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Creating Innovating Spaces in the Classroom

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Creating Innovating Spaces in the Classroom

How might we create a physical environment in a classroom that will promote creativity?

An abstract of a project in

Creativity and Change Leadership

by

Lindsay M. Chaples

Submitted in Partial Fulfillment

of the Requirements

for the Degree of

Master of Science

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Buffalo State

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Department of Creativity and Change Leadership

Abstract of Project

This project is about how the setup and physical furniture of a classroom can promote creativity in the environment of the classroom. Students in today's classrooms should be able to use the Creative Problem Solving (CPS) techniques in a classroom and not be hindered by the design of the physical environment. Some physical design elements for a classroom that promote creativity are having flexibility with movable furniture, simple designs, separated spaces, and which can also be enhanced with healthy movement. By adding these elements, we as teachers are creating a space that will lead to more creativity, collaboration, and cooperative learning. The purpose of this project is to look at different furniture options to promote and foster creativity. Overall, to promote creativity and to show others that the setup of a classroom does have a big impact on students' success and creativity. To create a space where creativity is welcomed from the student walking through the door. To transform a traditional classroom into a collaborative and active learning space for students to foster creativity. As curriculum is changing, furniture, design and the layouts of the classrooms should also be changing to meet the demands of modern form.

Key words: creativity, collaboration, cooperation, classrooms design, furniture, elementary classroom

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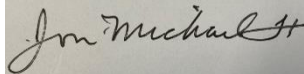
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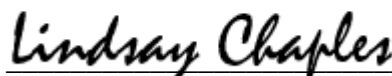May 2022

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SECTION ONE: BACKGROUND TO THE PROJECT

Purpose and Description of Project

Creativity is a major push for 21st century learning, so why not start with our students' education and design of the classroom. This project focuses on what classrooms' physical environment and design will look like to promote collaboration to enhance creative thinking skills. Students in today's classrooms should be able to use the Creative Problem Solving (CPS) techniques in a classroom and not be hindered by the design of the physical environment. This should be showing students that they do have a space to be creative, as it provides a simple repeatable way for groups to make new challenges and come up with effective solutions (Vehar,1997). Some ideas of physical design elements for a classroom that promote creativity are having flexibility with movable furniture, simple designs, separated spaces, and which can also be enhanced with healthy movement. By adding these elements, we as teachers are creating a space that will lead to more creativity, collaboration, and cooperative learning. The purpose of this project is to look at different furniture options to promote and foster creativity. My goal is to promote creativity and to show others that the setup of a classroom does have a big impact on students' success and creativity.

I want to create a space where creativity is welcomed from the student walking through the door! My project goal is to transform traditional classrooms into collaborative and active learning spaces. As curriculum is changing, furniture and the looks in the classroom should be changing to meet the demands of modern form.

Rationale for Selection

The setup of a classroom can change the feeling or environment of the classroom. Designing a classroom into a creative classroom space has always been a passion of mine. Different stores, restaurants, and homes are changing to fit our new 21st century innovation style, so why not our classrooms. As a teacher, I do not see much changing with designs of a classroom but see a need for it. With choosing Creativity Studies at SUNY Buffalo State, I have found the drive to see how we can take steps to foster creativity with our environment designs. In a previous class, I worked in a group and created a Likert scale that focused on asking others what type of physical space makes them the most creative. The results were intriguing, and I wanted to know more about how different environments can foster our creativity. Including the literature search, I have been working with different design furniture companies and design teams to see what they have found in collaboration with the school environments. The overarching question is, how might we design a classroom that will foster and promote creativity? This project provides different categories to consider when designing a classroom. One of my major focuses is on collaborative spaces – this is due to the inverse of a traditional classroom layout which doesn't provide this.

As teachers, we want to create an ideal learning environment for all learners. Creativity and learning are both skills that can be adaptable to different situations. Both have a focus on flexibility and movement. The set up and physical design of the classroom are important in building that flexibility. This will have a positive impact to make learning in the classroom come together to be engaging and build curiosity.

SECTION TWO: PERTINENT LITERATURE AND RESOURCES

A Look Around

As we walk into a space the first thing we notice is what is around us – our surroundings. A physical arrangement of the classroom can send an immediate message to the students or show the role of independence, choice, and creativity in the class. Our brains and bodies are stimulated by what we see and how it makes us feel. Students need a secure space in which to create – a creative, friendly classroom (Starko, 2021). Our classrooms should show flexibility and collaboration throughout. As proposed by Beghetto and Kaufman (2017) the most difficult part of enrichment learning, and teaching is getting teachers to stop teaching and to become facilitators of learning – the proverbial "guide on the side" rather than the dissemination of information. So how does the environment play a role in this? Can we build more collaboration spaces and make teachers move into the facilitator's role? We can start with small moves in the set up and physical space of the classroom. The overall goal is to make the environment flexible, comfortable, and engaging to the classroom itself.

Preschool Imaginary Play and Collaboration

We can start by looking at what we see in the classrooms today, with comparing a preschool classroom to what you see in a 5th grade classroom. The set up and environment tend to look different through the years, but why? Why don't we still have centers or areas to distinguish different types of learning? The preschool classroom is usually set up into different sections designated for different scenes or imaginative play. Some may include a kitchen center, library, calendar, rug, blocks, Legos, and/or a puppet area. The tables may be arranged into groups without name tags or seat assignments. The preschool classroom is set up to promote

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movement or imaginative play through specific centers or tables. Walking to a 5th grade classroom, we see rows or groups of four. A whiteboard in the front of the room, with assigned desk or name tags to label seating arrangements. Why is it then when compared to an upper elementary level we see more rows or basic groups of four students? Does that promote collaboration and creativity? No, almost the inverse promotes individualized learning or conformity. This classroom environment shows how students may be hindered to move and collaborate with others. It may not be promoting or focusing on collaboration. Teachers and leaders need to break the stigma of collaboration vs. cheating. Many times in the classroom, when students are talking, collaborating, or asking questions from peers that is looked at as cheating (Robinson, 2007). Teachers should be promoting play and collaboration in the classroom. This can start and aid with the physical design and set up for the environment.

Learning Spaces

A learning space is not only set up for one goal but also multiple learning goals and styles. It should be flexible in the face of changing needs for the classroom. The learning space should be able to motivate learners and promote learning as a group. It should support collaborative dialogue/learning as well as formal practice (JISC, 2006). It is essential to look at the vision and goals for the students in the classrooms and their creativity gains. Many schools and cities are looking at more of a modernizing approach to collaborate with the current changes in technology and pedagogical approaches. It is not only about how the arrangement of the class is, but what we are doing within it. How are the schools building better collaboration? How might we as teachers promote collaboration with their modular seats, fidgets, and furniture with wheels?

Spaces Inside Our Environment

Ewan McIntosh (2017) turned the information that Matt Locke originally came up with into the concept of the "Six Spaces of Technology" and turned it into the spaces in a school environment. He shows how "secret spaces" that are represented in technology such as text messaging by communicating with one person are not accepted in schools. This connection to the cell phone is connected to the physical space which can be represented by a chair in the classroom. In addition, as in a traditional classroom where students are usually in rows or when a group of four students are limited to their discussion or are forced to be in a secret space. In these groups, students are usually too far apart from each other to have a close conversation with each other. He mentioned that taking advantage of fidgets or "Hokki Stools" would help one to sway or share their ideas with each other. These stools would encourage students to lean in with someone next to them or to collaborate with their learning. This form, and others of modern furniture, are becoming more and more popular in schools. He mentioned group spaces in schools, incorporating the community around us. This is something that is seen at Stanford d.School. Using furniture that incorporates all movable spaces. In this space, you may see dynamic spaces or modular furniture that are on wheels. If you need a discussion area or a secret space, you can build it. In a traditional classroom, usually students have one open learning area, which then students need to compete to be heard or talk louder. Having these smaller areas for discussion can promote collaboration and flexibility. Having longer divided spaces or whiteboards can also add this effect in larger rooms.

Ewan McIntosh connects "performance spaces," to an environment in schools to show that play can occur in more than just at the playground but everywhere. Some classrooms today

use the makerspace model or area to add this into a classroom. The process of collaborative learning therefore sheds insight into the mechanisms that cause the design of the classroom to promote an innovative environment. Ewan looks at the whole environment in his community for all learners; not one for students but for teachers, parents, and the community (McIntosh, 2017).

Cooperative Learning to Collaboration

Cooperative learning is considered a group of instructional methods wherein a small group of students work together and have interaction in completing target tasks. This can only happen if we move towards the classroom environments that promote this style of learning. This discussion and learning environment can be fostered in a classroom where it is set up for discussion. Slavin's (1995) model of cooperative learning shows that when students have the motivation to learn and apply the power to encourage and help one another. In doing this they then can reach cognitive development which helps them to better cooperate in the language classroom. This can also be effective by the design and set up of the classroom. Teachers are moved into the facilitating role rather than the lecture type of classroom.

According to Johnson and Johnson (1999), working cooperatively helps students to develop their social skills and take control of their learning. This can also help teachers exceeding what is taught in the classroom and having students think beyond a textbook. It appears that adopting a cooperative learning approach in teaching creates an atmosphere for teachers to encourage students to become active participants in the learning process. When students interact, they learn to share opinions, ask questions, and improve their understanding. Teachers should be pushing students to have more dialogue and cooperative learning to guide instruction. Cooperative tasks for the groups should have more than one answer or more than one

path so that one student cannot come up with a solution firsthand. These tasks should allow students to make different contributions by demanding a variety of abilities and skills. We need to focus on advancing educational understanding on how to create a more collective view of space within classroom learning environments. By doing this it will identify ways that educators can support students' creativity and creative experiences in the classroom (Fuss & Daniel 2020).

Promoting Creativity in the Workspace

Research has looked at what promotes creativity in the workforce and found that one area to focus on is having construct environments (McCoy,2005). If you want the organization to become more creativity and innovative--three categories are looked at: people, culture, and space. Physical space is usually the companies second largest expense and is often under-utilized (McCoy, 2005). I agree with this statement and see the same effect in school in the United States. If we want to create classrooms that are more innovative and creative, we do need to change the physical look of the space. To help with this, the classrooms must enhance the layout for interaction and collaboration. Creativity is also built and seen in unseen areas, not a designated meeting room or desk. It is said that 0% of these encounters are planned and do not take place in meetings. The best office spaces are ones that are flexible and allow for encounters. This is also why areas on campuses or work offices may have engaging breakrooms or lounges. A simple way of promoting creativity and the community is to put individuals closer together, it has been shown that proximity increases that chance of collaboration (Sayiner, 2015).

Conclusion

The key term used in all literature in a creative space is having flexibility and collaboration. Having a space that can change and adapt to different situations will foster and promote creativity. Providing welcoming and flexible spaces, including informal meeting spaces, should be seen as part of the support to learning through developing the wider learning landscape. It is said in the workforce that each person is most efficient when the space matches their preferences and expectations of a creative space (Puccio, 2000).

SECTION THREE: PROCESS PLAN

Plan to Achieve Goals and Outcomes

My major goal of this project is to research how changing the physical environment in a school can promote creativity, to transform traditional classrooms into collaborative and active learning spaces.

This project will give me the time and background information a future goal of writing grants for schools. this project will lend time for researching and looking into different school furniture companies, I want to find the best ways to collaborate and promote more of the creativity skills in the classrooms. In my teaching career, I have been mostly a traditional setting of a classroom where rows and desk faced forward. This formation does foresee the growth in creativity of curiosity, collaboration, and flexibility. I want to overall collect this research to write grants or proposals to change the physical environment of traditional classrooms. I would also like to propose new furniture looks to board members at my kids' school or even my own classroom. I know there is a lot of benefit to what the classroom looks like to promote learning and creativity.

My other goal was to collect feedback from the students, teachers, administrators in the schools. To questions and ask what they would ideally like to see in the classroom physical environments. This was done by interviews and online forms. I contacted different design companies that work with schools and spoke to their design teams. Asking specific questions on how the design teams work with schools to incorporate flexible furniture options. Focusing on how companies promote creativity and cooperative collaboration within their designs for schools. I was interested in finding out any new styles or designs that schools and or designs teams see for our future in the classrooms.

Focusing on specific research

Final Sections on:

-Space and Flexibility

-Collaborative Spaces

-Healthy Movement and Promoting Play

-Natural Lightning/ Color theory

-Compare new designs vs. old designs of classrooms

Companies and design teams to work with:

Eco friendly Furniture

Smith Systems

Hertz Furniture

Virco - 21 Century Furniture

School Outfitters

SECTION FOUR: OUTCOMES

After speaking with and collection data from different furniture and design companies, I have found that the new styles for in the classrooms focused on different variety of colors, heights, and flexibility. Most of them included a section on a type of 21st Century Furniture or layouts. Not all companies used the same terminology, but I did find that it connected to CPS with using the terms of collaborative spaces, or flexibility. These spaces were making an area in the classroom where innovation and creativity can blossom. This is correlates from a model of creativity that includes an environment in which creativity can emerge, often collaboration (Starko, 2020).

One company that I focused on more of the modern designs and went in the direction of 21st Century designs was VIRCO. They had many different arrangements where the height level varies in one room. For instance, some students would have floor seating and middle range traditional seats and then standing tables or high-top seats (See Appendix A for an image an example the room)."Adding inspiration to your environment" and "inside and outside the classroom it's all about modern form," are quotes from the Virco website. It connects by saying that every environment can be changed and added to make it better. Graetz and Golbier (2002) state that "desks arranged in rows facing a central podium suggest lecture, whereas tables scattered about the room suggest collaboration."

Heathy Movements

Heathy movements are a way of the future for inside the classrooms. Now as a teacher that might like structure, we do not want this to be distracting to others but stimulate the minds of young learners. So, one might ask, what is heathy movement? As young learners, their brains

require various types of motion to develop foundational skills for learning. Some examples that show this in the classroom that are research programs that include but not limited are Kagan strategies (Kagan, 2009) "Modern classrooms offer more potential points of focus than in the past. From teachers to electronic whiteboards, collaborative pods to tablets and traditional notebooks, students face more demands on their attention than ever before. Given the pace at which technology and curricula are changing, the wisest furniture choice is often the most flexible" (Virco.com). This is true in the modern ways of flexible seating. Companies have rocking furniture to bikes that an iPad can sit on, that students can geta workout and learn. Healthy movement refers to safe and accessible opportunities for motion that help everyone feel organized, alert, fit and ready to learn. If we think about what teachers and parents want, students to sit still in their desk—we are not given the students bodies time to be active. We need to find ways on classroom to provide that stimulation of heathy movement, which that is the way of the future.

I find it sad that on some on their websites it would labelling a specific part of traditional classroom where the furniture is in single seated rows. If we sit still for a long period of time our bodies become inactive and we tend to become tired. This heightened with the newer generations—students gravitate toward instate gratification. I believe this is due to the change in video games, social media, and the internet.

Transforming an Older School

Center Grove Community School Corporation in Indianapolis was looking to adapt their schools to fit new learning styles. What began as furnishing a single, newly built elementary school led to creating modern learning spaces in all the district's 180 elementary classrooms.

One of the principals in the district, Brian Proctor(Smith, 2021) said, "In the past few years, we'd been stressing over how to create exceptional learning environments in our older elementary buildings, some over 50 years old. Some issues that they dealt with was looking at the old furniture and lecture-style layouts weren't helping us to teach everyone to be collaborative in a high-tech learning environment. He also gave this example, "A student would push a desk, it'd catch on the rug, flip over, and stuff would go everywhere." This was a tradition style desk in a collaborative classroom. The older styles weren't made for that movement The old-meets-new endeavor that they entailed would require proactive planning and a lot of collaboration. This was not an easy process for a school and district. The brainstorming, planning, and decision making took about two years.

The process from the school required having courageous conversations, because as some may know not everyone wants to relinquish control of their space. What emerged was a "need to include list" which is listed below:

1. Accommodate different learning styles, which could include allowing student movement
2. Provide students with more choices and control with personalized seating
3. Open up classrooms to create more space for active learning
4. Support facilitating large group, small group and individual learning
5. Allow teachers to quickly adapt spaces to accommodate newer learning paradigms

The sections the school focused are very similar to my research in the classrooms of building a "Creative Learning Space." Each of the bullets listed here are one that can be used to foster creativity (See Appendix B). This schools then had a design thinking workshop to test out and see the different types of styles used. The teachers were then about to try out and see different

designs like Smith's Flavors Noodle (See Appendix C). The teachers loved the multi-directional seating and the flexible seat pan and backrest. There was a lot that went into this change, and I enjoyed reading how the teachers and faculty worked through the process together (Smith Systems, 2021).

Flexible Seating

Flexible classrooms give students choice over where and how they work. Think about when you enter a café or restaurant, many times you are asked where you would like to seat, or you can pick where you sit. This gives the consumer a choice on what makes them feel the most comfortable. In the classroom, we should be thinking the same way. Could this be a factor in creativity and student progress? Flexible seating is a classroom design that enhances a student-center approach to teaching and learning. This flexible seating idea was designed to increase student engagement by allowing students to exercise choice when picking the best seating option for them. This seating choice allows students to have control over their physical environment.

SECTION FIVE: KEY LEARNINGS

In conjunction to the key aspects for CPS and creativity, there is a connection to the Creativity Change Model. This model is set up into four distinct categories (MacKinnon, 1978). The four main elements are person, process, environment, and product. Each are very distinct, but each are correlated and joined together. Creativity starts with an individual or a team just like we should be doing in the classroom, working together, and having student collaborate more with each other. This should not be hindered with desk or rows facing forward where students are lectured to. Creative does not specifically take place in a one dynamic setting but using a specific setting to stimulate creativity (Puccio,2017). In the Creativity Change Model this is all referred to in the environment—the person and process coming together. Leaders who wish to foster creativity must consider each role in the model.

As school are working towards forming a classroom in the 21st Century must support it because it will be the dominant model of education for the foreseeable future. Collaborative Learning is different than traditional methods in two fundamental ways. First, collaborative learning is student-centered, empowering the student to be an active participant in the learning process. Second, collaborative learning revolves around solving open-ended problems or creating some sort of a "product" which could be anything from a report, a poster, or a video. These projects give the students an opportunity to develop the widest range of learning skills. Even in a small clasroom, you may want to consider arranging the classroom with a variety of work spaces (Starko, 2021). This allows students to work unbdisturbed. Collaberative spaces should be flexible and easily movable.

Creativity can be Taught

President Barack Obama in March, 2009 called for our nation's governors to recognize that students need to have "21st century skills like problem-solving and critical thinking and entrepreneurship and creativity." Creativity is now being noticed and recognized as a skill to foster in schools. Before expanding my knowledge in the creativity field, I believed that artists and makers are only creative. Hearing very often in my classroom, "I'm not creative" followed by "I don't draw or paint, I don't make anything" Now don't get me wrong, artists are creative. So are teachers. So are writers. So are construction workers. So are normal people! I feel that many people are now opening their eyes to this with social media platforms. Everyone can be creative in nearly every aspect of life. Creativity and art might go hand in hand, but it doesn't end there. Creativity is all around us daily, and I see it daily in little things around me. Puccio (2012) considered creativity as "a life skill that must be nurtured in our homes and schools, well before our future leaders reach the workplace"(P.26). As we are more than a decade into the 21st century, it has become abundantly learn that we are experiencing change at a level never before seen in human history. Events and changes are taking place in our country that creativity is welcomed. We need more change and problem-solving skills more than ever. An explanation of the components of creativity: Fluency, Flexibility, Originality, and Elaboration should be given so that when this type of thinking is being demonstrated, parents will be able to recognize it as creative thinking and encourage it (Torrance, 1979).

Playfulness

Play is beneficial not just because it offers the brain a respite from work, adds Brown, who founded the Center for Childhood Creativity and the National Institute for Play

 While teaching and working with different students with different learning abilities that I found that each one is creative in their own way. One of my favorite activities to do in the classroom was working with Keva Blocks. They are small building blocks in all the same sizes. The students would take these out all day long. They loved playing and designing anything form animals, houses, or shapes. (see Image 1).

Innovative schools just like innovative companies need physical design spaces that metaphorically move as needed. It is not by accident that companies such as Google and Pixar focus on creativity (Sarko, 2021). We might not have the funds or space be able to bring zip lines or go carts to schools, but we can make the space more adaptable.

Image 1: Exploring with Keva blocks in the classroom

Curiosity

Creativity is connecting a strong relationship between curiosity to creativity. Curiosity involves the pursuit of new knowledge and experiences. Creativity involves transforming existing knowledge, ideas, or objects into something novel and interesting. When framed in this way, it is easy to see the overlap between the two both revolve around novelty (Gross, 2020). This is seen to me more prominently with teaching 5th graders. If the students don't have that curiosity, they have no intrinsic motivation or they have no new knowledge to push them. As said in, *Thinking Fast and Slow* by Daniel Kahneman, curiosity, the one with the "I" is one of the few moments when the learning experience is not forced, but natural.

Curiosity is a naturally occurring openness to experience that develops in three stages: (1) physiological curiosity, (2) social curiosity, and (3) intellectual curiosity (Dewey, 1899–1924). When curious children go through these stages beginning from poking and observing, to asking questions, to connecting their prior knowledge to the finding (Shankar, 2020). Curiosity is something in my personal classroom I want to keep alive and not be hindered. I want students to still find that nurture to think curiosity and creativity.

We are still hunters and gatherers regardless of what we think about ourselves. Understanding how the brain works allow us to truly observe, empathize, iterate, and finally deploy a new product, an innovation or simply see what's going on (Kashdan, 2002) "I have no special talent. I am only passionately curious." —Albert Einstein, from Letter to Carl Seelig, 1952.

SECTION SIX: CONCLUSION

Connecting back to my original question of how might we create a physical environment in a classroom that will promote creativity? Is there just one answer for this? Just like in the study of creativity, there is not just one answer. As society and the workplace is changing to be more innovative and creative, we need to change our classrooms to adapt to those same goals. Research has shown from Barrett's (2015) study five environmental factors of color, choice, complexity, flexibility, and light were found to have a positive effect on students' learning progression. A "Creative Learning Spaces" should focus on the importance of a child feeling a sense of freedom in the environment—furniture, wall solutions, and technology in the classroom can play an extensive role in the comfort and engagement that a room may provide. Connecting creativity is by having a space where the students can collaborate, brainstorm, and become problem solver together. Students should have a safe environment where it is promoted to connect and discussing with others. The physical design of the classroom can show that is this welcomed by having collaborative layout.

Overall, the key aspects that I will look forward in fostering a classroom to be more creative will be to include five key components: healthy movement, collaboration, flexibility, adaptable space, and active learning.

Heathy movement is needed to stimulate our bodies and brains. This is something that furniture companies are seeing the need for more and adapting their styles to include. Furthermore, schools do not have to have that "traditional" look, human needs are changing and so this needs to be reflected in our classrooms. Collaboration is important in creativity to build off others and listen to others' ideas. Having a flexible classroom will give the students more choice in their seating. Adaptable spaces will give the rooms direct space to separate learning

areas. Flexibility, combined with characteristics like acoustics and air quality, has a real impact on student achievement. If used properly, flexible classrooms produce better academic outcomes among primary school children than more traditional, static classroom designs (Merrill, 2018). Active learning will lead students to problem solve and dig deeper into their understanding. Each of these are all connected to enhance the students to engage more in thinking and problem solving which is connected to their creativity.

My outcome for moving forward in my research will be writing grants for funds to change the designs and layouts to foster creativity in classrooms. I would like to present my information to school districts in setting up a plan for change in the environments for elementary students. In doing this, my goal would be to changing my own classroom and others to become more creative in the physical design and layout.

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Appendix A: Classroom Seat Levels

(Image from Virco.com)
This picture from the company Virco shows how some classrooms are changing to include different furniture with different heights. It also includes a short rocker chair called Zuma Series Floor Rocker in orange. This company has shown different designs with healthy movement in the classroom which can stimulate creativity in students.

Appendix B: A Creative Classroom

Collaberation
Adaptable Spaces
Heathy movement
Flexiblility
Active Learning

THE CREATIVE CLASSROOM

This image is made to link each aspect of my research to the design of a classroom. Each is something I believe will foster to make a creative classroom.

Appendix C: Suspension Chair

THE SEAT PAN TILTS SIDE TO SIDE.

THE SEAT PAN TILTS FRONT TO BACK.

The Flavors® Noodle Chair has a patented suspension below its seat pan that allows it to tilt slightly in all directions. This makes the chair more comfortable than other classroom chairs and also encourages the student to engage his or her core muscles while seated, which promotes better breathing to improve concentration.

Appendix D: Classroom Makeover

This image from smithfurniture.com which it features flexible and moveable seats.

Appendix E: School Furniture Companies

List of furniture companies use in the project along with contact information

Smith Systems- https://smithsystem.com/

Hertz Furniture-ttps://www.hertzfurniture.com

Virco- www.virco.com

School Outfitters- https://www.schooloutfitters.com/catalog/index