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Flexible Learning Spaces: Their Optimal and Creative Use to Work Towards Education for Sustainable Development (ESD) in a Small Private Inclusive School

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Abstract

This ethnographic case study seeks to understand how flexible learning spaces influence learners with and without needs in the cognitive and socio-emotional transactions integrated in their daily school routine. Specifically, this study focuses on flexible learning spaces crafted by and for learners with or without needs in an inclusive setting and its influences in thematic, cross-curricular lessons. The researchers employed observations, interviews, student portfolio, family

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feedback sessions, and home visits. The following were the recurring themes that emerged: 1.) utilization of the school's natural building structure and spaces to produce sensory-rich learning manipulatives in order to teach science and math concepts (e.g. angles in doors, multiplication through floor tiles, etc.), art, history, and life skills while adhering to the ESD (Education for Sustainable Development)-aligned educational program of the school; 2.) family engagement is strengthened; and 3.) an evident school-wide culture of creative collaboration among learners with and without needs.

Keywords: Flexible learning spaces, education for sustainable development (ESD), sensory-rich learning, science and math concepts

Introduction

Twenty-first Century learning environments are envisioned as places where the learner is engaged in self- directed and cooperative learning activities and the physical environment is planned so that it can be routinely re-organized to mediate learning *(Partnership for 21st Century Skills, 2002)*.

There is reasonable evidence across a number of studies that the space within a classroom or workshop should be capable of being used flexibly to promote pupils' creativity *(Addison, Burgess, Steers, &Trowell, 2010; Bancroft, Fawcett, & Hay, 2008; Jeffrey, 2006)*.

However, not all educational institutions can provide such an environment. In the Philippines, it is well known that basic school facilities are found to be inadequate and insufficient, with various media reports describing the dire situation at the start of every school year *(Miralao, 2004)*. As of November 2016, DepEd data showed shortages that the agency is yet to meet: 13,995 classrooms; 88,267 teachers; 235 million instructional and other learning materials; 2.2 million school seats

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for 2016 and 66,492 sets (each set with 45 seats and 1 teacher's desk); and 44,538 computer packages. The lack of learning needs has become a burden not only to students but also to teachers (*http://bulatlat.com/main/2017/06/06/new-school-year-old-problems-k-12-shortages-classrooms- teachers/*).

So, for schools that lack classrooms, does it mean that not meeting the prerequisites of the ideal flexible learning spaces will be their perennial problem? Unless we change the mindset that *"the only space for learning is inside the classroom"*, we can never achieve the 21st Century learning environment.

Background

MindHaven School, being a not-for-profit institution, has always faced financial constraints and the challenges that come with them. Limited by its small school building and grounds but driven by its mission-vision, the school implemented its Flexible Learning Spaces set-up. Guided by the principles of brain-based approach to learning and teaching, the school opted for an architectural design that was crafted primarily by the teachers and the learners, with the support of the parents, to stimulate, enhance, influence, support, and accommodate the diverse cognitive and socio-emotional needs of all learners.

The learning spaces were embellished and decorated in ways that align with the various "Themes of the Month" to meet the core-standards of the DepEd K-12 Program for each Grade Level. Afterwards, other elements of Education for Sustainable Development (ESD) were integrated into

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utilizing these spaces as learning environments and as tools which help facilitate and develop creativity and student competencies, both academic and socio-emotional.

Moreover, in the school's aim to achieve ESD, "learning environments" were taken to extend beyond the physical architecture of the space in which learning takes place *(Dudek, 2000)* to encompass psychosocial and pedagogical features *(Fraser and Fisher, 1982; Roth, 2000)* and to include the influence of places and people outside the school. Consequently, the Home, the School, and the Community were all enlisted by MindHaven as learning environments.

Theoretical Framework

This ethnographic study sought to contend with the *"the only space for learning is inside the classroom"* mindset by presenting how a small inclusive school that follows the principles of age-appropriate inclusive education came up with flexible learning spaces for learners with and without needs.

Several child development theorists emphasize that play is a natural way of learning and is necessary for cognitive, social, and personal development *(Piaget, 1964/2003; Vygotsky 1994)*. Play is a dynamic process that develops and changes as it becomes increasingly more varied and complex. It is considered a key facilitator for learning and development across domains, and reflects the social and cultural contexts in which children live *(Christie, 2001; Fromberg, 1998, 2002; Hughes, 1999, in press)*.

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According to R.N. Caine and G. Caine's Brain/Mind Learning Principles No. 9 and No. 12, we have at least two ways of organizing memory--- special and rote--- and that every brain is uniquely organized, therefore, it is essential that we recognize that "real learning is about making connections, higher-order thinking, and creativity."

Studies suggest that "interacting with nature can help children pay attention, motivate them to learn, and improve both classroom behavior and scores on standardized tests. Neuroscientists and psychologists are investigating why nature is good for young brains and how being around trees and shrubs helps recharge the circuitry that children use to focus on a page of fractions or a spelling test." Several studies have found that contact with nature may reduce symptoms of Attention Deficit Hyperactivity Disorder (ADHD) in children *(Van Den Berg, A., & Van Den Berg, C. A.)*.

Furthermore, Carl Rogers suggested that experiential learning is "self-initiated learning" as people have a natural inclination to learn and that they learn when they are fully involved in the learning process *(https://www.brookes.ac.uk/services/ocsld/resources/theories.html)*. Learners of all ages are more motivated when they can see the relevance and usefulness of what they are learning and how they can use this learning to do something that has an impact on others--- especially their local community *(McCombs, 1996; Pintrich and Schunk, 1996)*.

Participants

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The key participants, who were casually observed and interviewed throughout the course of the study, were 6 learners/students with ages 7-8 years old, with and without special needs. The secondary participants were 4 teachers and 6 parents (1 father and 5 mothers) of the said 6 students. Participating adults represented a broad range of capabilities and were exposed to the inclusive education system. All 4 teachers were female and worked on a regular basis in the school.

The participants were chosen for they were particularly useful in the context of the study and are the major stakeholders involved in designing, giving, receiving, and administering the program being deliberated (Given, 2008).

Cases

Child: Matt, 8 years old, diagnosed with Autism Spectrum Disorder and language and cognitive delays. He is in the inclusion program, with pull-out sessions.

Parents: Virgie, 35 years old, a full-time mother, and Luis, 43 years old, a teacher.

Child: Xander, 8 years old, diagnosed with Intellectual Disability. He is in the inclusion program, with pull-out sessions.

Parents: Lauren, 36 years old, an employee, and Paul, 38 years old, an employee.

Child: Kent, 8 years old, diagnosed with Attention Deficit Hyperactivity Disorder. He is in the inclusion program, with pull-out sessions.

Parents: Sheila, 32 years old, a teacher, and Nelson, 38 years old, a merchant marine.

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Child: Seth, 8 years old, diagnosed with Autism Spectrum Disorder and socio-emotional gaps. He is in the inclusion program, with pull-out sessions.

Parents: Grace, 37 years old, a full-time mother, and Francis, 40 years old, a businessman.

Child: Addam, 8 years old, a regular student.

Parents: Irene, 45 years old, a pediatrician, and Francis, 48 years old, a businessman.

Child: Cyan, 7 years old, a regular student.

Parents: Mercy, 32 years old, a full-time mother, and Nilo, 38 years old, a merchant marine.

Setting

This study took place in MindHaven School Inc., a small, private, and not-for-profit inclusive school in Roxas City, Philippines. The school has been continuously permitted to operate since 1993 and was nationally recognized in 2003 for Pre-School and in 2007 for the Elementary Level. The school has 16 teachers and provides services to 132 children aged 1½ -13 years old. Parent Education Program, Paraprofessionals'/Caregivers' Trainings, and In-Service Personnel Development are part of the school's services. The school provides special education services and refers related services.

The school's brain-based, play-based inclusive curriculum integrates principles from the latest in education research such as, among others, Multiple Intelligences Theory, Whole-Brain Learning,

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Learning Styles, Socio-Emotional Learning, Multi-Grade Program, and Environment- Based and Culture-Based Education, eventually resulting in a holistic program tailored to each child's uniqueness. Lessons, activities, and programs are designed for children to use their creativity while developing their imagination, dexterity, and physical, cognitive, and emotional strengths.

Data Collection Procedure and Analysis

The data was collected from communal and substantive accounts grounded on the stories of those who are deeply involved in the study as well as from in-depth and semi-structured interviews with study participants, on-site observations, focus group discussions, and document and archival explorations. Qualitative analysis consisted of analysis of similarities and differences, coding and categorizing, and constant comparison *(Lunenberg and Irby, 2008)*. Creswell (2007) divides data analysis in an ethnographic case study into five parts: *1.) data managing, 2.) coding and developing themes, 3.) describing, 4.) interpreting, and 5.) representing*. The researchers engaged in the process of moving in analytic circles that spiral upward, a process that allows them to produce a continually more detailed analysis. The researchers enter with data as text and exits with an account or narrative *(Creswell, 2007)*. This analytic process contrasts with the more linear line of reasoning found in quantitative analysis.

Case Study Context

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MindHaven School's Innovative Flexible Learning Spaces and Learning Materials--- Their Utilization and Sustainability

MindHaven School's brain-based, play-based, and environment-based education program necessitates learning spaces that allow children to learn and apply their lessons in a natural setting while engaging all their senses. Learners with and without need can explore a range of sensory-rich spaces that are tailor-made to their needs. The school's learning spaces are engaging, promote movement, and are responsive to the diverse backgrounds and experiences of the students.

MindHaven School's learning spaces for both students with and without special needs may be roughly categorized into the following:

1. **School-Based Learning Spaces**
    a. ***Regular Class Areas***. Despite its name, MindHaven's regular classrooms cater to both students with and without special needs and are unlike the typical 4-walled classrooms in traditional school. Tables and chairs are provided for activities that really entail tables and chairs, but most of the time students sit on the floor or pillows and position themselves in ways that are conducive to their learning style and at the same time not a distraction to their classmates and teachers. Each room is planned to maximize all nooks and cranny, walls, floors, and ceilings to expose students to things that arouse their curiosity, beginning from the time they enter the classroom, to playing in the classroom, to having break time in the classroom, to pursuing where ever the lesson leads in the classroom.

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b. ***SPED Room.*** The SPED Room is the area for one-on-one or small-group pull-outs. It is equipped with sensory-rich materials, tools, and equipment that are functionally responsive to students with needs. A number of manipulatives and toys are from recycled materials and were crafted by the learners themselves and by their parents and/or caregivers.

c. ***Natural Learning Spaces.*** The school grounds (its garden, and play area, etc.), the immediate surroundings/outdoors of the school, and the entire community (barangay, city/municipality, province, region, and nation) are as much a learning environment as classrooms. In these learning spaces, students engage in Real Learning as they use real things as Real Books to explore, experience, and apply various lessons learned about history, art, math, science, literacy, life skills, etc.

d. ***Hybrid.*** Hybrid learning spaces are a combination of any or all the other kinds of learning spaces. Children with special needs, aside from having pull-ins in the classroom and pull-outs at the SPED room for cognitive learning areas, have a Functional Curriculum that is designed to put to direct use concepts like cooking, buying, transacting, etc. through activities participated in by both students with and without special needs. These activities include immersion in a bakery (or other place of work or business of one of the parents), going to the grocery store, availing of services from government offices, and many other similar activities in real places

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in the community. Through activities and projects like Beach Clean-Up, Survival Camp, and visiting homes for the elderly, real places in the community become Learning Spaces for all students. They learn their lessons in the actual places where the concepts in the lessons are applied and this method works better for them than merely the learning concepts through sit-down lessons using only textbooks.

2. ***Home-Based Learning Spaces*** are very critical venues for the foundation of learning. There is great value placed on the parents' role as the child's first teachers. Partnership between the parents/home and the school is the basis for the school's "Personalized School-Home Link Kit".

3. ***Community-Based Learning Spaces.*** The community as a learning space of the school refers to the barangay where the school building is located, the city/municipality, the province, the region, and the nation. With national and local issues and concerns, the community becomes the venue for the school's environment-based and place-based curriculum. Linkages are established with government and non-government offices and organizations who are willing to host and facilitate outdoor activities.

The school's motivation to use any space as a learning space is also its motivation to use anything and everything as sensory learning material. Aside from having an environment-based curriculum which necessitates the school to reduce, reuse, recycle, and repurpose resources, the school admittedly has limited funds at its disposal. The kinds of Learning Materials that the school uses

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are as listed below. At any given time, teachers use a combination of these kinds of learning materials to conduct lessons at any of the learning spaces.

1. ***Traditional.*** These are materials as basic as paper and pens. While the school uses books from publishers, a substantial portion of reading materials and workbooks are custom-made by the teachers based on the student's skill level, experiences, and interests. With the customization, we have proven that students respond more readily.

2. ***Local/Indigenous and Reused, Recycled, Recyclable, and Repurposed Sensory-Rich Materials.*** The school prefers to use locally found or sourced materials and sees to it to patronize the business and trades of our students' parents/families. It is also an ingrained culture of the school to buy only when really necessary and to reuse, recycle, and repurpose the regular by-products of commerce and consumerism. The students' juice/milk cartons and bottles and snack foils/wrappers and their parents'/families' used clothing, furniture, appliances, tires, and other old things that would otherwise have been destined for the wastebasket or landfill are processed/converted to become manipulatives in the classroom, props and costumes of students, stage props during plays, or something usable and serviceable in school.

3. ***Technological.*** The school uses technology--- multimedia, desktops, laptops, LCD TVs, tablets, etc.--- as vehicles or conduits for accessing needed information and as a means to

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create visual representation and simulation of abstract concepts. Technology is used as a medium for reflecting and facilitating mindful thinking.

Findings

1. PPT: ***Learners' Sensory Experience in Flexible Spaces Leads to Active and Meaningful Engagement***

Learners see the activity as personally meaningful to their day-to-day realities. There is a sustained high level of interest in the activity that, even when faced with difficulties, they persist in doing it since they believe that they will accomplish something of worth to them.

Teachers, as facilitators of the learning process, become learners themselves being co-designers, demonstrators, and evaluators of their students' outputs and performance. They have become attuned to their students' needs, backgrounds, perspectives, and interests and this familiarity is reflected in the students' Personalized Learning Programs.

"Teacher, I can read!"

Eli: "This is how to remove the nail, Seth."

Seth: "Be careful, Eli. You don't have hand gloves."

2. ***Strengthened Family Engagement***

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As a result of the school's Parent Education Program (PEP) and Caregivers Empowerment Program training sessions, the parents have become active volunteers, first hands-on educators, frontrunners of the School-Home Link Program, and effective role models to their children of what responsible citizens are and do. This became the topic of school's research, *"Family Engagements: Rekindling the Bayanihan (Community) Spirit in Developing Early Literacy and Language-Rich Environments."*

"The PEP made us aware of our collaborative responsibility for each child and not just for our own child. The culture of "Bata Mo, Bata Ko." – Parent

"I am Nanny, not just a nanny." – Caregiver

3. PPT. ***Evident School-Wide Culture of Creative Collaboration Among Learners with and without Special Needs***

This massive collaboration among learners with and without needs is one of the key elements of the 21st Century learning culture that will aid in attaining the goals of ESD. This paints a picture of a positive school climate as manifested in the interactions between and among learners, between learners and teachers, and between and among teachers, learners, parent, and school staff.

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Because of this culture of collaboration, there are clear expectations as to the kind of norms and values that are needed to support the development and ensure the safety of each individual mentally, socially, emotionally, physically, and spiritually. Barriers created by physical and developmental disabilities are torn down and replaced instead by respect for each and every student's voice.

At MindHaven, every stakeholder--- learner, teacher, parent, caregiver, and school staff--- by maximizing each of their roles, no matter how small the role is at the moment, contribute to the operation and sustainability of the School-Based, Home-Based, and Community-Based Learning Spaces. The school's culture of collaboration builds trust, opens connections, expects accountability, and supports a sustainable community in creating and carrying out a shared vision.

Conclusion

The research showed that the framework of Flexible Learning Spaces can be and is currently being done in the Philippine setting. An environment crafted through the careful and deliberate collaboration of the teachers, the learners, the parents, and other community members creates an opportunity for holistic learning to occur across all levels and all areas of development. This is a head-on clash with the current and pervasive mentality of traditional Filipino education that learning only happens inside the classroom.

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Traditionally, both the teachers and the learners tend to overemphasize academic achievement, leading to isolated learning wherein only the learners' cognitive skills are nurtured and often without real-life application. Whereas in MindHaven School, cognitive skills are honed together with all the other aspects of development. Students develop mentally, socially, emotionally, physically, and spiritually. Equal emphasis is placed on the development of socio-emotional skills, motor skills, creativity, and resilience, to name a few, and the instilling of mindsets like preserving the environment and giving back to the community.

The experience of MindHaven School in establishing Flexible Learning Spaces shows that a school as small as ours can do the following concrete, sustainable steps to solve perennial problems concerning classroom and learning materials:

1. ***Economic and Built Capital: Creating Learning Spaces***

   Financial limitations affected the ideal architectural design of the school building but our natural setting was creatively utilized as a learning tool to teach various subjects in all levels. Learning is no longer tied to classrooms that used to be just spaces that were irrelevant, isolated, disconnected, non-functional, and detached from students' learning. Now, every space and everywhere is a learning space for concretizing and representing concepts in math, physics, language arts, history, and life skills, to name a few.

2. ***Natural and Environment Capital: Its Role in the Construction of Knowledge***

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Making use of the existing natural resources from the home, the school, and the community was made part of learning process. This resulted in a learner-centered approach to learning wherein learners gain the awareness to be active participants in their own learning. Teachers, learners, and parents become aware that *"the richer the environment, the greater the number of interconnections that are made, and the faster and more meaningful learning will be."* The learners' interests and individual needs are prioritized and they then manifest ownership of their knowledge rather than merely accepting and reproducing the information coming from their teachers.

3. Human and Social Capital: Student & Family Engagement and Space Ownership

The students and families, seeing the value of their participation--- from the conceptualization to the design and to the maintenance of the learning spaces--- have developed a sense of "Space Ownership." Students and families perceive the school as an extension of their homes. The students, as learners, have become passionate as well as sensitive, empathizing with each other and most especially with their co-learners who have special needs. On top of all this, students and families discard the fixed mindset, acquire the growth mindset, and begin to see "education not as preparation for life, but that it is life itself."

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Overall, MindHaven School has shown that a sustainable community can wisely manage all its current capital to continue to support this "school community" in the future. This, we believe, is one of the first steps to implementing an Education for Sustainable Development (ESD) Program. It all started from our little innovation--- building equitable, sustainable, and affordable Flexible Learning Spaces.

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