

The University of Akron IdeaExchange@UAkron

Honors Research Projects

The Dr. Gary B. and Pamela S. Williams Honors
College

Spring 2017


Educational Learning Environments

Meaghan Rooney 3287247

Froebel College of Education, mrr70@zips.uakron.edu

Please take a moment to share how this work helps you [through this survey](#). Your feedback will be important as we plan further development of our repository.

Follow this and additional works at: http://ideaexchange.uakron.edu/honors_research_projects

 Part of the [Educational Leadership Commons](#), [Educational Methods Commons](#), [Educational Psychology Commons](#), [Education Economics Commons](#), [Elementary Education Commons](#), [Health and Physical Education Commons](#), and the [International and Comparative Education Commons](#)

Recommended Citation

Rooney, Meaghan 3287247, "Educational Learning Environments" (2017). *Honors Research Projects*. 440.
http://ideaexchange.uakron.edu/honors_research_projects/440

This Honors Research Project is brought to you for free and open access by The Dr. Gary B. and Pamela S. Williams Honors College at IdeaExchange@UAkron, the institutional repository of The University of Akron in Akron, Ohio, USA. It has been accepted for inclusion in Honors Research Projects by an authorized administrator of IdeaExchange@UAkron. For more information, please contact mjon@uakron.edu, uapress@uakron.edu.

Educational Learning Environments

Meaghan Rooney

Dept. of Curricular and
Instructional Studies, LeBron James Family
Foundation College of Education

Honors Research Project

Submitted to

The Honors College

Approved:

_____ Date _____
Honors Project Sponsor (signed)

Honors Project Sponsor (printed)

_____ Date _____
Reader (signed)

Reader (printed)

_____ Date _____
Reader (signed)

Reader (printed)

Accepted:

_____ Date _____
Department Head (signed)

Department Head (printed)

_____ Date _____
Honors Faculty Advisor (signed)

Honors Faculty Advisor (printed)

_____ Date _____
Dean, Honors College



Educational Learning Environments

Honors Research Project

Meaghan R. Rooney

Spring, 2017

Abstract

The question of classroom learning environment and how it affects learning has been widely studied. The type of environment in which students learn sparks passionate debate in today's society, since a significant amount of a child's time is spent in a school. . Research confirms that attending school and obtaining an education will teach children to be successful citizens, but what about the environment in which they go to school? If school is what makes the next generation ready to positively contribute to society, then steps must be taken so that each child has an opportunity to thrive. Students in the United States and developing countries across the world deserve the best type of learning environment during schooling to help them reach their highest level of success and lead to a more positive future. This paper overviews the research on learning environments and student achievement and then provides a case study of how one school in a developing country is working to improve the learning environment for its students.

Introduction

Positive learning environments, based on the physicality and culture of the classroom are a critical component for each student's success-- not just in the classroom - but in society. According to the constructivist learning theory, students must be in an environment where they are able to explore, manipulate, experiment, and question (Devries and Zan, 2003). This is not just true of American students, but also students in developing countries across the globe, having a classroom environment that does these things creates a positive learning environment. "According to Bucholz& Sheffler (2009)" The physical and cultural of environment of the classroom is important to overall student learning.

The type of classroom environment that a teacher creates and encourages can either increase or decrease a student's ability to learn and feel comfortable as a member of the class. The classroom environment should do as much to foster cooperation and acceptance as the teaching methods that the teacher uses (Bucholz& Sheffler, 2009, pg.1).

However, it is not just up to the teacher to create a positive learning environment, but also the principal, community, and even the school building impacts student success, according to educators such as Bucholz and Sheffler. A study by the Council for Exceptional Children (2009), has also shown links that supports classroom environment as positive for children's' behavior and in turn their ability to learn.

Problem/Issue

In today's society there is an intense amount of pressure on young people to achieve high grades, perform well on standardized tests, and complete some form of higher education as seen by the author in different education courses. However, learning

may look quite different than many Americans imagine. Noguera and Williams (2010), speak on how poverty and per pupil spending impact the environment.

Poverty does not cause academic failure, but it is a factor that profoundly influences the character of schools and student performance, in some ways; in most cases, considerably less money is spent on the education of poor children. Per-pupil spending has bearing on the quality of facilities, the availability of learning materials, and the ability of schools to attract and retain highly qualified personnel (Noguera & Williams, 2010, pg. 2).

All of these things play a part in the overall environment of the school and how the children are learning. School facilities also impact environment, for example some lack, physical activity equipment, and technology, nutrient dense food for lunch, which are vital for a student to succeed according to The Center for Disease Control (2009). Allowing children to have time to be active and providing healthy meal choices helps children to be physically and mentally healthy (Center for Disease Control, 2009, pg.1). For children to succeed socially and academically, attention must be paid to the entire school learning environment.

Research Question

After completing almost three years of college education courses, as well as working in child care, and completing numerous field hours in schools, the author realized that schools have many different types of learning environments. In some schools one might find strong community support with financial stability which results in a plethora of amenities and opportunities for students. Others receive government assistance, and often do not have enough resources to support these students in the same

ways as students in other schools. The author became intrigued by the impact of learning environments on students from diverse backgrounds and began to further investigate the topic in educational journals.

In addition, the United States Department of Education (2000), provided information how the quality of the school building is linked to student learning and success socially and academically. Finally, a journal article by Bucholz and Sheffler, explains how a positive learning environment fosters good behavior from the students, which leads to the ability for them to better understand and learn. Firsthand experience has also helped the author to gain background information about this research question.

In the spring of 2016, the author went to Jamaica where she worked in a primary school to help build a netball court and refurbish the school building to help improve the physical environment of the school. By completing this research and service project the author will achieve a greater understanding of how different learning environments affect students. Prior to arrival in Jamaica, the author of this case study investigated the role and impact of environment in schooling.

Literature Review

In a review of the literature about school environment, one of the major findings was that the overall structure and design of the classroom contributes to creating a positive learning environment (Bucholz & Sheffler, 2009). Bucholz & Sheffler found that students learn and retain more information in a warm and welcoming classroom environment. They contend that the overall structure and design of the classroom contributes to creating a positive learning environment. It has been shown in the journal article by Bucholz & Sheffler (2009), which students learn and retain more information in

a warm and welcoming classroom environment. The physical environment of a classroom plays a part in the ownership students feel about their school according to the journal article, “Creating a Warm and Inclusive Classroom Environment: Planning for All Children to Feel Welcome” (Bucholz & Sheffler, 2009). The classroom environment should do as much to foster cooperation and acceptance as the instructional method the teacher uses (Bucholz & Sheffler, 2009). Students need to feel that they belong and are safe when coming to school. This security will help them learn, according to Bucholz and Sheffler (2009).

Another key point discussed in the journal article is the idea of specific and repeated classroom procedures. For example, an environment of stable communication, rules, and procedures helps to create a better learning environment for the students. Traditions can help create positive feelings and bond students to their class. Students work together to create a class pledge that is recited every morning before the day begins, or teachers can give students time at the end of each day for a reflective activity (Bucholz & Sheffler, 2009).

The article gives a specific example of this communication in a pledge created by Ms. Fitting from Oysterponds Elementary School. It includes the three Cs: "We will Cooperate, We will Communicate, We will Concentrate, and We will have a Good Day." The teacher says, “The cheer has helped her class to become more positive, hardworking, and has created a classroom culture of respect and collaboration” (Bucholz & Sheffler, 2009, pg. 3).

The United States Department of Education study, “Impact of Inadequate School Facilities on Student Learning,” (2000) states that the classroom environment does matter

in schooling. Most importantly, the study's statistics state that the school and classroom physical condition is directly linked to student behavior and overall learning. The archives for the United States Department of Education have many statistics about the physical building conditions of schools how those conditions affect learning. For example, a study, by the United States Department of Education of the District of Columbia school system found, after controlling for other variables such as a student's socioeconomic status, that students' standardized achievement scores were lower in schools with poor building conditions. Students in school buildings in poor condition had achievement scores that were 6% below schools in fair condition and 11% below schools in excellent condition (United States Department of Education, 2000). Even though the physicality of the learning environment cannot account for everything, this demonstrates that environment does matter in schooling and a well-equipped school building has helped students to perform stronger on assessments.

Further, heating and air conditioning systems, along with special instructional facilities (i.e., science laboratories or equipment) and color and interior painting, also contribute to student achievement (United States Department of Education, 2000). The research shows that proper building maintenance, student resources, and equipment can lead to better attitudes about learning among students, more disciplined students, and overall better learning conditions for students.

Guardino and Fullerton (2010), discuss how changing the environment of the classroom leads to stronger classroom behavior, which enhances learning. These professors conducted a study in a fourth grade classroom about how the environment affected behavior, which turned into how much the students were learning. During the

study, observations were focused on the misbehaviors being done by students and then phase two of the study was making modifications that will allow less of these behaviors and better learning (Cuardino & Fullerton, 2010). Some examples of modifications included, “changing the seating arrangement; creating group space; adding organizational materials such as shelves, and labels; creating clear pathways in areas of high congestion; adding plants and inspirational posters ; and study carrels for each student (Cuardino & Fullerton, 2010, pg.12).

The results of the study showed that when modifications were made to the physical and cultural environment of the classroom students showed less disruptive behaviors, were more on task, and performed stronger on assessments (Cuardino & Fullerton, 2010).

Case Study: Jamaica

Over spring break 2016, the author traveled to Elizabeth, Jamaica in Treasure Beach to work in a primary school called Pedro Plains Primary School. With the help of the group trip leader, Kaye Schendel, and her work through The Jamaica Project and Delta Upsilon Fraternity International, Pedro Plains has been under renovation for the past several years. The author and Ms. Schendel discussed how over the past few years the Jamaica Project has worked to raise donations for school computers for the teachers, replace broken sinks in the bathrooms, and help to provide resources to clean drinking water (Personal Communication, March 16, 2016). The Jamaica Project aims to foster connections, friendship and learning between Jamaican primary schools and partner schools in the USA, according to their website. Delta Upsilon Fraternity partners with the Jamaica Project to work with different Jamaican primary schools. Ms. Schendel and the

members of the fraternity have travelled to Jamaica for almost ten years and have expanded their program. According to the Delta Upsilon Fraternity website, together, they created a program where college students all across the country are given the opportunity to travel to Jamaica and volunteer.

The school is home to a basic and primary school, meaning there is one building with two teachers who are responsible for the preschoolers and kindergarteners. The other building on site is the primary school that is home to six classrooms for students in grades first through sixth. At Pedro Plains there are eight teachers, one principal, and two cooks for about 185 students, according to a conversation between the author and the trip leader Ms. Schendel (Personal Communication, March 16, 2016).

Students who attend Pedro Plains have to pay a fee to attend school. The schooling in Jamaica is not the same as it is in the United States where there is free public education. Fortunately, if a family cannot afford to pay the tuition, members of the community band together and help pay that child's tuition. Also, the dynamic of the day-to-day aspects of school is quite different. In the state of Ohio in the United States, students go to class for about seven hours and have one hour split between recess and lunch, according to The Ohio Department of Education website. In Jamaica the author noticed that the students have a shorter school day and have a morning break to go outside, a lunch break, and then another opportunity to go outside in the afternoon before the day is over.

Pedro Plains was also different in the aspect of technology compared to most schools in the United States. Most schools in Jamaica do not have Smart boards, laptops for students, or other forms of technology for the students to use to enhance their

learning. The elementary school that I attended, and other schools the author has visited during her studies, have white boards, Smart boards, computer labs, and clicker technology that helps to differentiate instruction and engage students. While these are not needed for good learning outcomes, they do aid in teaching students about how to use technology, provide different ways to do interactive activities as a whole class, and allow the teacher to bring different ideas of innovation into the classroom.

The landscape in Pedro Plains is also significantly different than the traditional American school. There is no real playground for recess time, the bathrooms have no lighting, and there is trash spread out all over the property. Lack of proper funding is the primary reason these problems exist at Pedro Plains. The tuition money that is paid by the families is used for teacher's salaries, school lunches, and basic upkeep and supplies for the classrooms. Overall, the school environment of Pedro Plains is quite different than the average American public school.

Lighting plays a key factor to a positive classroom environment (United States Department of Education, 2000). The lighting at Pedro Plains was extremely dim and the windows were usually covered with wall art because of lack of space due to such a small room size. In the United States teachers try to have well-lit rooms, often time with fluorescent lighting and many windows that allow for natural light, according to observations done by the author.

A recent study done by *The Optics Express*, states that “dynamic lighting can support students’ performance in classrooms” (Choi and Hyeon-Jeong Suk, 2016). The article discusses how the Korean researchers, characterized lighting by measuring their CCTs — or different correlated color temperatures — from “warm” to “cool” using the

Kelvin scale. In the study of fourth grade classrooms, the students were taking math tests. One classroom was equipped with LED lights that could be tuned to CCTs of 3500 K (which is a “warm” yellowish white), 5000 K (neutral), and 6500 K (a “cool,” bluish white that mimics natural daylight). The other classroom had standard fluorescent lighting and served as a control group (Choi and Hyeon-Jeong Suk, 2016, pg. 3). The results showed that students in 6,500 K room scored higher and that warm light provided a more relaxing environment for learning and helped the mental state of the students (Choi and Hyeon-Jeong Suk, 2016, pg. 5). At Pedro Plains if more resources were available the lighting could be upgraded and the windows would not have to be somewhat blocked off due to lack of wall space. Pedro Plains lacks the resources to be able to provide the type of lighting described in the previous studies.

Lack of space in the classroom is another factor that can lead to a poor learning environment for students, according to the teachers at Pedro Plains Primary School. One room is used for each grade and every subject is taught in the one room. At the front of the room is a small desk for the teacher and a chalk board. In all of the rooms the setup of the desk was basically the same in terms of the desks lining in horizontal rows facing the chalk board and no room to shift if needed for group work or other types of activities. A new type of seating arrangement can have a noticeable impact on the success and motivation of the students in a class. Grubaugh and Houston (1990) write that the manner in which desks are arranged and capable of being able to move around to participate in different types of activities leads to greater productivity in students.

In addition, Cuardino and Fullerton (2010) write that the way which desks are arranged and how the classroom is set up overall can lead to less behavioral problems and

an improved environment for learning with less distractions. Pedro Plains does not have this luxury and the teachers have said that it has had a negative impact on the success and productivity of their classrooms. The teachers are not allowed to do as much group work as they would like due to lack of resources and space, meaning students lack skills in creativity, teamwork, and cooperation.

However, The Jamaica Project and The Delta Upsilon Fraternity International are working to rid these problems and provide Pedro Plains and other local Jamaican schools the needed resources to foster positive classroom environments. Together they are working to bring in groups of volunteers every month who will donate money, resources, and work to improve the physical building structure of the school and form relationships with the students.

Building the netball court stadium seating at Pedro Plains involved the work of the faculty, principal, five day laborers, and The University of Akron leadership group that attended the spring break service trip. The principal of Pedro Plains, Mr. Smith has been there for many years and explained to us the crucial need for the netball court, seating, and classroom upkeep. He explained how the students have no sports teams, clubs, or after school activities. The addition of the netball court is to help bring the students and community together and to bring unity to the city of St. Elizabeth. The netball court costs thousands of dollars to make and many grueling hours of intensive labor to finish. When the group arrived it was complete. The students kept asking us if the group had netball courts, if the group liked their netball court, and when the seats would be done so they could play and watch their friends after school. The author noted the excitement and sense of community that seemed to be related to the construction of

the netball courts. The author felt that this net ball court created a sense of community for the students and improved the overall culture of the school; in turn creating a more positive culture and climate for the students to learn in.

In an interview (March, 2016), Principal Smith described the work that The Jamaica Project and Delta Upsilon Fraternity International have accomplished has positively impacted the environment of his school and the attitude of his students. The most important aspect that Principal Smith discussed with the author was that the netball court creation has led to much less classroom management and student behavioral issues in the classrooms. He believes that this is because the netball court has allowed the children to have somewhere to play during their free time, recess, lunch, and after school while they wait for public buses. The new area of play lets the students release energy that builds up during the day from sitting in class for long periods of time. A child's attention span is quite short so having a place where they can run around, play netball, and bond with their peers allows the students to have more balance during the school day between learning and play.

Principal Smith explained that the new netball court and stadium seating has allowed his students to feel more involved and united as a school community because the game brings them together. Exercise, play, unity, and community has brought together the students of Pedro Plains Primary School and created a more positive and better-behaved classroom. In follow-up interviews Ms. Schendel has reported to the group that the students love playing on the netball court at playtime and Principal Smith continues to rejoice in the improved behavior from the students, since the netball courts construction (Personal Communication, August 24, 2016). Overall, having somewhere to play and

exercise has shown that environment, even the environment outside the classroom is important in schooling.

Classroom environment among the rooms of Pedro Plains has suffered greatly in the past. But as of recently, with the outside help and volunteers, has improved greatly. Classrooms can be set up in a way that stifles creativity, or does not promote a positive learning environment. According to Cuardino & Fullerton (2010), some examples of classroom arrangements that do not promote a positive learning environment are students desks that face windows outside and cause distractions and arrangements where the students are unable to move desks to work in collaborative groups (Cuardino & Fullerton, 2010, pg.10). Pedro Plains had desks that were bolted to the ground and made moving the desks impossible for group work.

Many factors contribute to the overall effect of a child's learning environment. There are physical elements such as wall art, arrangement of desks, or resources. Pedro Plains classrooms do have wall art that ranges across all subject areas but, the art is made from paper, stickers, and faded markers. The wall art is worn, torn, and faded because Pedro Plains does not have as many resources as American schools. This creates a learning environment that is not as organized and does not foster as much creativity as the teachers would like to promote in their classrooms. The classroom should be organized, full of color, and have posters that are motivating and give students a sense of purpose (Bucholz & Sheffler, 2009).

Another main concept that affects classroom environments are factors that the teacher cannot directly control, like temperature, lighting, and space for seating arrangements. Jamaica's hottest months of the year are March through June, which is the

heart of the second semester of schooling. The temperature ranges from 80 to 95 degrees daily and Pedro Plains cannot afford air conditioning for their building.

According to Environmental Protection Agency special achievement award winners, temperature makes a difference in learning (Association for Learning Environments, 2016). Within this study, the authors put room temperature to the test. “The room was made hotter by heating the room by placing hot plates around the room. To cool the room, the windows were opened and ice was placed in the sinks. The results of the first test showed that test scores between the different rooms kept at different temperatures were not significant, so they did the test again” (Association for Learning Environments, 2016, pg. 2). The second set of results showed that attention span was greatly affected by temperature, which led to lower test scores of rooms that were too hot or cold. The study suggests that, too warm of a classroom can make students sluggish or inattentive. The heat can make them extremely sleepy or dehydrated and unable to focus on the task at hand.

Also, poor circulation of air can create dust or air pollution that can affect students’ allergies. Most of the school grounds consisted of exposed dirt, rather than grass or other vegetation. This caused an excessive amount of dust within the classrooms. Principal Smith noted that if the school had the resources to install air conditioning and plant new fresh grass he would, but for now the staff and students must use fans and work to keep the dust to a minimum in the classroom.

In addition to creating stadium seating for the netball court, the Global Leadership Experience Team from The University of Akron worked to refurbish two classrooms and the principal’s office. These three rooms were all that could be done in the short amount

of time that we were at Pedro Plains. Refurbishing the classrooms consisted of a deep cleaning of the walls and floors so we could begin painting with a fresh yellow color to brighten up the rooms. While deep cleaning the group threw away a significant amount of trash and food wrappers that students had thrown in the corners of the room because the sanitation system in Jamaica is subpar. One of trash dumpsters was overflowing, so the students had no other choice in the matter. Also, there was a great deal of bugs that had to be sprayed and removed from the walls and floor corners. Principal Smith told us that a deep cleaning had not been done in about two years and that the walls had not been painted in almost 10 years.

The painting of the classrooms involved using donated brushes that were quite small, so the job took a great deal longer. Rollers were too expensive to purchase. The school spent two full days painting the three rooms in two coats of bright yellow latex paint. The group was trying to create a cleaner and inviting environment in which the students could learn. In most developed countries, the painting of the school buildings is done by a hired and experienced company that follows strict safety regulations according to personal communication the author has had with education professors. In Jamaica, schools appeared to lack the safety protocols found in American schools. Upkeep of the schools was not a regular occurrence.

The new fresh coats of paint we hoped would brighten and liven up the classrooms for the students and bring in a new sense of determination. Principal Smith and the teachers were so excited about having new paint and to have their school look clean and updated. In the past it just was not possible due to lack of funds to hire a janitor that could come clean every day. Principal Smith and the teachers felt that the new clean

classrooms with fresh paint would create a positive learning environment for the students for many reasons. They believed that the new environment would help keep the students more engaged, safe, and most importantly, make them feel important.

The group ended up completing the netball court stadium seating, new paint in some of the classrooms, and working to improve cleanliness of the overall school grounds. Research by Bucholz & Sheffler, The Ohio Center for Disease Control, and others have suggested that all of these factors play a role in fostering a positive environment for students. The group hopes that this new look of the school grounds could improve the overall learning environment and success of students as research the suggesting.

At the conclusion of the study, one-fourth of the classrooms had been painted. In the future, the school planned to have more outside assistance from other groups to continue the work that had been started with the goal of achieving all of the rooms being painted and cleaned. Hopefully, this will mean that every student will have the opportunity to learn and succeed in a clean and updated classroom.

Conclusion:

As a future educator it is eye opening to see the different types of ways in which schools and teachers facilitate learning. The author has learned that the most important factors when it comes to schools being successful is funding and resources. The students in Pedro Plains lacked resources such as lighting and air conditioning and many other key factors that can possibly improve a more positive learning environment.

Educational learning environments have been shown to effect learning. From the United States to Jamaica, the environment does matter in schooling. The classroom

environment plays a crucial role in keeping the students engaged and fostering them to be successful. Pedro Plains might not have all of the factors of a successful learning environment, like lighting, temperature, space, and organization, but it is taking steps in the right direction to change. Results of better classroom management and students' behavior have already been noted by Principal Smith and the teachers, since the creation of the netball court for recreational activity. The new painted and clean rooms will likely improve the attention of students and their engagement, due to research in this area. A positive environment in classrooms can create a long lasting effect in schooling.

References

- Bucholz, Jessica L. and Julie L. Sheffler. (2009). "Creating a Warm and Inclusive Classroom Environment: Planning for All Children to Feel Welcome." *Electronic Journal for Inclusive Education* 2 (4).
- The Center for Disease Control. (2009, August). Youth Physical Activity: The Role of Schools . Retrieved March 10, 2017.
- Devries, B., Zan, B. (2003). "When children make rules". *Educational Leadership*, 61 (1): 64-67.
- "Global Service Initiative." Delta Upsilon International Fraternity. N.p., n.d. Web. 9 Mar. 2017.
- Grubaugh, Steve and Richard Houston. (Apr, 1990), "Establishing a Classroom Environment That Promotes Interaction and Improved Student Behavior." *The Clearing House* 63 (8), 375-378.
- Guardino, C. A., & Fullerton, E. (2010). Changing Behaviors by Changing the Classroom Environment. *TEACHING Exceptional Children*, 42(6), 8-13.
- Kyungah Choi and Hyeon-Jeong Suk, "Dynamic lighting system for the learning environment: performance of elementary students," *Opt. Express* 24, A907-A916 (2016)
- Minimum Hours and What Hours Count. (2016, June 29). Retrieved March 14, 2017, from <http://education.ohio.gov/>
- Montano, J., & Perez, J. (n.d.). *Room temperature and its impact on student test scores* (Rep.). Retrieved March 13, 2017, from Learning Environments: Enhancing the Classroom Experience website.

United States Department of Education. (Apr, 2000). Impact of Inadequate School Facilities on Student Learning.

Williams, J., & Noguera, P. (2010). Poor Schools or Poor Kids? Joe Williams To some, fixing education means taking on poverty and health care. *Education Next*, 1-8. Retrieved March 14, 2017.