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The peer-reviewed *IALS Journal* is published once a year and addresses key issues facing today's laboratory and university affiliated schools. Articles offer perspectives on educational trends and include topics such as the history and future of lab schools, innovations in curricula and programs, lab school administration, and teacher education. The journal includes articles grounded in evidence-based classroom practices, action research, and theoretically based quantitative and qualitative scholarship.

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MESSAGE FROM THE EDITOR

The International Association of Laboratory Schools is proud to present the fourteenth edition of its journal, a space devoted to scholarship, research, and innovation in laboratory schools around the world. In this volume, we reassert our commitment to disseminating and advancing best teaching practices and present a collection of articles that are consistent with our mission to improve student learning at our member schools and beyond.

In “The Hatch Lab: A Case for Early Childhood STEM,” Britney Tarr and Barbara Meyer from Illinois State University argue that it is never too early for children to become fledgling engineers and experts in STEM. The Hatch Lab at Metcalf Laboratory School in Normal, Illinois aims to create a makerspace where children are not passive recipients of information, but instead become active learners who construct their own understanding of the world as they hatch new ideas and hone their problem solving skills. This article explores the benefits of introducing children to STEM at an early age and makes the case for other schools to adopt what has proven to be quite a fruitful initiative.

Although it is generally recommended that schools not teach about the Holocaust until sixth grade because children may not fully grasp the historical context in which this event took place, Kline et al. propose that it is plausible to introduce younger children to this topic through age-appropriate literature and parental guidance. In “Reading about a Hero of the Holocaust: A Multiple Case Study of Families and Teachers from a Laboratory School,” the authors set out to investigate how eight-year old children would react to reading and discussing the book *Nicky & Vera: A Quiet Hero of the Holocaust and the Children He Rescued?* (Sis, 2021) individually with their parents. Their study highlights the indispensability of parental involvement when addressing sensitive or “heavy” topics and posits that early exposure to Holocaust education may help combat the trend of “forgetting” about the Holocaust that has recently taken place in the United States of America.

Upon presenting an insightful historical overview of Guyana’s colonial history, Lidon Lashley lays out a rationale for the cultural influences that have impinged on the way in which Guyana’s educational system works with Special Education Needs and/or Disabilities (SEND) students. In “The Inclusive Education: A Conceptualized Reality or Misapprehension in Postcolonial Guyana,” Lashley denounces the lack of inclusion and marginalization of SEND students in his country and presents a call to action to the local government to legislate in

favor of inclusive educational policies that grant all students’ rightful access to mainstream education.

Laboratory schools are called to catalyze and promote innovative teaching and learning practices that not only develop the students’ cognitive skills but also their affective domain. In “Bridges over Troubled Waters: Anchoring Values and Democratic Education, Fostering Civic Skills and International Mindedness,” Haag and Votava Mandelíčková report on their findings after completing a four-phase project at the Labyrinth School in Brno, Czech Republic and the École des Hautes Études en Sciences Sociales in Paris, France. Their article cogently illustrates and asserts the significance of incorporating values and democratic education in our curricula to strengthen children’s emotional, social, and civic skills and fostering their openness to different cultures.

The development of oral and literacy skills in a second language during early childhood not only depends on the instruction offered at school, but also relies greatly on the support provided by family and community members back home. In “Oral Language and Literacy Skills Development,” Meenakshi Dahal, Associate Professor of Education at Kathmandu University in Nepal, closely studies the development of literacy skills in a group of preschool children in Banke, Nepal, who are acquiring Nepali and English as second languages. In addition to emphasizing the influence that schools, home environment, and community have on a child’s oral and literacy skills, Dahal also discusses the implications that her study has on local educational practices and provides several recommendations that pertain to educational policies in Nepal.

Together with the core subjects that are traditionally taught at most schools, Lashley and Semple-McBean from the University of Guyana advance the idea that children at all levels should be given the opportunity to reap the benefits of agriculture as part of the school curriculum. In “The Neurodiverse Explorers’ Farming Adventures,” the authors present a fascinating project at the University of Guyana Early Childhood Centre of Excellence (UG-ECCE) that invites 3- to 5-year-old children to be in close contact with nature as they engage in play-based activities and learn more about farming. The authors advance the idea that, by promoting initiatives such as this one, laboratory schools around the world would offer their students meaningful learning opportunities that go beyond classroom walls while providing them with much needed socialization experiences.

A laboratory school community is composed of several constituents that are essential to achieving its institutional mission and goals. Oftentimes, much of the responsibility of guiding, motivating, and supporting students, parents, and staff is assumed by school directors, who are tasked with the responsibility of leading their school to excellence and success. In “The Coping Skills of Laboratory School Directors and the Influence on Job Engagement,” Senerchia et al. explore how school directors cope with the stress of their job to increase and maintain work engagement among staff members. Upon revealing and discussing the results of their investigation, the authors propose future research initiatives that further look into lab school directors’ experiences with coping skills and job engagement.

To conclude the Spring 2024 edition of our journal, Dr. Elizabeth Morley from the University of Toronto presents a review of the book *LabSchoolsEurope: Participatory Research for Democratic Education*, edited by Benedict Kurz and Christian Timo Zenke (2023).

We are once more honored to share the work of our distinguished colleagues with the *IALS Journal* readership. We hope that their contributions inspire teachers, researchers, and administrators around the world to strive for excellence in their future endeavors and motivate other authors to submit their research and writing for publication in future editions.

Roberto E. Olmeda Rosario
IALS Journal Editor

The Neurodiverse Explorers' Farming Adventures

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Introduction

At the University of Guyana Early Childhood Centre of Excellence (UG-ECCE), three to five-year-old neurodivergent and neurotypical children participate in exploration adventures to the University of Guyana, Faculty of Agriculture and Forestry's Farm as part of their learning activities. This discussion focuses on how UG-ECCE embraces an inquiry-based, diverse pedagogical tool kit to cater to the multifaceted needs of neurodiverse and neurotypical children, and how utilizing a constructivist approach to learning gives them control over their learning and socialization experiences. Lessons demonstrating high-quality inquiry-based teaching are modeled so that others can observe instructional strategies shown to positively impact children's holistic development and achieve desirable learning outcomes. The farming adventure was fostered through UG-ECCE collaborations with the different Academic Programmes, Faculties, and Units at the University of Guyana (UG) to offer robust and meaningful learning experiences to the children of the Centre, in addition to shaping pedagogical practices, research, and early childhood exploration within Guyana.

Background

According to Lashley (2021), all children, whether neurodiverse or neurotypical, deserve learning and socialization experiences tailored to their unique diversities. Lashley went on to state that catering to children with diverse needs extends the reach of instruction and support to a wider group of neurotypical children. Lashley (2022a) reminded us that children have contextual learning and socialization needs, which must be conceptualized when catering to their learning preferences and varied intelligence. Providing opportunities suited to these preferences as well as intelligences is the epitome of individualized learning and socialization (Lashley, 2021, 2022a). At the UG-ECCE, children with impairments

(neurodiversities) such as autism, dyslexia, dyscalculia, attention deficit hyperactivity disorder (ADHD), and obsessive-compulsive disorder (OCD) are catered for. These impairments are not isolated sometimes in a neurodiverse child but are accompanied by comorbid challenges. As a result, these children often struggle with soft skills, especially ones that apply to social interactions.

These struggles frame the need for a pedagogical approach that is dynamic, flexible, adaptive, and fun with an integrated play-based approach. Also, unwarranted temper/behavioral tantrums, which sometimes endanger the safety of the child as well as other children sharing the learning and socializing sphere, frame the need for the pedagogical approach described above. These behaviors interrupt the learning and socialization of the group within a pedagogical approach that is not adaptable to interruptions. However, while they interrupt planned experiences and opportunities, they open the avenue to learn and be adaptable as educators in an ever-evolving educational atmosphere. These experiences and opportunities at UG-ECCE are seizing and catapulting to meet the needs of our neurodiverse group of children.

The other side of this equation is the neurotypical children who are educated alongside their neurodiverse peers at UG-ECCE. We recognize that very young children who display typical intellectual and cognitive development can be easily frustrated by the actions of neurodiverse children. For example, a tantrum or robotic response from children with autism or sudden hyper behaviors from children with ADHD. Children are sociodramatic beings (Semple-McBean & Lashley, 2021), and learning through sociodramatic play is critical to their development. Children at work or play band together harmoniously in a supportive and enabling social environment (Semple-McBean & Lashley, 2021). At the UG-ECCE, this form of play is embraced as an approach to cater to all children (neurodiverse and neurotypical) and facilitate their social interaction, inclusive of their interaction with and exploration of nature and natural outdoor spaces. The staff at UG-ECCE

acknowledge that neurotypical children acquire physical, verbal, intellectual, and social skills at a specific pace and meet standardly accepted developmental milestones. However, they also acknowledge that if neurodiverse children share the environment, neurotypical children exceed standardly accepted milestones for development.

Further, children at the UG-ECCE, whether neurotypical or neurodiverse, are supported in our constructivist play-based pedagogical support to navigate complex social situations, have good communication skills, and establish social connections with peers. They are supported and nurtured to function effectively in distracting or stimulating settings without becoming overloaded by stimuli. And if they become overloaded, they are expected to release the loaded burden of overstimulation. The staff at UG-ECCE have seen the overlap in what is considered neurodiverse and neurotypical, such as difficulty comprehending math but a typical or even precocious ability with language. This overlap is described as the opportunity to shape the best situation for contextualized learning (Lashley, 2022a). Lashley further echoed that the Guyanese culture and natural landscape create a panoramic opportunity to truly reflect an inclusive learning environment for children to learn, play, and strive beyond what is envisioned.

Agriculture and UG-ECCE's Vision

The farming project grew out of the UG-ECCE's vision to give nature and natural outdoor experiences a place to thrive as a daily part of the children's experience. Recent research in Guyana by Semple-McBean et al. (in press) shows the importance of nature experience for children's overall health and well-being during the early years and how deprivation of such experiences could lead to "nature deficit disorder," as identified by Louv (2005; 2011). Semple-McBean et al. (in press) have agreed with arguments put forward by Wojciechowski and Ernst (2018) that experiences with nature allow children's creative thinking to flourish when they see themselves and act out roles as natural scientists. Other key arguments put forward by Semple-McBean et al. (2023) in support of nature experiences are: (1) Non-traditional pathways to learning become possible, especially for children who are sensitive to noise and cluster (e.g., children who are autistic); (2) Reducing incidences of childhood obesity; (3) Suitable environment for healthy risk-taking and problem-solving (how do I get the cherries from the top branches?); and (4) Development of resilience. When children engage in nature-based experiences, their imagination is stretched beyond the required limits for sustaining curiosity dampened by adverse experiences: abuse, disaster, illness, migration, neglect, poverty, and violence (Duron-Ramos et al., 2021; Semple-McBean et al., in press;

Sjöblom & Svens, 2019; Tuuling et al., 2019; Wilson, 2012; Zamani, 2016).

Agriculture and Guyana

The President of the Cooperative Republic of Guyana, Dr. Irfaan Ali, has signaled his intention to make agriculture in Guyana more youth-oriented as part of his government's plan to develop the sector further and maintain food security and the food ecosystem (Ministry of Agriculture – Guyana, 2013-2020 Strategic Plan; Government of Guyana Press Release, July 18, 2023). Further, Guyana's Minister of Agriculture emphasized that the Government of Guyana has aligned the country's National Development Pathway to focus on priority areas such as food security, climate change, and agriculture financing as it works towards achieving the United Nations Sustainable Development Goal (SDG 2) of "Zero Hunger." The interpretation of this initiative is left to those implementing it. At UG-ECCE, we see all our children capable of participating in the country's agriculture initiatives.

Agriculture is a major export earner for Guyana, employing roughly 17% of the labor force. In 2021, the agriculture sector contributed approximately 19 percent to non-oil GDP. Our neurodiverse population includes children who have the aptitude to develop agricultural skills. These children show interest and excitement about farming adventures. We believe that exciting the neurodiverse population through farming adventures can significantly increase agriculture's contribution to Guyana's GDP. While the Government of Guyana views agriculture as necessary for the diversification of the economy, we at UG-ECCE extend that vision to include agriculture as a way to practice inclusive education.

Our children are very curious. They love to explore the outdoors. The UG-ECCE has the land and space to fuel farming exploration and adventures. We intend to capitalize on Guyana's tropical climate and topography, which allow the production of crops that differ mainly from those grown in the cooler climates of the North. We intend to use farming adventures as a therapeutic activity for our neurodiverse children while teaching patriotism.

Managing Beyond Farming

Guyana has an abundance of natural resources, and the location of UG-ECCE is a nature-based environment. Embracing nature as a resource for learning is upheld, as suggested by Zamani (2016) and Tuuling et al. (2019). Nature and the natural outdoor spaces surrounding the UG-ECCE offer ample possibilities and opportunities for the children of UG-ECCE to learn about nature and use natural materials as they

explore farming. Also, nature activities provided in the safety of the compound of UG-ECCE enable our ECD (Early Childhood Development) practitioners to facilitate the children's curiosity, experimentation, and investigation in problem-solving. Dowdell et al. (2011) and Vartiainen et al. (2018) support the use of nature by ECD practitioners to mediate children's learning and inquiry. The outdoor learning environment, like the University of Guyana's Farm or the natural spaces around UG-ECCE, provides an informal environment based on authentic experiences. An informal environment with authentic experiences increases children's opportunities to feel, smell, see, hear, and taste (Duron-Ramos et al., 2021; Sjöblom & Svens, 2019; Wilson, 2012). Providing an informal environment with authentic experiences also works as a support for emotion and behavior management for our children with neurodiversities at UG-ECCE.

Moreover, outdoor natural learning environments transform learning experiences through nature, play, and imagination, thus rendering learning experiences more meaningful and significant to children (Lindfors et al., 2021; Roslund et al., 2020). Outdoor natural learning environments enable children to use their own experiences, knowledge, and observations while completing learning experiences (Aerila et al., 2019). According to Aerila et al. (2019), children's thinking processes, designing, and hands-on making form a new perception of technology via self-made solutions for learning experiences, assignments, and tasks. Facilitating the development and extension of the thinking processes and processing skills through problem-solving agricultural issues, specifically farming, is an aspiration for the ECD practitioners at UG-ECCE.

In Guyana, the word "agriculture" is used synonymously with "farming." Farming includes both growing and harvesting crops as well as raising animals or livestock. Agriculture provides the food and many raw materials that humans need to survive. These sentiments are echoed in our agriculture theme for learning in the Nursery Level 1 and 2 classes. Children of UG-ECCE are given hands-on opportunities to grow and harvest crops. They visit the Faculty of Agriculture and Forestry to receive extended experiences and to learn about farming animals or livestock. Having an agricultural plot on the Centre's ground allows for daily inquiry and exploration. Our little scientific minds get support from visiting academics in the field. They get to be actively involved in practical farming while learning and understanding the principles of farming.

The children of UG-ECCE maintain the garden plot on the Centre's grounds. While it engages them in inquiry-based learning, it is simultaneously used as therapeutic behavior management activities for our children with challenging behaviors and/or anxieties. The garden plot provides relaxation in an open, natural outdoor space. For example, several of our

children with autism and ADHD control their manic/meltdown episodes in the garden. Sometimes, they independently recognize when they are getting anxious, agitated, or frustrated and request to be allowed to go outside to the garden or the courtyard. In the courtyard, they play with the roses, shrubs, and other calming plants. They even share their emotional experiences. One of our most fulfilling observations is that many children actively engage in sociodramatic play in the courtyard. Even if two children from different levels are taken out for anxiety, mental relaxation, manic behaviors, or tantrums, they calmly engage in sociodramatic play after a short time in the courtyard. Our courtyard is in the center of our compound, equidistant to each classroom. This allows for easy supervision at all times.



Figure 1. UG-ECCE Courtyard and Rose Garden



Figure 2. Children of UG-ECCE harvesting their crops grown at the Centre

Exploring Agricultural Concepts

Through play and exploratory activities, children seek information about themselves and the phenomena of the world around them (Bodrova & Leong, 2015) and enhance their ability and understanding of technological phenomena to find solutions to various problems of interest (Sundqvist & Nilsson, 2018). Children at the early childhood level learn by playing, moving, exploring, working on different assignments, expressing themselves, and through versatile activities (FNBE, 2016). Children learn about the world around them better through what they experience, not through what they are told (Semple-McBean & Lashley, 2023; Rönkkö et al., 2016). They are typically interested in small-scale observations and investigations such as nature phenomena (e.g., animals and water), observing real-world technological solutions and their functionality, examining phenomena related to nature and technology, and making artifacts because of their experiences (Rönkkö et al., 2021). Playful exploration is inherent in young children's activities (Semple-McBean & Lashley, 2023; Stylianidou et al., 2018).

The commencement of the discussion on farming in the classroom was done through playful exploration which emphasized that the products of agriculture that people eat come from both plants and animals. Discussions with complementary exploratory activities of natural objects are focused on agriculture products indigenous to Guyana, especially plant foods such as fruits, vegetables, and grains. Samples of these are brought into the classroom to stimulate the discussion. The discussion is then used as a pivot to guide the children to develop questions they are eager to answer. The classroom exploration of the concepts continues with the constructed questions as the guide beacon. Children begin to own their learning at this point. We guide the UG-ECCE children in checking their answers and rechecking. As part of the learning process, the children are then allowed to share any discoveries and new learning. They communicate both vertically to the teachers and horizontally to their peers. The teachers/facilitators then step back, and the vertical and horizontal lines of communication run parallel for a while, and then they intersect. At the intersection, the children get further engrossed in the concepts. After a moment of deep learning, we follow up with reflection time and another session of sharing what they have learned. All this is still classroom preparation/activities, which is then followed up by actual farming adventures and exploration.



Figure 3. Farming adventures and exploration following a classroom activity



Figure 4. Growing seedlings to transfer as trees in the Centre's Garden Plot

Following on from the growing of the seedlings is developing the understanding that they can get lumber from the trees we grow and those in Guyana's forest. Therefore, preserving and growing trees is another important agricultural job the children actively engage in on the Centre grounds. One initial conversation was framed from an answer given by a child during in-class communication about their learning that trees are "alive." Other children gave their input and continued to shape the trajectory of the lesson. The most challenging part here is that the teachers must be prepared to take the children where they want to go as they explore the concept. If the teachers are not prepared to take the journey with the children,

both parties can get frustrated, and opportunities for key learning are missed. In order to make the most of journey-ready moments, our teachers participate in continuous developmental sessions to be flexible and dynamic in their responses as they recognize journey-ready moments. It is at this moment that our understanding that children learn about the world and their place in it through their interactions with materials and other people is challenged. Importantly, these moments are not always serious; this is where we integrate a variety of opportunities for children to engage in sociodramatic play together. They are allowed to explore in these teachable moments.



Figure 5. Extending the discussion on Trees in the classroom (Teachable Moment)

Because of another teachable moment, the discussion is extended to show that the trees, whether from farms or forests, are used to make buildings, furniture, boats, and many other things. Since many of the children actively celebrate Christmas, they grew a Christmas tree with the understanding that Christmas trees often come from tree farms, too. The teachers' preparedness to transition from indoor to outdoor activities with the children as they try to answer their constructed questions is key again here. The inquiry never truly ends but shapes future inquiry for extended learning. UG-ECCE practitioners are expected to be always open to the children's quest and not ever to turn off the beacon of inquiry.



Figure 6. Being amazed that his Christmas Tree comes from a seedling grown on a farm

Another Question Is Constructed

One bright, sunny Guyanese Monday in January 2023, a curious neurodiverse child asks the first author if he is only allowed to do farming at the UG-ECCE. After posing his question, he explained that his yard at home is covered with concrete and trees are not growing in it. This became a great teachable moment for the entire class, who witnessed the conversation and watched on eagerly. The exploration was guided by a video on different farming locations and techniques. After the video, the child was allowed to try answering his questions. The class was then allowed to try and were encouraged to observe the plants growing in the sandy courtyard and those growing in the clayey and loam garden plot. Again, the first author facilitated as the children tried to answer the question posed. After they framed their answer, the first author participated in the discussion at a parallel level and explained that people practice agriculture/farming on farms, in their gardens at home, on ranches, in savannahs, pastures, riverbanks, in orchards, and potted containers in their homes all over the world. The curious, neurodiverse group of children was told that farmers raise crops and livestock in every climate and in all kinds of different soils. After an engaging classroom session, they were taken to the University's farm, which is immediately behind the Centre, to see that trees can grow in improvised conditions and situations without available landform on the ground.



Figure 7. Curious children of UG-ECCE observing trees growing without soil

The conversation continued to show that plants and livestock need air, water, and nourishment to stay alive. If a plant does not have the kind of nourishment it needs, it may die. So, even without soil, there must be an alternative way to nourish the growing trees. The Faculty of Agriculture and Forestry academic staff was captivated by the children's curiosity and questions. In the discussion with the children, the faculty staff suggested ideas for them to practice when they return to the classroom and their homes. The children's minds were blown when they were shown that fishes (e.g., tilapia and tambaqui), are grown in the water tanks used to nourish the trees. At this point, the neurodiverse group began to see the connection in the lives of plants and animals. This also became a lesson within a lesson (another teachable moment). Teachable moments kept popping up to fuel their curiosity and natural quest for knowledge and understanding of the world around them.

Although not intentional or planned, recycling became a concept that was also introduced. A neurodiverse child with exceptional intelligence highlighted it. The child explained, "It is recycling. We are reusing the water all the time. It comes from the fish tank with nutrients for the plants." After pausing and observing for about one minute, she continued, "It is then filtered through the bed of the plants and returned to the fish tanks." She shouted happily, "It goes on all the time." It was a happy moment to see how easily the child connected her learning and transferred the learning to a new situation without an adult introducing the concept. Her friends were amazed and began asking her questions instead of the agriculture academic present. She answered confidently; the academic only made additions. The children were now leading the lesson, and the adults participated—the true essence of inquiry-based learning.



Figure 8. Touching the tilapia from the water tank



Figure 9. Learning how the fish contribute to the growth of plants



Figure 10. Seeing the differences in growing trees and fueling curiosity



Figure 11. Pondering on the explanation of plant growth

When the children handed the lesson back to the adults present, we continued to guide their farming adventure but with a different perspective, which the children shaped. The academic was impressed that he asked the children of UG-ECCE a question about the water in the tank shared by the tilapia, tambaqui, and lettuce. Our brilliant minds explained that it was natural water in an artificial process. “It looks natural, though, but it is artificial,” explained an Autistic Child (Level One Autism – Exceptional Intelligence). This was his first statement in the entire process, which he observed intently. The academic continued by stating that both plants and animals need to have a suitable climate and the right food to survive. Farmers try to raise the kinds of livestock and plants that will do well in their region. If they do not have perfect natural conditions, they try to create the best conditions possible. For example, many farmers in dry areas use irrigation or artificial watering as we do at the University of Guyana with our tilapia, tambaqui, and lettuce.



Figure 12. Talking about weather and climate and farming



Figure 13. Curiously measuring the rainfall for the day around the UG-ECCE

Crop Protection in Farming Adventures

In response to another question posed by the neurodiverse explorers on their farming adventures, we learned that farmers also protect their crops by practicing crop rotation. The same crop should not be planted in the same fields year after year. Planting the same fields year after year can destroy the soil. Certain plants will use up all of the nutrients in the soil, but some plants add necessary nutrients. For example, nitrogen is essential for plant growth. Certain crops, such as clover and soybeans, add nitrogen to the soil. After they are allowed to grow and add nitrogen to the soil, other crops that need nitrogen can be planted next year.



Figure 14. Viewing the crop rotation process



Figure 15. Vegetables sometimes grow without human help

After a day filled with adventures at the farm, the children of UG-ECCE returned to the classroom to continue their hands-on learning about farming.

Back in the Classroom

Vygotsky's Zone of Proximal Development indicates that learning is social and the basis of constructivism. At the UG-ECCE, learning is accompanied by active socialization. The neurodiverse children learn through collaboration with their neurotypical peers, which is the epitome of inclusive education (Lashley, 2022b, 2023). Collaboratively, the children explore, invent, and discover through active learning and socialization. The constructivist approach embraces exploration (inquiry), invention, and discovery (Yoon et al., 2012). We thought the adventures on the farm would have quelled the curiosity about farming and allowed for a smooth classroom interaction. We were wrong. The children's curiosity continued to rock the boat of learning. The things they discovered as they explored the farm now boost their need to learn more. We embrace this stimulation at the UG-ECCE.



Figure 16. Back in the classroom to experiment with our new learning



Figure 17. The classroom experimenting continues



Figure 18. Exploring germination and sunlight

Discussion

Facilitating an inquiry-based approach to learning and socialization promotes learning effortlessly, as demonstrated by the UG-ECCE neurodiverse and neurotypical children's collaborative farming adventures at the Centre, in the classroom, and at the Faculty of Agriculture and Forestry Farm. This all-inclusive environment of the University of Guyana promotes inquiry-based learning at the UG-ECCE. Constructivists believe an individual gains knowledge by constructing reality through experiences (Yoon et al., 2012). This was demonstrated on the farm as even autistic and other neurodiverse children constructed their reality of artificial and natural farming techniques through owning the farming experiences. Active experiences allow learners below the average level of performance to improve their learning by constructing meaningful experiences (Lashley, 2017, 2023). The depth of participation and meaning added to the experiences, even children who are otherwise easily distracted (those with intellectual disabilities and ADHD), were fully engrossed in the farming experiences. They contributed actively to the discussion and created the farming reality for the children of UG-ECCE.

Inquiry-based learning starts by posing questions, problems, or scenarios rather than simply presenting established facts or portraying a smooth path to knowledge. The farming adventure started with children asking questions and creating their own scenario, which the adult then helped them frame as a problem they needed to find the solution to. This led to the farm's exploration to discover and acquire knowledge and skills to frame their solution to the problem. The researcher acted as the facilitator along with the teachers. However, we excitedly stepped further back as children stepped up and facilitated their peers' learning at different intervals. Our inquirers identified and researched issues and posed questions to develop their knowledge and/or solutions. They actively engaged in problem-solving, which made their learning fun and rewarding without frustration for the neurodiverse children whose learning preferences were met effortlessly. Ban Chi and Bell (2008), Lindfors et al. (2021), Roslund et al. (2020), and Semple-McBean and Lashley (2023) supported the process we embraced by indicating that inquiry learning involves developing questions; making observations; doing research to find out what information is already recorded; developing methods for experiments; developing instruments for data collection; collecting, analyzing and interpreting data; and outlining possible explanations and creating predictions for future study. When the children returned to the classroom to continue their learning, they inferred and predicted unanticipated future explorations.

Developmentally Appropriate Socialization and Learning Experiences of the Farm Visit for Children:

- Explore the principles and practices of basic farming: soil preparation, seasonal crops
- Appreciate the country's agriculture agenda: The Grow More Campaign
- Foster patriotism: Appreciate locally grown foods
- Conduct scientific inquiry and experimentation: monitoring the growth of plants
- Learn the structure and functions of plants: the roots absorb water and nutrients, and the leaves conduct photosynthesis and respiration
- Learn about food production: where some food comes from
- Develop responsibility: caring for plants, plants need water and food to grow and stay healthy
- Understand cause and effect: plants die without water, weeds compete with plants
- Cultivate love of nature: a chance to get fresh air and appreciate the beauty of nature
- Encourage reasoning and discovery: learning about the science of plants (for example, worms soften and separate the soil for the plants, the life cycle of plants)
- Overcome fears: usefulness of certain worms and bugs to plants helps to reduce fear
- Promote healthy nutrition: the importance of eating fresh and healthy foods, the nutritional value of different types of produce
- Develop patience and focus: they need to be patient and wait for their plants to grow

Conclusion

Learning that is good for children evokes the idea of experiential learning, the cornerstone of the constructivist theory of learning, and its relevance to the current 21st century learning (Lashley, 2017, 2019; Wilhelm & Wilhelm, 2010; Zajda, 2022). This form of learning caters to exceptional children with all forms of neurodiversity. The population of UG-ECCE is neurodiverse, and catering to their varying learning and socialization needs is critical to laying the foundations of learning in the early years, and more critical as we extend opportunities for learning and play at the UG-ECCE. Further, embracing nature as a resource for learning, as was suggested by Zamani (2016) and Tuuling et al. (2019), is critical in contributing to meaningful learning experiences for the children at UG-ECCE. Enhancing children's learning experiences and socialization through play in natural spaces indeed facilitates the development and extension of the

thinking processes and processing skills through problem-solving, as posited before by Aerila et al. (2019). Our neurodiverse children celebrate the opportunities to design and have hands-on experiences outdoors when completing developmentally appropriate learning tasks facilitated by ECD practitioners at UG-ECCE. Farming adventures were one of many outdoor and nature adventures that facilitated children to have meaningful experiences without experiencing sensory overload or being overwhelmed indoors all day.

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