agency and motivation between students rather than the agency lying solely with the teacher. If students were given some question prompts to ask the other class about assignments or any confusions in class, then it would give other students the authority to answer questions and become an expert in this way rather than relying on the teacher to have the answers. Currently, students place all of the authority on the teacher and will ask her for various items such as; "is this the right answer?" or "how do you spell…", instead of students positioning their questions to her, this could be a way that they position them to the other class that is learning the same material as them. A way to make this activity more engaging as well may be, using this idea through a Jamboard type of setting online versus a bulletin board inside the classroom. After discussing this design sketch with Ms.Anspach, we came up with the following highlights and considerations regarding this

design sketch.

Table 1.2 Highlights and Considerations-Design Sketch 1

Highlights	- The students would be the ones taking ownership of their questions - Students may feel like they are important when they feel they can answer a question that was posted - The cross-collaboration may be helpful and alleviate the need for students to ask the teacher all the questions - This give the opportunity for students who are shy to pose questions
Considerations	- When utilizing an online platform, Ms. Anspach said that it's hard for them to regroup after using computers so she wouldn't recommend using Jamboard. - This would be a whole change in their current classroom systems. - Would need to be fully taught to the students and explained. - It may be more work for the teacher in the long run.

In order to give Ms. Anspach a couple of options to which she thought would be the best

fit for her classroom along with gaining her feedback on them, I decided to create another design

sketch that could illuminate motivation and engagement within the classroom space.

Image 1.2 Journal Collaboration-Design Sketch 1

Through my second design sketch, I thought at a little bit of a smaller scale. Currently

when Ms. Anspach's class does their journal entries, she has to remind them quite a bit and she

goes around the classroom to check their journals and help students if they need help with

anything. Through thinking about how these students needed to be reminded frequently to

accomplish this task and then when going over the task, the same two students answered all of Ms. Anspach's questions regarding this, I thought that this would be an ideal portion of their classroom time to incorporate some collaboration pieces to their already existing journal entry position of their class. Through this design, students would be seated in groups of 2-3 and would collectively write their journal prompt in their journals. After this step happens, which is something that students do every day, then students would be able to choose a role (i.e. team lead, recorder, speaker, and time keeper) they would like to encompass in their group work and throughout this experience to keep their collaborative work on topic while also potentially eliminating as many behavior issues as possible to make it easier on the teacher. Once students choose their roles, they would discuss their journal entries with one another in their groups and the person who took the "recorder" role would be able to write their collective understanding of the answer down on a piece of paper which would be transferred to the board where other groups would be able to see. Once all the groups completed their journal entry then they would be able to all discuss each other's answers to come up with the "right" one if necessary or if it was a journal entry about their thoughts, then it could be a good collaborative discussion amongst the students. Below are some of the highlights and considerations of this design sketch that Ms. Anspach and I collectively came up with it.
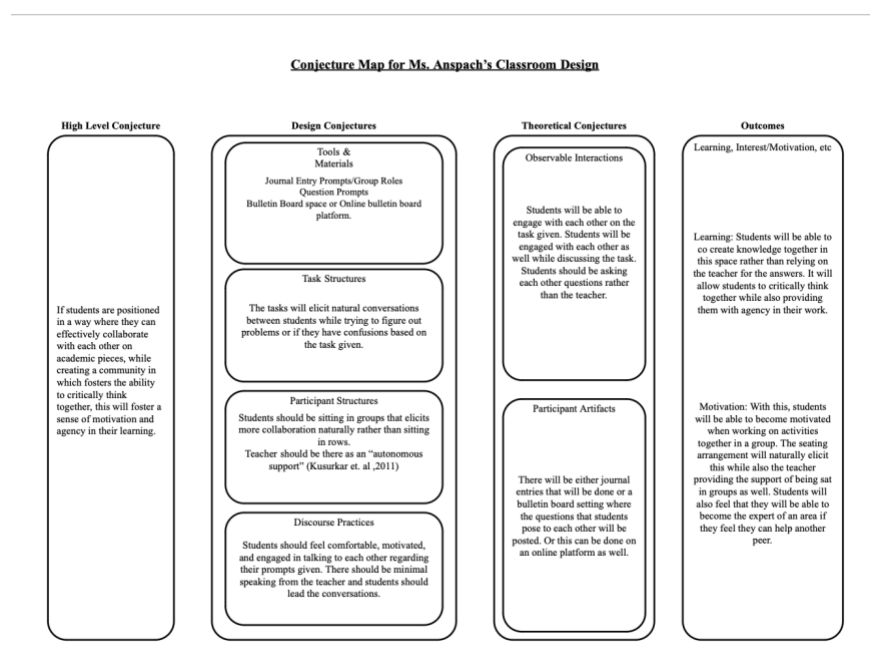
Table 1.3 Highlights and Considerations - Design Sketch 2

Highlights	- We're not changing their routine at all, just altering an activity that is in place. - Students would be able to work together and not have to ask the teacher as often. - This could provide a more engaging part of the journal entries and not having students be reminded to complete it. - Students can take up roles that encompass real world team like atmospheres.
Considerations	- This could take practice as these students are not in groups already. - Teaching the group norms and rules would take time. - It may be more work for the teacher in the beginning but hopefully it would allow for students to take over the conversations later.

Conjecture Mapping

Throughout these next phases of actually making a prototype, in order to organize my thoughts and make sure the design can be built to the best of its ability, I utilized Sandoval (2014)'s tool of a conjecture map. According to Sandoval (2014) conjecture mapping can be a tool that helps marry the design lenses and theoretical lenses of a learning environment by mapping out how they can work together to gain certain desired outcomes (Sandoval, 2014 p. 19). Below is my conjecture map of the current systems that are in place within Ms. Anspach's classroom coupled with my design ideas.

Image 2.1 Conjecture Map

Conjecture Map for Ms. Anspach's Classroom Design

High Level Conjecture	Design Conjectures	Theoretical Conjectures	Outcomes
If students are positioned in a way where they can effectively collaborate with each other on academic pieces, while creating a community in which fosters the ability to critically think together, this will foster a sense of motivation and agency in their learning.	**Tools & Materials** — Journal Entry Prompts/Group Roles Question Prompts Bulletin Board space or Online bulletin board platform. / **Task Structures** — The tasks will elicit natural conversations between students while trying to figure out problems or if they have confusions based on the task given. / **Participant Structures** — Students should be sitting in groups that elicits more collaboration naturally rather than sitting in rows. Teacher should be there as an "autonomous support" (Kusurkar et. al ,2011) / **Discourse Practices** — Students should feel comfortable, motivated, and engaged in talking to each other regarding their prompts given. There should be minimal speaking from the teacher and students should lead the conversations.	**Observable Interactions** — Students will be able to engage with each other on the task given. Students will be engaged with each other as well while discussing the task. Students should be asking each other questions rather than the teacher. / **Participant Artifacts** — There will be either journal entries that will be done or a bulletin board setting where the questions that students pose to each other will be posted. Or this can be done on an online platform as well.	Learning, Interest/Motivation, etc / **Learning:** Students will be able to co create knowledge together in this space rather than relying on the teacher for the answers. It will allow students to critically think together while also providing them with agency in their work. / **Motivation:** With this, students will be able to become motivated when working on activities together in a group. The seating arrangement will naturally elicit this while also the teacher providing the support of being sat in groups as well. Students will also feel that they will be able to become the expert of an area if they feel they can help another peer.

To conceptually think towards intended outcomes and the design process, conjecture mapping guided me through the appropriate tools/materials, task, participant structures and discursive practices. In order to effectively position students within Ms. Anspach's classroom to be able to build motivation and agency in their work through collaboration, there are certain tools that would be needed such as; the journal entry prompts, group roles within that space, question prompts, and a bulletin board space depending on the innovation that is decided upon Ms.

Anspach and I are moving forward with the actual design. Within either design option, the task structures of the classroom space will need to be altered in a way that will support natural conversations through collaboration in groups and finding ways to come up with collective decisions together. Through the participant structures, learners would need to be able to sit in groups which would help with eliciting those natural conversations, while the teacher supports students' autonomy by giving support, modeling and guiding students in ways to work together while creating knowledge together. Discursive practices within these spaces would also change to allow students to feel comfortable and motivated enough to talk to each other regarding the prompts given. Dialogue would mostly be between peers rather than just the teacher as well. With all three of these design conjectures coupled together along with the high level conjecture of *if students are positioned in a way where they can effectively collaborate with each other on academic pieces, while creating a community in which fosters the ability to critically think together, this will foster a sense of motivation and agency in their learning,* students will be able to become motivated towards their activities that are done within class, create answers and knowledge together with their peers rather than the teacher just providing the knowledge, and allow students within the groups to be able to feel like an expert or given the opportunity to be able to feel confident in this space.

Initial Prototypes

After creating the design sketch for this model, I created a prototype to share with Ms. Anspach and get her opinion on before making a decision based off of the design sketches of which one to implement. Through this prototype, it has prompts for students to utilize when trying to think of questions to ask the other class, sentence starters for those and the instructions on how to use Jamboard too. This was designed specifically for students who have a disability

and are on an Individual Education Plan (IEP) and receiving specialized instruction within Ms. Anspach's class. Due to my understanding and experience as a former special education teacher, this allowed me to write these instructions and prompts within the vocabulary that these students will be able to digest and understand as well.

Image 3.1 Cross Class Collaboration Prototype
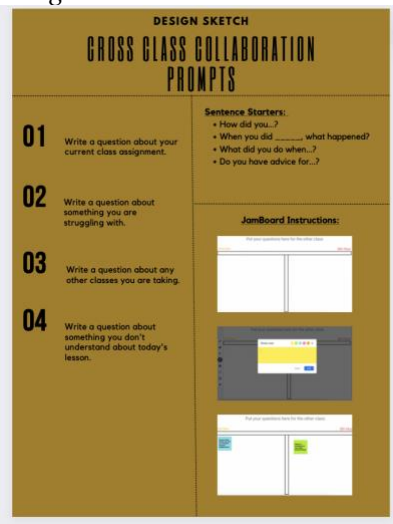
Within this second design sketch of utilizing group work spaces in order to foster motivation and engagement with students, the need for roles within those groups is necessary to give students a purpose behind why they are in a group and a way to practice real world skills when working on a team. The roles that were posed were team leader, recorder, time keeper, and speaker. With these there are descriptions of the responsibilities for each role. The first prototype (Image 3.2) here listed little visuals to give students a reference for how they should act within these roles; however, after thinking a little further, the second prototype (Image 3.3) was built with real life examples of how these students could utilize their roles within this group setting

regarding their journal entry. Due to the nature of this classroom as well, these were modified for students to understand and feel comfortable taking these roles on, especially within a space that may be new or unfamiliar to them. The responsibilities listed for each role as well are written in an easier to digest format and will hopefully be understood by the students and potentially useful in other areas of their lives as well.

Image 3.2 Journal Collaboration Prototype (1)
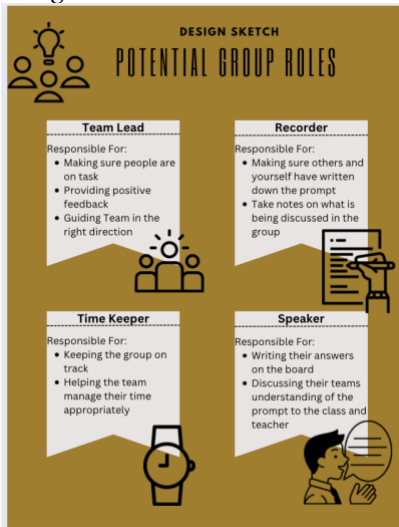
Image 3.3 Journal Collaboration Prototype (2)
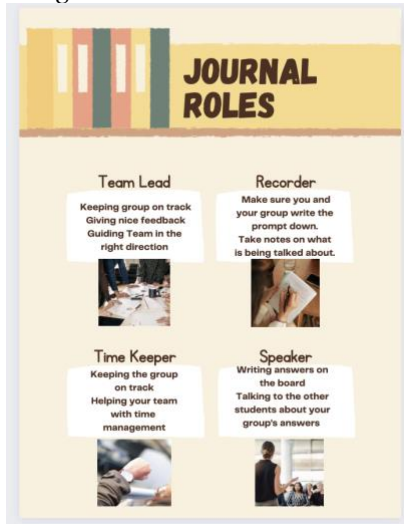
Revised Prototypes

After discussing these design sketches and initial prototypes with Ms. Anspach, we decided together that the journal entry route would be the best for her classes at this moment. Due to it not particularly changing the routines within the classroom and just altering one aspect made the most sense. Most students within special education classes thrive on routine so when we start to change their everyday culture, this is where the innovations may fail. Moving forward with this design, I then took Ms. Anspach's feedback and created more deliverables to implement within both her second and sixth hour classes. She discussed that she will set her students into groups and put them with members of the class that she thinks would work best with to start. We also discussed that the initial journal entry for sitting in groups would be an easy one so the students could get used to the task and feel successful at it. Below are the revised deliverables and explanations of how they were iterated.

Image 4.1 Revised Prototype Deliverables (1)
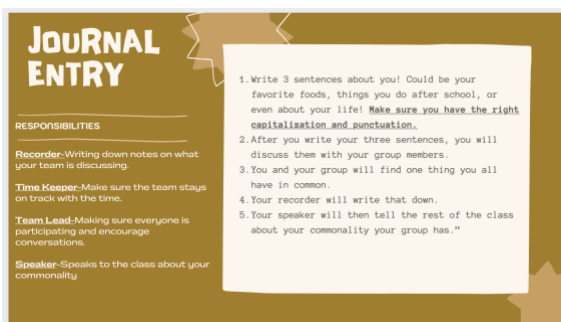
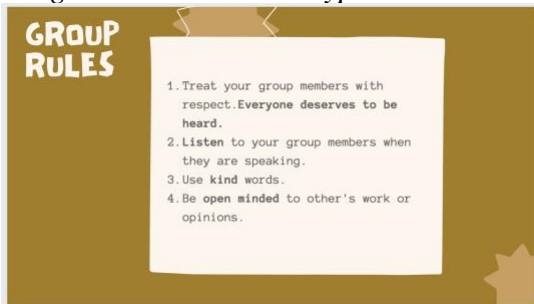*Image 4.2 Revised Prototype Deliverables (2)*
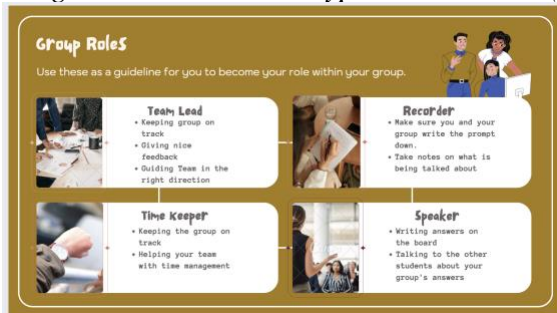
Image 4.3 Revised Prototype Deliverables(3)
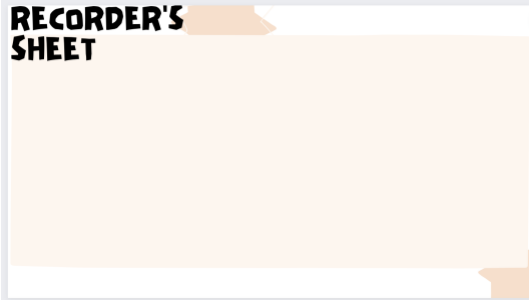
Image 4.4 Revised Prototype Deliverables (4)

With these revised designs, I felt that there needed to be a few more deliverables needed in order for this activity to be successful. Since students have not been placed in groups before and that this is a small change to their typical classroom culture, I felt that roles, prompts and norms should be in place so students know what to expect and know how to work together as well. Therefore, I added these other few products to make it easier for the teacher to implement this as well. I thought about how teams work together in "real world" experiences so these skills that students learn could be transferable to other contexts and allow students to feel confident with the skills and knowledge they have.

Conclusion

After designing these prototypes and piecing it together with the help and guidance of Ms. Anspach, we decided to move forward with this and implement it in both her class periods

of Basic English. When discussing this with her she mentioned, "why not just do it in both since the room will already be set up, we might as well". Through designing this innovation while using a lens of self-determination theory coupled with motivation and using Kusurkar et. al (2011)'s framework of utilizing various aspects within the classroom such as a seating arrangement, supportive classroom, and teacher support and autonomy guidance to create motivation, this design should be able to be iterated and sustainable within this classroom space and potentially transferable to other contexts as well.

Design Enactment

Implementation Process

Moving forward with the next phase of design based research, I was able to implement the designs that Ms. Anspach and I collaborated on, on April 3rd, 2023. This occurred within the second and sixth hour Basic English classes of Ms. Anspach. The second hour class starts at 9:05-10:05 and the sixth hour class starts at 12:55-1:55. Prior to the implementation, Ms. Anspach and I had a series of emails sent and a zoom meeting to discuss how we wanted this process to look like. She mentioned that she was going to set the desks up in groups the day prior to the implementation and put students in groups that she felt would elicit the most engagement. My portion of this was to make sure that I had enough handouts, role sheets, while also sending the journal entry prompt to her prior so she could write it on the board. The effort prior to implementation was more than expected, however, due to these students not sitting in groups prior or having any experience with that in this class, it felt important to be very prepared, especially for students who don't necessarily like their routine changed. When arriving into the classroom on that day, I had approximately three to five minutes to set up the classroom by

putting the roles sheets on the tables before students sat down. I allowed the teacher to give

directions toward the students. She mentioned to them to put their backpacks in the front of their

classroom, which is part of their normal day to day routine, and then find their journals on a desk

and sit down where it was. After the students had the opportunity to set their things down and

find their journal, you could tell that this major change to their existing systems in place, may

have been too much of a change. As a reference to the deliverables that were utilized during this

implementation phase, they are listed below and will be referenced throughout this analysis.
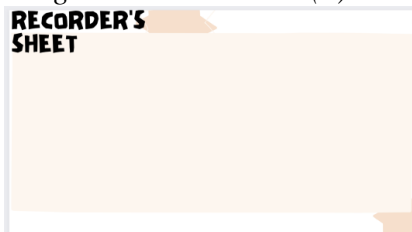
Image 1.1 Deliverables (1)
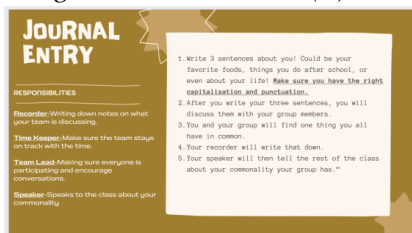
Image 1.2 Deliverables (2)
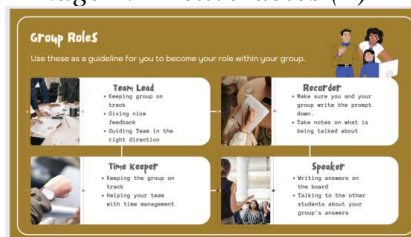
Image 1.3 Deliverables (3)

Image 1.4 Deliverables (4)
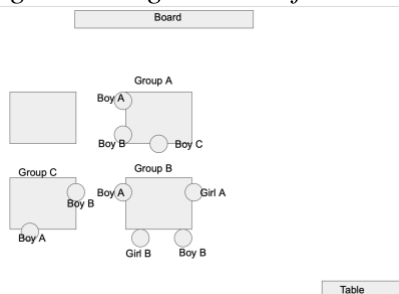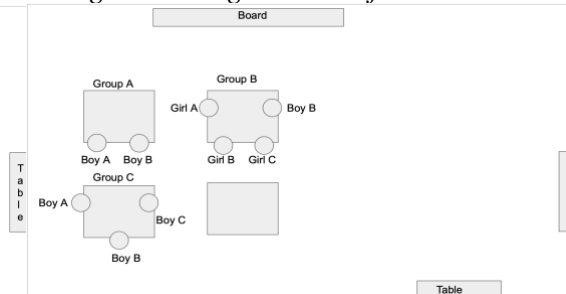

Evaluation Process

Data Collection

In order to understand how this innovation altered the already existing learning systems

in place in Ms. Anspach's classroom, I developed a checklist (Image 2.1) that was aligned with

motivation and engagement pieces of the innovation to make it a little easier for me to collect

data as I was both a participant and observer in this case. Due to the legalities of a special

education classroom, I was not able to take pictures or record so I am relying on my observations

and field notes that were written after the implementation to determine how this innovation

worked. The checklist gave me a quick check in order to look through while I was a participant and an observer of this context and innovation. Some of the items I was looking for during this time had to do with dialogue between group members, if their roles helped them collaborate, if students were engaged, if discussion was geared towards the task or if students showed signs of motivation (i.e. Initial interaction with the activity).

Image 2.1 Checklist for Observation

Things to look for:	When:	Why:
1. Dialogue between the group members.		
2. If the roles are guiding students to collaboration.		
3. If students are engaged with each other.		
4. Dialogue that is relevant to the journal prompt.		
5. Show signs of motivation towards collaboration with each other. (or initial interest in activity).		

The second hour class consisted of 9 students who were seated in groups as such; two boys, two girls and two boys, and three boys (Image 3.1). With the sixth hour class; they had nine students as well, but had groups of two boys, three boys, and three girls and one boy (Image 3.2). Within the sixth hour class, there also was a one on one assistant for one of the students as well that was helping and assisting in the innovation. Below is a diagram of how the classroom was set up in the groups for the second hour class period versus the sixth hour class period who interacted with this innovation.

Image 3.1 Rough Sketch of 2nd hour.   *Image 3.2 Rough sketch of 6th hour*

When the implementation process was occurring, the teacher had me introduce what the students were going to be asked to complete, the roles that they get to choose and the norms that they should follow while working in a group. Once students chose the roles, I also handed out the recorder sheet that students used to complete that role (Image 1.3). Through the use of my checklist, notes, and field notes that were written approximately 10 hours after the implementation of this design, I was able to analyze how this innovation worked and the strengths and opportunities for further iterations.

Data Analysis

While being a participant and observer within the context of the implementation of the innovation, it felt difficult to take in all the data that surrounded me. However, having two different class periods made it interesting to see and look at the data collected between the same innovations implemented in two different settings. After doing extensive field notes, it was shown that there was more data collected for the second hour class than the sixth, however there are some things to note between the two. According to my checklists and field notes, I noted that when students entered the classroom on that Monday, they immediately noticed that the desks were in groups. Some were audibly upset regarding this change by stating, *"Ugh, who am I sitting next to?"* or even mentioning, *"I don't like this"*. You could tell through those initial comments that when the typical routine is altered, these students react with a negative emotion

towards it. However, within the sixth hour class, the student who mentioned "*I don't like this"*, changed her mindset when she saw who she was sitting next to and then seemed to shift towards excitement.

Some strengths throughout the implementation are to be noted. Since utilizing a self determination theoretical lens when looking at the data and seeing if students had initial motivation to work collaboratively, I noted some instances in which I saw this. Within the second hour class, there was a group of two boys (Image 2.1, Group C), who automatically started talking to each other even prior to the journal prompt being given to them. Although there were only two in this group, they were able to choose fairly quickly who wanted to be the recorder and who wanted to be the speaker. This exchange of dialogue was interesting because when I came around to ask them, they automatically knew who wanted to be which and the more outspoken member of that group said he would be the speaker (Image 3.1, Boy A) while the quieter boy (Image 3.1, Boy B) was the recorder. This was interesting due to the fact that they both allowed each other to have what they felt was most comfortable to them, especially in a change to their environment and systems. These two boys were able to come up with various facts that they had in common with each other and stayed on task throughout the duration of this activity. Another group within the sixth hour was also the same and ironically sat in the same spot as the group prior in the second hour class. This group of boys (Image 3.2, Group C), were showing excitement when they came into the classroom and saw who they were sitting next to. They started chatting to each other before the bell rang and were laughing and talking about their lives outside of the class. This showed me that they possibly are friends outside of this class and have a rapport with each other. Throughout this activity, these students were on task and reminded about three times to get back to the journal prompt, but they worked through it and

came up with various commonalities between each other. There were several other highlights

within this implementation and are listed below (Table 1.1).

Table 1.1 Highlights of Implementation

Highlights in Both Classes	Highlights in 2nd hour	Highlights in 6th hour
• Students showed an increase of motivation due to the immediate communication between ⅔ groups in each class. • The teacher put students with their peers that they enjoyed being around so it made them more interested in this activity. • Students were only reminded once to get their journals out and they followed the instructions given.	• Students who were a group of 2, took initiative and worked together automatically without even given too many instructions	• Student group with 3 boys, worked together and came up with multiple commonalities and used their time wisely. Could tell that they were friends outside of the classroom because the teacher had to remind them to stay on topic 3 times. • Students in the front group with 4 students worked well together and had a student from Life Skills with them and included her in all of their conversations and followed the instructions and discussed with each other their favorites

After thinking through the positive instances that came out of collaboration with students,

specifically in a special education classroom, there was lots of room for improvement and

considerations when taking on this task in a space where students thrive on routine and knowing

what is expected. Some opportunities that I found throughout this process was that these students

did not utilize the roles they were given and actually didn't interact with the roles document that

was at their table at all after they decided who had what role. The students who chose recorder or

speaker followed their role possibly due to it being a concrete responsibility of either writing

down their information or speaking to the class, while the other roles were more abstract.

Something I noticed as well was that in both of the classes there was one out of the three groups

who were visibly more uncomfortable with sitting in groups. This may be because there were a

lot of new things happening that day; it was a Monday, they were not warned that their seats were going to be changed and sat in groups, I was there, which isn't a normal occurrence, and it was testing week so they did not have school the next day. These may have factored into some of the students' motivation towards this activity. The group in the second hour (Image 3.1, Group B) consisted of two girls and two boys. Within this group, the boys took initiative and started the conversation with the girls, however, the girls did not seem engaged or wanting to participate. When thinking through the roles within this team, Boy A mentioned he wanted to be the speaker and Boy B said he'll be the time keeper. When asked, the girls seemed hesitant. Girl A said "I'll be the recorder" in a non enthusiastic voice. I stated to Girl B that she'll get to be the team lead then. She stated, "That's so much responsibility". This is something to note that maybe this shows that she wanted another position but didn't feel comfortable picking one. Within the sixth hour (Image 3.2, Group A), there was another instance of potential uneasiness. The two boys were put together, according to Ms. Anspach, due to one of the boys (Boy A) having a difficult time with social skills and that there may be behavior problems if he was paired with other students. Therefore, she put him with another quieter student. Within this group, Boy A took initiative of the conversation and tried to get Boy B to participate. However, in order to just finish the activity, Boy B just agreed with whatever Boy A stated. This is an opportunity for some potential iterations in the future regarding groups within this space and maybe having a chance to preface students to knowing they will be sat in groups or allow students to just chat without guidance between each other as well to become more comfortable with their group. Below are other opportunities that I saw between both of the classes and within each separate class.

Table 1.2 Opportunities of Implementation

Opportunities in Both Classes	Opportunities in 2nd hour	Opportunities in 6th hour
● Students did not follow the roles given, except for the concrete ones (recorder, speaker). ● Seemed like a little too much change at one time. ● Since this was a new change to their existing systems, maybe with practice and modeling, it could be more effective. ● ⅓ of the groups in the class seemed to feel uncomfortable and had a difficult time thinking through the journal prompt. ● Didn't take into account that there may be students absent-Had too many roles for not enough students ● Initial reactions were negative, but after seeing who they were sat next to they seemed to change their thoughts	● Group of 4 students (2 boys, 2 girls) had a hard time interacting with each other. The girls were quiet while the boys made all of the decisions. ● Group of 3 boys, needed the teacher's guidance and support to start the conversations between students	● Group of 2 boys did not interact with each other unless they had to. They finished the commonalities due to one of the students just agreeing with the other

Through utilizing the framework that Kusurkar et. al (2011) illuminated to build intrinsic motivation, this innovation did prepare students to encourage participation, accept more responsibility for their learning, and attempted to provide structured guidance. However, due to the nature of the classroom in which routines are prioritized and change is hard for students, altering the classroom in several ways seemed to be a detriment to the innovation itself. With changing the seating arrangement, putting students in new seating spots, implementing a new way of doing their journal activity and trying to provide students support in being able to discuss questions with their peers, while also utilizing roles there seemed to be a lot of changes in one

area. In the next section, I will discuss the potential iterations to this innovation that could

hopefully make it more successful and sustainable in the future.

Future Iterations

   After thinking about how this design was implemented and used within this space, I

couldn't help but think of ways to iterate it to make it easier and more effective for future use.

Next time when implementing such a design into a culture where students don't normally

interact with each other, I feel that modeling what was what we were looking for and actually

showing what was needed to be accomplished should've been done. Students were not sure

exactly what to do with the roles or what to discuss and I feel that this is a lack of me explaining

and modeling how to incorporate these roles into their practice. I also feel that it may have been

too much at one time, so maybe next time to just implement the roles, have students practice

those with simple tasks and then have them do the journal collaboration due to the lack of the

"team leader" and "time keeper" role that were not taken up by the students and we, as the

adults, had to help and guide students with that responsibility. I do wonder if they were to have

the opportunity to practice these roles or if we chose the roles for these students first, that they

would have been able to utilize them within this journal collaboration space a little more and

more independently? Another iteration to be done, may be to create a PowerPoint or something

that could've been on the board in case students forgot what they were supposed to do. I noticed

that since the teacher usually has the authority in the classroom, when students were given that

authority, they didn't really know what to do or what to write down and even though they had

reference sheets at their desk of the roles, no one used them. One of the groups in the second

hour class (Image 3.1, Group B) were extremely quiet and didn't show much interest or

knowledge on what was supposed to happen, so I feel that this may have been too quick of a

process and that students would need to be taught more so how to interact with each other or

provided time before their journal activity to get chat with their table in a more natural way by

asking each other questions or even playing a game of some sort to become comfortable with

each other. Another iteration that would be beneficial for the future, would be giving students a

journal prompt that may have been relevant to their daily practices, the one that I observed

originally was that of "correct the sentence" and if students had a more concrete example with a

right or wrong answer that they could critically think together about, I wonder how that would've

changed the dynamic of the group work rather than an opinion journal prompt? Throughout the

enactment of this design, I feel that there were many opportunities that can be altered moving

forward, but the framework of the collaboration process for this specific class was utilized in

efficient ways.

Conclusions

After looking through the data and analyzing how these innovations were implemented

and whether they were beneficial for the classroom or not, I feel that there are a lot of iterations

that need to happen next time. I wonder if there were too many changes to the classroom at

once? When thinking through this innovation and the multiple moving parts of it, it may have

been too complex for this setting. When students were given the roles to choose from, they were

allowed to pick which one they would want, which made me think that they would want to

become that role, but unfortunately this was not the case. However, the intention of getting

students to talk to each other to come up with answers or solutions to a problem was present in

the implementation. Since students were set up in a structured way to collaborate with each other

by setting them in groups, this enhanced the collaboration process and allowed students to talk to

each other rather than having the agency within the teacher guiding the instruction, questions and

discussions. Although some of the groups felt uncomfortable, the other ones that did not, embraced this activity and showed engagement in it and liked getting to know their team members through the journal prompt and the commonalities between them and the other students in the class. In the future, there would need to be adjustments to this, but I feel with practice and more exposure to activities like this, it will be able to build a sense of motivation and agency within this classroom space.

References

Benichou, M., Kali, Y., & Hod, Y. (2023). 13: Teachers' Expansive Framing in School-Based Citizen Science Partnerships. In *Teacher learning in changing contexts perspectives from the Learning Sciences* (pp. 256–257). essay, Routledge.

Deci, E. L., & Reeve, J. (2008). 9: Self-Determination Theory Applied to Educational Settings. In Handbook of self-determination research (pp. 183–203). essay, Univ. of Rochester Press.

High school dropout rate is decreasing but race, income & disability issues persist. Research.com. (2023, April 4). Retrieved April 13, 2023, from https://research.com/education/high-school-dropout-rate

Kusurkar, R. A., Croiset, G., & Ten Cate, O. T. (2011). Twelve tips to stimulate intrinsic motivation in students through autonomy-supportive classroom teaching derived from self-determination theory. Medical Teacher, 33(12), 978–982. https://doi.org/10.3109/0142159x.2011.599896

McKenney, S., & Reeves, T. C. (2019). *Conducting educational design research*. Routledge, Taylor et Francis Group.

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Meet the padres / mission & vision statement. Meet the Padres / Mission & Vision Statement.

   (n.d.). Retrieved March 15, 2023, from https://www.tempeunion.org/Page/230

Sandoval, W. (2014). Conjecture mapping: An approach to systematic educational design

   research. *Journal of the Learning Sciences*, *23*(1), 18–36.

   https://doi.org/10.1080/10508406.2013.778204