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Sustaining schoolyard pedagogy through community academic partnerships

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ABSTRACT

There is a large body of research indicating the benefits of exposure to nature and schoolground greening for children's development, learning, and social skills. This paper presents the results of a schoolyard greening project and study, which builds community academic partnerships (CAP) with schools and the regional university. The purpose of the project is to: (1) co-design and install outdoor classrooms; (2) co-develop schoolyard curriculum that aligns with Ministry of Education expectations; and (3) 'green' public access schoolyards in an effort to promote sustainability, connection to nature, and community connections. Transformative phenomenology was the qualitative methodology employed, assisting the scholar-practitioner with bringing phenomenology to practice. A socioecological framework was applied to the study to explore the study participants' ($N = 35$) lived experience, place, experiential pedagogy, and agency and participation and the study results are thematically grouped around these key foci.

RÉSUMÉ

Il existe un grand nombre de travaux énonçant les avantages de l'exposition à la nature et du verdissement des cours d'école pour le développement, l'apprentissage et les aptitudes sociales des enfants. Cet article présente les résultats d'un projet de verdissement des cours d'école et d'une étude qui établit des partenariats scolaires communautaires avec les écoles et l'université régionale. L'objectif du projet est de: (1) concevoir conjointement et installer des classes extérieures; (2) développer conjointement un programme scolaire pour la cour d'école qui s'harmonise avec les attentes du ministère de l'Éducation; et (3) de verdir les cours d'école à accès public dans le but de promouvoir le développement durable, le lien avec la nature et les liens communautaires. La phénoménologie transformative est une méthodologie qualitative qui a été utilisée pour aider les chercheurs-praticiens à traduire dans la réalité les aspects pratiques de la phénoménologie. L'étude utilisait un cadre socioécologique pour explorer l'expérience vécue par les participants ($N = 35$), le lieu, la pédagogie empirique

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et l'agence. La participation et les résultats de l'étude sont regroupés par thème autour de ces éléments centraux.

Introduction

There is a large body of research indicating the benefits of exposure to nature and schoolground greening for children's development, learning, and social skills. Williams and Brown (2012) assert that outdoor spaces reconnect children with nature and promote a sense of place. Outdoor classrooms and green schoolgrounds build community (Wirth & Rosenow, 2012) and promote social inclusion (Harris, 2015; Jacobi-Vessels, 2013). Green schoolgrounds serve as sites that reduce stress (Chawla, Keena, Pevec, & Stanley, 2014) and promote biodiversity conservation, environmental education, community recreation, and environmental/habitat enhancement (Williams & Brown, 2012). Free play and leisure activities are hallmarks of green schoolgrounds (Chawla et al., 2014). Teaching and learning in outdoor settings enhance environmental literacy and can animate corollary curricular learning in the areas of reading, writing, art, health, drama, and social studies, among other topics (Williams & Dixon, 2013).

My career as a wilderness trip guide and experiences in the natural environment alongside my own classroom teaching have inspired me to want to better understand the possibilities of integrating outdoor learning with classroom learning. Through my own teaching, I began to uncover the ways in which learning could be more than just knowledge acquisition and skill-building, but could also impact people's dispositions, values, and behaviors. Acknowledging this positionality is akin to researcher reflexivity, whereby the researcher self-identifies biases and perspectives relevant to the study endeavor – ones that inform the design and study details (Lave & Wenger, 1991; Savin-Baden & Major, 2013). I am thus a teacher and researcher committed to both classroom-based and outdoor classroom learning. In large part, my environmental education-focused research and experiential approaches to teaching and learning have led me to this present study, which is to build community academic partnerships (CAPs) with a focus on: (1) the co-design and installation of outdoor classrooms; (2) the co-development of schoolyard curriculum that aligns with Ontario (Canada) Ministry expectations; and (3) 'greening' public access schoolyards in an effort to promote children's connection to nature, provide a link between local public schools and the community, and support schoolyard pedagogy.

The purpose of this paper is to present the process and outcomes of one schoolgrounds-based educational initiative, a 'greening Niagara's schoolyards'

project and an associated study, which involved the installation of two outdoor classrooms. The study explored the outcomes of this pedagogical initiative and its successes and challenges as one form of CAP.

Transformative phenomenology was the qualitative methodology employed. Transformative phenomenology aims to assist the scholar-practitioner with bringing phenomenology to practice (Rehorick & Bentz, 2008). Data collection consisted of interviews with university students and K-8 school teachers and parents. The data was deductively analyzed and coded with a focus on understanding all of the various participants' experiences (Berg & Lune, 2012; Van Manen, 1990). The codes that emerged from the analysis were grouped into themes in accord with the socioecological theoretical framework (Wattchow et al., 2014). The literature review, theoretical framework, thematic results, and a discussion of the scholarly significance of this will be presented, as will details about the methods in subsequent sections.

Literature review

This next section will provide an overview of the following key areas of literature relevant to the study purpose: environmental education, schoolyard pedagogy, and CAPs.

Environmental education

Research on environmental education in schools reveals an increase in knowledge and understanding, changes in students' environmental attitudes and behaviors (Breunig, Murtell, & Russell, 2014; Gill, 2014), and positive impacts on young people's self-efficacy and self-worth (Dillon & Dickie, 2012). Environmental education and outdoor learning contribute to students' health and well-being (Chawla, 2015). Nature-play helps students build social skills (Jacobi-Vessels, 2013) and improve their interpersonal skills (Harris, 2015). The results of one study indicate that outdoor/environmental learning enhanced students' understanding of ecological principles and increased students' awareness of local environmental issues (Williamson, 2014). Outdoor/environmental learning also had a positive impact on student perceptions of school and learning in general. Studies have demonstrated that when young people have access to green schoolyards and choice in how they play and spend their leisure time, they have better memory, improved listening skills, and lower levels of hyperactivity and impulsivity (Chawla et al., 2014). Teachers have witnessed increased motivation, communication, and participation among students (Fägerstam, 2014) and teachers themselves are transformed in their practice (Feille, 2013).

Environmental education in Canada

The United Nations Decade of Education for Sustainable Development (2005–2014) impelled governments across Canada to introduce a variety of environmental and sustainability educational initiatives into school settings. These include Manitoba's Guide for Sustainable Schools, which provides step-by-step instructions for building stewardship into school curriculums, governance, human resources, and operations (IISD and Manitoba Education, 2012); and Nova Scotia's SENSE project, funded by Environment Canada, which aims to upgrade educational facilities with community and school gardening programs (Nova Scotia Environmental Network, 2012). In British Columbia, there exists an interdisciplinary guide for teachers, which promotes facilitating environmental education learning across subjects (rather than isolating it) and modeling for students how the environment is connected to their daily lives and relationships within their communities (British Columbia Ministry of Education, 2007). In Ontario, one noteworthy initiative is the integrated Environmental Studies Programs (ESPs), wherein environmental topics are integrated into a holistic and interdisciplinary curriculum model taught at the secondary school level to students who register for a package of courses and spend the full semester with one to two teachers and a single student cohort (Breunig et al., 2014).

Examples of environmental-focused curricula in Canadian elementary schools can be found through Forest and Nature School in Canada (2014), the Ontario Ministry of Education (2013), and the Global Environmental and Outdoor Education Council of Alberta, as well as many other governmental initiatives (see <http://www.developingaglobalperspective.ca/links/>). The Ontario Ministry of Education promotes inquiry-based learning in public school classrooms, placing students' questions, ideas, and observations at the centre of the learning experience. The natural environment is one effective site for these intuitive queries to be explored (Chiarotto, 2011). However, shortcomings exist in the sustainability of educational policy initiatives to promote environmental 'Education for Sustainable Development' (Payne, 2016).

Schoolyard pedagogy

Many non-policy-oriented K-12 curricular initiatives are ones that promote the schoolgrounds themselves as sites for environmental and sustainability education, environmental and habitat enhancement, and for leisure and play (Chawla et al., 2014; Williams & Brown, 2012). Studies on schoolground learning indicate that specific curriculum/subject links are made with science, language arts, mathematics, social studies, and writing (Williams & Dixon, 2013). Research also shows that the schoolyard can serve as a site for personal, social, physical, and moral development, which also addresses self-concept,

self-esteem, and motivation (Williams & Dixon, 2013). Schoolyards provide an experiential learning setting where students can explore, investigate, and observe environmental phenomena (Bowker & Tearle, 2007). Experiential, inquiry-based learning involves teacher-facilitated interactions among learners, educators, and the environment. According to Kolb (2014), experiential pedagogy includes experience, observation, and reflection, the formation of new knowledges, and application and transfer as components of the learning process. Inquiry-based learning places a focus on student's own questions, observations, and interpretations of the world around them as a primary method of instruction (Fielding, 2012). For this study, I apply the term schoolyard pedagogy to describe the experiential, inquiry-based learning that can occur in schoolyards.

Community academic partnerships

Academic service-learning provides students with experiential learning opportunities that meet a real community need and are based on 'authentic real-time situations in their communities' (Furco, 2010, p. 228). Reciprocal service-learning initiatives focus on ensuring that all parties involved in the service-learning experience receive benefits (Crabtree, 2008; Porter & Monard, 2001). In university settings, one example of a reciprocal service-learning initiative is the CAP. CAPs are collaborations between community partners and the university, involving mutual decision-making, shared goals, and reciprocity, alongside meeting a community need (Voss, Mathews, Fossen, Scott, & Schaefer, 2015). Service-learning CAPs can be a valuable educational tool that enables students to apply classroom content to real-life situations through experiential learning (Murray, 2013).

According to Drahota et al. (2016), successful CAPs improve communication, cooperation, and trust between community stakeholders and researchers, generate feasible and useful innovations, and help close the gap between research and community practice. Interest in creating and sustaining CAPs is strong yet challenges persist, including project timeframes, difficulty in engaging academic partners, insufficient resources to cover faculty time, difficulty aligning faculty expertise and research agendas with community priorities, and project/partnership sustainability (Kegler et al., 2016).

Theoretical framework

Theories are developed by scholarly readings and research both with/in discipline and outside it (Anfara & Mertz, 2015). Theory is also formed through intuition, experience, observation, reasoning, and practice, actually putting the theory to the test (McLean, 2011). Ozer (2006) asserts that theoretical framing of how school garden programs exert their effects is important for informing

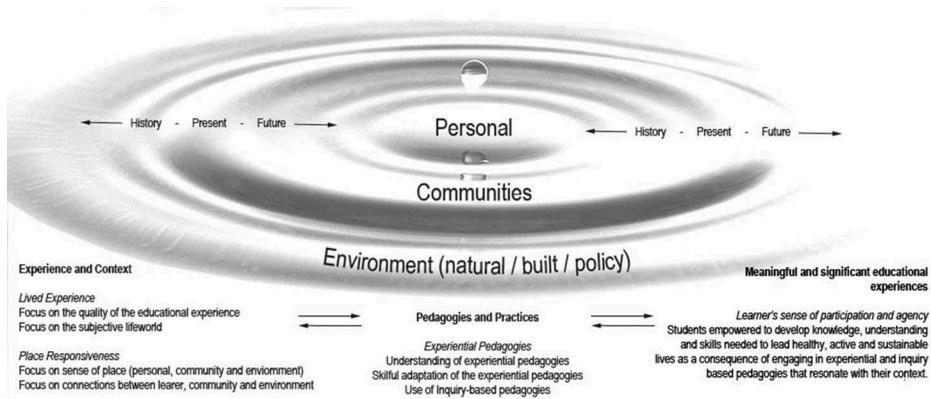


Figure 1. A framework for the socio-ecological educator.

practice and for the development of a coherent research and evaluation literature.

In the realms of education and research, socioecological approaches must consider the reciprocal relationship between both people and their environments (Wattchow et al., 2014), as this study purports. Wattchow and colleagues propose a socioecological framework for physical, health, environmental, and outdoor education, which resonates well with my study purpose. The framework (Figure 1) comprises four foundational concepts: (1) lived experience, (2) place, (3) experiential pedagogies, and (4) agency and participation. The framework provides a mechanism to ask, ‘How do we develop people’s understanding of their experience within the context of their social ecologies through education’ (Wattchow et al., 2014, p. 65–66)? The authors’ hope is to compel researchers and practitioners to consider these four concepts and the connections among personal, social communities, and environmental ecologies with a view toward the opportunities for students and teachers to develop new understandings and ways of being.

The four foundational concepts will be applied to this study to more fully understand how students and teachers experience the schoolyard. A social ecology of *lived experience* draws on spatiality, corporeality, temporality, and relationality (Van Manen, 1990). Relevant to this study is the schoolyard as *place*. Place-based education is linked to experiential learning, inquiry-based learning, and outdoor and environmental education. As previously reviewed above, the schoolground serves as the site for *experiential pedagogy and inquiry* to occur as students explore, investigate, and observe environmental phenomena. According to Wattchow and colleagues (2014), a central aspect of socioecological education is the promotion of *agency and active participation* amongst learners. Agency and participation involve free choice and active participation, including decision-making processes. This socioecological framework, with its four foundational concepts and focus on impelling students

and teachers to connect with communities and environmental ecologies to develop new understandings, aligns with the present study. Study methods will be presented next.

Methods

In light of the study purpose and theoretical framing, transformative phenomenology served as the guiding methodology. Phenomenological inquiry focuses on lived experience as a source of knowledge and a rejection of the received knowledge of a single authority (Husserl, 1913/1931; Moustakas, 1994). Rehorick and Bentz (2008) extend the power of phenomenology to unearth the assumptions that ground and constrain experience by disclosing how the knowers themselves become enmeshed within their own investigations and are transformed when employing this methodology (Lewin, 2010). Questions that surface out of this methodological approach may include: How will one carry the insights of this moment into future experiences? How does experience open one to transformation? How does one know whether further transformation is desirable and what are the consequences of transformation? (Lewin, 2010).

Transformative phenomenology aims to 'help the scholar-practitioner bring phenomenology to practice' (Rehorick & Bentz, 2008, pp. 6–7) and acknowledges that studying a phenomenon holds inherent transformative potential. However, Lewin (2010) also prompts researchers to question whether transformation is indeed desirable. While transformative phenomenology resonates with the purpose of this present study and the CAP, it also provides a platform for critical consideration of the phenomenon under investigation.

Study sites and schoolyard project

The study 'sites' consisted of two fourth-year, 12-week (semester-long) experiential education elective courses at a mid-sized Canadian University (2012 and 2014) and two local elementary schools, which served as sites for the community-based project. The fourth-year experiential education course is student-directed. We meet 'formally' for 3 h each week but adopt a semi-structured approach to learning, with the professor establishing some initial structure and course content and students co-establishing course assessments, expectations, and content for much of the semester. The course description does indicate that the students will engage in a CAP during the semester. For both cohort years (2012 and 2014), that project consisted of the installation of an outdoor classroom. Unique to the 2014 school site is that it is home to two inquiry-based kindergarten classes, which represent the student and teacher groups that we worked with most closely on this project.

As mentioned above, these collaborations were components of a larger-scale 'greening Niagara's schoolyards' project, involving the installation of



Figure 2. Willow Arches.

outdoor classrooms. Relevant to this paper, a CAP was formed with each of the local schools after I was approached by several school parents familiar with the project, asking whether my undergraduate university students and I could install an outdoor classroom at their children's schoolyards.

The undergraduate students and I met with the various stakeholder groups on multiple occasions prior to project commencement, including the school teachers, school principal, kindergarten students, and parents. The projects were modestly grant funded, supporting the purchase of native Canadian plants and outdoor classroom learning materials. Two graduate students served as project 'experts,' facilitating the design and installation of the classroom. The fourth-year university students and I served as consultative facilitators, inquiring into what aspects of the classroom would be most welcomed and effective, querying the principal, teachers, students, and parents. After the design was co-established, the installation occurred during a one-week period with every student and teacher playing an active role in planting, watering, or spreading mulch. The result for each school consisted of several willow arches that served to establish a perimeter to the outdoor classroom, a small rock amphitheater for students to sit around for

outdoor classroom learning, mulch pathways, and 'learning stations' with garden beds and room for weather stations or white boards to be erected (Figure 2). Simultaneous to project installation, students in the university course observed and related with the students and school teachers to then write Ministry of Education-aligned outdoor/environmental focused-curriculum for the teachers' use.

Participants

Study participants from the 2012 cohort consisted of 18 students, 11 female and 7 male (20–25 years old). The 2014 cohort comprised 14 students (7 males and 7 females of the same age range). Having only undergraduate student data emerged as one limitation to the 2012 experience. I thus contacted nine school/community stakeholders (post-project 2014) inviting them to participate and only three responded, including one teacher, one parent, and one graduate student. Participants thus totaled 35. The research project underwent university Research Ethics Board (REB) review and consent was obtained from all participants prior to data collection.

Data collection

Congruent with phenomenological 'best practices' (Van Manen, 1990), I collected data by conducting one focus group session with each undergraduate student cohort (2012 and 2014) and sent individual short qualitative questionnaires to the school/community stakeholders (2014). Because meanings and answers arising from focus group interviews are socially rather than individually constructed (Berg & Lune, 2012), the study focus group sessions were designed with the intent to provide students with a forum to collectively reflect upon and articulate their lived experiences. The focus group session occurred one week after the end of each course semester. Each session lasted 1.5 h and was audiotaped. Focus group sessions were semi-structured, allowing room for general sharing and for concerns to arise while also consisting of pre-established questions about the schoolyard greening and academic community partnership experiences, successes, and tensions. Given the semi-structured and collective/reflective foci of these focus group sessions, I believe that the resultant responses were particularly generative and sapient (Morgan, 2001).

The school/community stakeholder qualitative questionnaires were informed by the 2012 cohort experience, which shed light on the need to empirically understand the community partnership perspective. Consent was obtained from the school/community stakeholders post-project (2014) to illuminate the successes and challenges of 'doing' CAPs and to elucidate specifics about the schoolyard project itself.

Data analysis

Both focus group sessions were independently transcribed and analyzed deductively (and separately). Deductive analysis begins with a theory and then identifies significant words or statements that provide an understanding of how the participants experience a phenomenon (Creswell, 2013), in this instance, the schoolyard project. I thus selected those words or phrases that aligned with the theoretical framework concepts of lived experience, place, experiential pedagogies, and agency and participation. According to Creswell (2013), the researcher next develops clusters of meaning, grouping significant statements into themes. The same is done with additional participant statements, in this instance, the school/community stakeholders. This approach to gathering and analyzing data from multiple sources is congruent with the intent of both bridging the scholar-practitioner gap and using theory to inform practice, inherent in transformative phenomenology (Rehorick & Bentz, 2008).

Data limitations

The study results that follow are somewhat limited by the data collection methods. Participant numbers, particularly the school/community stakeholders, are relatively small and thus not wholly representative. Moreover, there are limitations to data collected using focus groups. Focus groups may be viewed as controlled group discussions (Smithson, 2000) with a public performance aspect to them given their interactive nature. There can be challenges with dominant voices overriding other voices and a collective voice developing that may not be representative of individual perspectives (Smithson, 2000). These limitations may result in data that captures a limited or particular perspective. These co-constructed perspectives however possess their own merit, particularly when there is an extended group experience with the phenomenon itself (Carey & Asbury, 2016). The study participants spent the semester together in collaboration, and as such, I believe that the data collected and the results that follow are particularly sapient given the longer-term shared experience of the participants.

Results

Select quotes and paraphrases from the focus group reports alongside school/community stakeholder responses are presented here. I distinguish undergraduate students' gender (F or M) and commentary from each student cohort (2012 or 2014). All participant comments are anonymized with pseudonyms. School stakeholder responses are identified as P (parent), T (teacher), and G (graduate student). As mentioned above, these results are grouped according

to the theoretical framework concepts of lived experience, place, experiential pedagogies, and agency and participation. The interpretation and implications of these results relevant to the larger body of literature will be considered in the Discussion section.

Lived experience

All the students in both cohorts talked about the success of the CAP experience as did the teacher, parent, and graduate student. For undergraduate students, success was related to accomplishing the project. For the school stakeholders, success was represented by the project collaboration and the beauty and functionality of the classroom itself. Arthur (2014) asserted, 'putting a whole experiential education course [into practice] with the Community Academic Project (CAP) project was eye opening.' Brooke (2014) talked about how the course and CAP will transfer into her future/life work, saying she learned about leadership and how to be a positively contributing group member. Lisa (2012) commented, 'My impression is that the kids will benefit from this and that [this success] may push other schools in the community to do something similar.' Francine (2014) reported, 'the CAP taught us to really get out there and talk to the community, to [identify] resources, ... and help them just become their own experiential educators.'

More than half of the students from both cohorts talked about accountability to the community project and schools. Arthur (M, 2014) expressed, I invested a 'lot more of my personal values because it was something that we're putting our name on and putting it out into the community instead of it just being a paper that I'm writing and giving to a teacher.' Victoria (2014) concluded, 'I was checking my email like every five seconds. I felt more accountable to them because they were school teachers and we had the project to follow through on.' Marie (2014) added to this, stating, 'that kind of reliance causes you to be more invested and a little more responsible I'd say, because the outcomes are different from a normal classroom, you're not just getting a mark.'

Marcus (2014) commented that for the elementary students and parents, the actual planting in the outdoor classroom was highly engaging, stating, 'On an individual level, I observed several students engaging in various forms of free play (i.e., travelling through the maze of mulch trails and willow arches).' Joelle (2014) spoke about the positive collaboration that took place, 'providing participants with an opportunity to demonstrate their own abilities and expertise and to grow from the experience.' Sara (2014) reported that more structured parameters for the out-of-classroom meetings and CAP activities would have helped. Sammy (2012) concluded, 'I really felt stressed out because deadlines were coming up, but we seemed to keep pushing deadlines. I mean,

that was a real challenge for me to allow things to flow and just to allow things to happen.’

Place

Place was important to all participants according to their reports. For the undergraduate students, place provided them with a broader context from which to understand the community they were living and studying in as many never spent considerable time off campus. For the school/community stakeholders, the schoolyard was a central place in their learning and life/worlds. Mac (2012) talked about the beautiful outdoor classroom space. Josh (2014) talked about the significance of the region and the topography and demographics being conducive to ‘creating experiential classrooms for the Niagara region’ as something he felt connected to. Joelle’s (G, 2014) sentiments countered this, concluding, ‘There will be limits to ... how “natural” an outdoor space can be in any urban and suburban setting.’ ‘Meeting with Claire [graduate student, design expert] and spending time with students at the school site was a “huge turning point” in the course,’ according to Drew (M, 2012). ‘The planting day with all the students working together’ was impactful, according to Margaret (2014). ‘Several kindergarten students were engaged in the [schoolyard] gardening all morning!’ she wrote, expressing her surprise. The installation of the outdoor classroom engaged teachers who may never have considered using it as a learning space/place, according to Margaret.

All of the students reported feeling a strong sense of accomplishment about completing the community academic project as did the school teacher and parent. Gloria (2012) said, ‘Did you see how excited the teachers, kids, and parents were’ [post project]? Warren (2012) wrote, ‘I was very surprised at how fantastic it [the outdoor classroom] looked and how much work we did in such a short time.’ One student, Lisa (2012), commented, ‘My impression is that the kids will benefit from this and that [this success] may push other schools in the community to do something similar.’ Margaret (T, 2014) reported that,

When using the outdoor classroom we find our students are looking more closely at nature (e.g., finding leaves, insects, looking at plants and birds). They often bring their wonder and excitement back to the classroom. Many times this leads to inquiries on the nature they have observed outside. We research our wonderings and share this knowledge with each other.

Marcus (P, 2014) asserted, ‘There was dedication to the project from [the school] teachers, Brock undergraduate students, graduate students, and Brock faculty members. The collective energy, enthusiasm and expertise was contagious and a lot of progress was made in a very short time.’ For this parent,

there was significance in the willow arches that were built, stating ‘They [the willow arches] are (for me) the most visible reminder of the efforts that went into the project and serve as an identifier of the potential for the outdoor classroom.’

Margaret (T, 2014) stated, ‘It was great to see the university students interacting with our kindergarten students in such a positive way and all working towards one common goal!’ The undergraduate students from both cohorts expressed how they could imagine the classroom as a site for environmental and sustainability education, sad to miss seeing it in action. They also wondered how the Ministry of Education lesson plans that they designed would get applied.

Margaret (T, 2014) shared her belief that without the sustained effort of one of the graduate students, the project may have not seen completion. Marcus (P, 2014) expressed his disappointment that ‘Some supplies (i.e., mulch) were promised but not delivered on by a local business for unknown reasons.’ He also shared that he wasn’t sure that the space was being used, highlighting concerns about place sustainability and the feasibility of the environmental-focused curricula as a result. Margaret (T, 2014) expressed similar concerns that one parent promised wood chips that never arrived and ‘we realize now that we needed a committee who could care for the outdoor classroom in the summer, so we would not feel so overwhelmed returning in the fall,’ describing the overgrowth that happened.

Joelle (G, 2014) questioned the way that the outdoor classroom was being used when she returned during the summer, feeling discouraged that ‘the outdoor classroom had not been maintained in various ways (i.e. grass had grown over mulch pathways so they could no longer be seen...some willow arches had come apart).’ ‘These projects should not be seen as one-off events but as living spaces,’ she added.

Experiential pedagogies

Reports relevant to experiential pedagogies underscore the ways in which the outdoor classroom would serve as a site for teaching and learning in both formal and nonformal ways. For the undergraduate students, actually learning about experiential education at the undergraduate level while ‘doing’ something very experiential highlighted the positive potential of this approach to learning. Margaret (T, 2014) remarked how using the schoolyard to ‘do’ real-world experiential, inquiry-based learning holds particular relevance to the requisite science curriculum as well as math and language. In particular, she cited demonstrating an awareness of and exploring patterns in the natural and built environments and describing natural [environmental] consequences, as being key curricular learning. She also noted that the outdoor classroom and experiential, inquiry pedagogies applied there were centered on a specific

Ministry unit involving, ‘demonstrating an understanding of the natural world and the need to care for and respect the environment.’

Most students in both cohorts talked about the unique focus of ‘doing’ experiential education as they learned about experiential education theory through the coursework and the CAP. MM (F, 2012) stated, ‘The content of the course and CAP was what we took away from [these activities], and what we learned and taking responsibility for ourselves.’ Josh (M, 2014) concluded, ‘I see this class as almost like a little gem, like comparing it to a complete opposite of like a sociology class where you sit in a lecture hall of five hundred people and they’re just talking at you.’ J.D. (F, 2012) commented that, ‘Like this is an educative education class, actual experiencing the education itself. We actually got to you know, talk and discuss about our future plans within the classroom, about our marks, about everything.’

Kara (F, 2014) reported, ‘I was like a creature of you need to go to school, you need to do it like this, school is for everybody but now I’ve realized that maybe it’s not. My perspective has changed.’ Marie (F, 2014) said that the [experiential education] course and community project ‘made me hopeful for the future of other students going through school.’ Many students expressed how keen they would have been as elementary students to have the environmental/sustainability curriculum being taught in the inquiry-based manner that the teachers promoted. Joelle (G, 2014) indicated that ‘the outdoor classroom has been beneficial for the kindergarteners’ inquiry based learning, which is becoming a prominent component of early childhood education in Ontario.’

Most students in both cohorts also talked about challenges. Jack (2014) weighed in, stating, ‘You can find that there are elements of [experiential education] that don’t work and need to be perfected, um so I think that there is just as much problem with the new style as the older styles.’ Zelda (2012) shared ‘the timing was off and I really wasn’t prepared for it [experiential approach]; I would have preferred this type of learning environment and CAP experience to be introduced maybe at some point in third year or something.’ Joelle (G, 2014) expressed, ‘This project helped me to understand the difficulties of practicing experiential forms of learning in outdoor settings within the public education system.’

Agency and participation

Reports about agency and participation primarily focus on the undergraduate students’ insights about personal responsibility relevant to the student-directed course and their involvement with the CAP, teachers, and students. The school/community participants commented on the agency that those students who participated in the installation experienced and also expressed concerns about project sustainability.

Danny (M, 2012) stated the course became, ‘very personal when we create it ourselves, we’re opening up a whole new level of vulnerability.’ Mac (M, 2012) shared, ‘I learned how to step up and step back. I’ve got to practice that.’ Judd reported, [contributing] ‘our own ideas about what we’d like to learn, how we’d like to learn was I think, pretty valuable.’ Danny (M, 2012) stated, ‘I think we successfully, kind of proved that we wanted to be here. And proved like, some stereotypes of students wrong. So we didn’t place any value on attendance [in the syllabus we co-created], but yet we all showed up.’ Kara (F, 2014) declared, ‘knowing that you too [professor’s name], were engaged in this [course] as well, and like we want to put out something good for you and for everybody so you become more invested in the class as compared to how you might be with other teachers.’ Margaret (T, 2014) expressed her surprise at ‘how much ownership the [elementary school students] took. They remembered what plants they placed [the previous year] or where they spent time moving woodchips.’ Because the JK students this past year (2015) didn’t ‘have a special day’ like the year before, they have less ownership in taking care of and respecting the outdoor classroom, according to Margaret.

Marcus (P, 2014) reported that, ‘I think many of the [elementary school teachers] were intimidated by the idea of using the outdoor classroom and were unwilling to risk a less traditional form of delivering lessons’ after the enthusiasm faded away. Added to this was ‘the relative lack of “buy in” from the new school principal and other teachers outside of the inquiry-based (JK/SK) programs,’ according to Marcus. He went on to emphasize the need for a within-school ‘champion dedicated to recruiting and retaining individuals within the [elementary school] community to assist with the ongoing demands maintaining an outdoor classroom.’ MM (F, 2012) said, ‘I think that what you put into it, you kinda’ got out of it’. Joelle (G, 2014) emphasized that future projects should ensure the involvement and participation of ‘as much of the school community as possible and to work to build a network of individuals who are motivated to the upkeep and development of the outdoor classroom space.’

Concluding remarks

The deductive analysis of the data from both undergraduate student cohorts and the teacher, parent, and graduate student comments aligned well with the theoretical framework themes of lived experience, place experiential pedagogies, and agency and participation. While I delineated the cohort year and the student’s gender, there were no real differences that arose resulting from these variables.

Discussion

In keeping with transformative phenomenology, I focus here on how the results inform and transform practice (Rehorick & Bentz, 2008) and add to

the body of knowledge surrounding schoolyard pedagogy as a form of CAP – one that promotes environmental education and sustainability. This discussion will be grouped into sub-themes relevant to the three key study queries, including: (1) the co-design and installation of outdoor classrooms; (2) co-developing schoolyard curriculum that aligns with Ontario (Canada) Ministry expectations; and (3) the topic of ‘greening’ public access schoolyards. The results from my study will be integrated with previous literature relevant to each of those three sections in the discussion that follows.

Co-design and installation of outdoor classrooms

In accord with previous study results (Breunig, 2014; Furco, 2010; Kreber, 2013), participants from this study reported feelings of accomplishment and an increased sense of accountability (undergraduate university student reports) relevant to the lived experience of participating in the schoolyard project. All participants reported feeling a sense of accomplishment. The undergraduate students reported how positive they felt about the lived experience of spending time with the elementary students at their school site, describing it as a turning point in the course itself. The teacher, parent, and graduate student reported the planting day as being impactful on the school community given everyone’s engaged involvement. Congruent with community university partnership goals (Eckerle, Munger, Mitchell, Mackeigan, & Farrar, 2011; Furco, 2010), the co-design of the outdoor classroom and installation, involving all members of the school community, aligns with the ideals of CAPs. CAP’s deliberate focus on communication and school/community stakeholder planning in all aspects of the project (Drahota et al., 2016) were hallmarks of its success, contributing to strong feelings of agency and ownership.

Interestingly, a change in school administration and less ‘buy in’ post project led to challenges with schoolyard maintenance and sustainability. As Marcus (P, 2014) reported, many of the school teachers seemed intimidated by the idea of using the outdoor classroom, and there was a ‘relative lack of “buy in” from the new school principal.’ Marcus (P), the school teacher, and the graduate student all concurred that there is a need for a within-school champion dedicated to recruiting and retaining individuals in the elementary school community to assist with the ongoing demands of maintaining the outdoor classroom. Scott, Boyd, and Colquhoun (2013) describe how teachers from their study who participated in out-of-classroom pedagogy were impacted by school culture, other teachers’ inertia, and school leadership. Teachers in another study reported that they failed to make regular use of the outdoor learning space, stating that the ‘real work’ still seemed to take place within the classroom (Maynard, Waters, & Clement, 2013) and this concern resonates with my study results.

As the graduate student (2014) articulated in reference to some of the concerns expressed by other study participants, not only is there a need for 'buy in' but also 'these projects should not be seen as one-off events but as living spaces' that warrant a sustainability plan. Green and Kearney (2011) point out that project-based initiatives typically address a discrete, immediate need where results can be reported in a relatively short time period, suggesting that an alternative approach is to think about the sustainability of the desired longer-term outcomes.

Schoolyard curriculum that aligns with ministry expectations

The kindergarten teacher in this study remarked that the schoolyard facilitated students 'doing' real-world experiential, inquiry-based learning, with direct links to the requisite science curriculum as well as math and language. Previous research demonstrates that schoolgrounds often link outdoor/environmental learning with science, language arts, mathematics, social studies, and writing (Williams & Dixon, 2013). The undergraduate students expressed disappointment in not being able to observe the Ministry-specific lesson plans that they had designed (as one component of their undergraduate coursework) being applied in the outdoor classroom.

There was otherwise no real mention of schoolyard pedagogy supporting the Ontario Ministry curriculum in the study results. In part, this may be a result of the outdoor classroom seeing less activity than anticipated as the parent, teacher, and graduate student all remarked that beyond the inquiry-based kindergarten classes, the schoolyard saw little use. As Dymont (2005) identified in one Ontario-based mixed-methods study that investigated 45 schoolground greening initiatives, teacher experience and confidence in teaching outdoors, school curricula requirements, and educational policies can detract from teachers choosing to use the outdoor classroom as a site for learning, as also confirmed by Feille (2013). In studies conducted by Scott et al. (2013) and Dillon and Dickie (2012), teachers who were inexperienced in teaching outdoors (as was the case with the majority of teachers from both elementary schools involved in my study) expressed concerns that their students would behave poorly outdoors and felt anxiety about their own teaching competence. Challenges with teaching for and about the environment in an outdoor classroom also include stresses on teachers' time and school resources (Breunig et al., 2014; Maynard et al., 2013; Sharpe & Breunig, 2009) and issues of safety and control (Feille, 2013). Teachers in one study expressed concern that students would behave poorly outdoors (Scott et al., 2013) although there was no instance of that from these study results. The need for relevant professional development and training specific to schoolyard pedagogy is evident (Breunig et al., 2014; Feille, 2013).

It is also possible that in the instance of my study, some of the aforementioned educational policy initiatives in Ontario did not actually impact decisions about whether or not to integrate environmental education content and whether or not to use the schoolyard as a teaching site. A strong commitment to environmental education and schoolyard pedagogy may actually motivate individual teachers more so than any policy does. In fact, there are stories of outdoor/environmental educators who feel isolated from their classroom-based colleagues, describing themselves as 'lone wolves,' but even this does not deter their motivation and commitment (Breunig, Russell, Murtell, & Howard, 2013). Likewise, a community of practice amongst committed teachers creates momentum as teachers share knowledge transfer from the outdoor learning environment to the indoor learning one (Fägerstam, 2014). Perhaps most significantly and resonant with my study results, 'free play' and child-initiated inquiry in the outdoor classroom may be the strongest catalyst for learning (Maynard et al., 2013).

Greening public access schoolyards

Resonant with other previous study results (Breunig, 2014; Williamson, 2014), the CAP, with its focus on schoolyard pedagogy and the environment, enhanced students' understanding of ecological principles and increased awareness of environmental issues. Williamson (2014) studied school students' engagement in local learning, concluding that students experienced an enhanced curiosity about ecological principles and the local *place*. Resonant with those results, the inquiry-based classroom teacher in my study identified that the kindergarten students demonstrated an enhanced awareness of and in the natural environment and schoolyard, citing students' enhanced curiosity about finding leaves and insects and looking at plants and birds, for example. She also noted that experiential, inquiry-based pedagogies helped promote students' understanding of the need to care for and respect the environment. The teacher spoke about the outdoor classroom as a learning site for looking more closely at nature and bringing that wonder and excitement back to the classroom. The undergraduate students from both student cohorts expressed how they could imagine the classroom as a site for teaching and environmental and sustainability education and talked about their own positive experiences with 'doing' experiential education as they learned about experiential education theory.

As reported, outdoor/environmental learning, 'free play,' and leisure time in the schoolyard classroom also led to enhanced sense of agency, participation, and positive group dynamics among a majority of study participants. The undergraduate students from both cohorts emphasized the added sense of responsibility they felt toward the school/community because there was an anticipated outcome and people counting on them. Study participants

also expressed being fueled by the collective energy and enthused by the collaboration. The school teacher remarked about the positive impact of having the university students interacting with the elementary school students, all working toward one common goal in installing the outdoor classroom. These results confirm a number of past studies, underscoring the reciprocal learning relationships that were established (Crabtree, 2008; Wattchow et al., 2014).

The teacher talked about how much ownership the elementary students had relevant to the outdoor classroom as they recounted what plants they helped to plant the previous year. As previously indicated, teachers have witnessed increased motivation, communication, and participation among students (Fägerstam, 2014) and teachers themselves are transformed in their practice (Feille, 2013). Yet, relevant to my study results and as mentioned above, the majority of teachers were either intimidated by the prospect of schoolyard pedagogy, lacked the training, or simply focused on delivering the requisite curriculum in the traditional classroom.

Concluding remarks

In writing these concluding remarks, I consider what lessons can be gleaned from these results and (in keeping with transformative phenomenology) query how these lessons inform and transform practice.

- (1) Inquiry and experiential-based pedagogies at the kindergarten and post-secondary levels are both effective and challenging (Furco, Jones-White, Huesman, & Gorny, 2016; The Institute for Education Leadership, 2012). Bringing environmental education and other educational theories to practice impacts learning, motivation, commitment, and interrelationships for both students and teachers (see Fägerstam, 2014; Feille, 2013; among others reviewed above). Interestingly, the kindergarten students in the elementary school and the fourth-year students at the undergraduate level were those most exposed to these inquiry and experiential-based pedagogies, raising the question, can these approaches be applied across more levels of education? And how can pedagogues continue to build on student-initiated play and curiosity to inspire curriculum?
- (2) How can the curriculum more fluently and efficiently align with Ministry requirements and promote and link environmental and sustainability education across subjects (Williams & Dixon, 2013)? (How) Can educational policy go beyond articulating a vision for practice and actually enliven and embolden it? In the instance of this study, a change in teaching staff and administration negatively impacted the project and it was unclear whether educational policy

held any influence whatsoever. What promotes project efficacy and sustainability in the face of these realities?

- (3) The value of CAPs continues to be empirically investigated. The results from this study confirm the value of reciprocal learning relationships and the positive potential of authentic real-time community involvement (Furco, 2010). This study also represents another step to bridge the gap between research and community practice (Drahota et al, 2016), with a particular view toward examining young students' experiences in schoolgrounds learning, which persists as a gap (Fisher-Maltese & Zimmerman, 2015).
- (4) Finally, from an informative/transformational practical perspective (Rehorick & Bentz, 2008), one of the undergraduate courses I teach this Fall (2016) will return to the 2014 schoolyard site given the teacher, graduate student, and parent reports that there is 'work yet to be done.' We will ask what support we can provide and will work with the school community to accomplish their objectives. As the graduate student aptly put it, these projects are 'living spaces' that require longer-term care and attention. Project sustainability plans should be carefully considered prior to CAP commencement and in collaboration with the community partner. This has been an important lesson for me and the undergraduate students – one that will inform our practice and future initiatives relevant to the larger-scale 'greening Niagara's schoolyards' project and its evolution.
- (5) Might there be an opportunity for the inquiry-based kindergarten classroom teachers to begin to develop a set of best practices and a community of practice? I believe there is positive potential in that prospect.

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