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Nurture through nature: fostering early childhood students' understanding of outdoor learning spaces.

Final Report March 2024

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Dr Alison Moore and Marcella Towler[1]

[1] Researcher's biographies are included in Appendix 1.

Project Summary

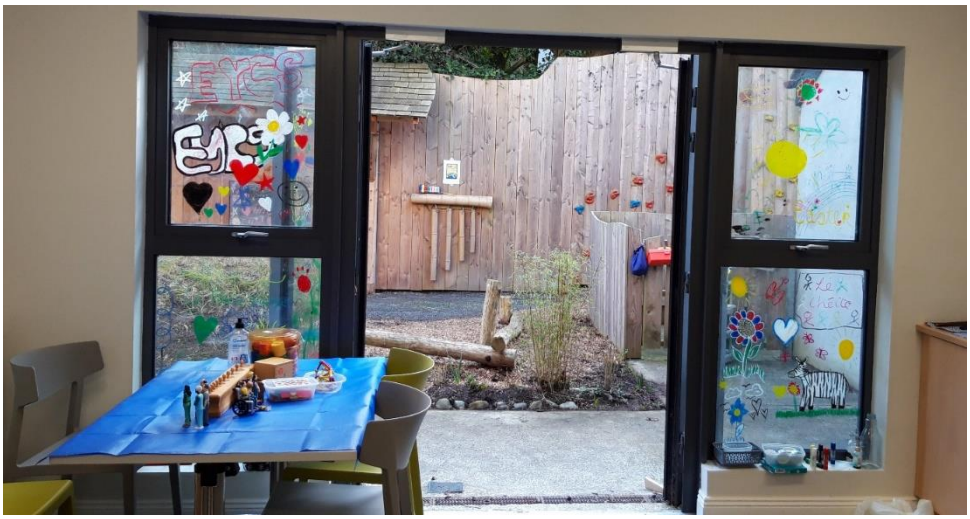
This two-phased research project sought to investigate Early Years and Childhood Studies students' developing understanding of outdoor learning spaces as they embark on their unique learning journeys as professional early years educators. Froebelian principles were the lens through which we examined the data. At the outset, it is important to note that although the researchers facilitated, organized, and analysed the data on outdoor learning spaces, the knowledge and insight emanated from the students reflections. During the study, the researchers were "…teacher and scholar, educator and pupil, all at the same time" (Froebel, in Michaelis and Keatley Moore, 1915,p. 77).

In the context of outdoor education in Ireland, the research is particularly timely for fostering a potential impact. From a legislative perspective, the *Child Care Act 1991 (Early Years Services) Regulations 2016* stipulate that children should have access to an outdoor spaces on a daily basis (Tusla, 2016). *The National Physical Activity Guidelines for Ireland* state that promoting physical activity for children "including through play, as an integral component of education and training programmes that lead to qualifications in early childhood care and education' (Department of Health, 2016,p.20). During the Covid 19 pandemic, early education settings increased their outdoor provision. A guidance document "*When the Roof is the Sky: Guidance for the registration and inspection of early years services operating outdoors*" has recently been developed (Tusla, 2023). The research has the potential to contribute to pedagogical approaches in Further and Higher Education for Early Years Educator training, the inclusion of which is necessitated by the aforementioned developments.

Flannery Quinn and Parker (2019) have explored how teacher trainees connect Froebel's pedagogic principles to their practice. Similar in its aim, this research contributes to the knowledge base of students' interpretations of a Froebelian approach in relation to outdoor education.

The first phase of the research was conducted during student workshops[2] in the School of Education Outdoor Learning Space in University College Cork, the development of which predates the research[3]. Fourteen students[4] participated in phase one of the research.

The outdoor space extends the Teaching and Research Laboratory Classroom. In the words of a student participant: *"Freedom of movement and no restrictions on where you can and cannot go when moving between the outdoor and indoor space"* (Student Participant 7[5]).



The sensory path of different surfaces is surrounded by a sensory area which includes light refractors, blackboards, mirror, water funnel and wind chimes as the path curves towards the climbing wall.

[2] For detail on the pedagogical approach used in workshops, see Appendix 2.
[3] The design and development of the School of Education Outdoor Learning Space is discussed in Appendix 3.
[4] The cohort of students on module ED1012 from which the participants were recruited was one hundred. Fourteen students from this cohort volunteered to participate in phase one of the research.
[5] SP will be used to denote student participant going forward in the discussion.

The central area includes an accessible sand area, balance beams and a grassy mound with a tunnel underneath. The outdoor area was completed in March 2020 (Cunneen and Towler, 2023).

The second phase of the research was undertaken during students' professional practice placements in early education and school settings. Ten of the initial fourteen students participated in phase two.

The project supported a Froebelian approach to education in the following ways:

Firstly, Froebelian principles and writings relating to a Froebelian approach were the lens through which we examined the data. In the findings and analysis section of the report, connections to Froebelian principles and literature are interwoven with the discussion of the four research themes.

Secondly, students were supported in their unfolding understanding of a Froebelian approach. For example, in the focus groups in both phases of the research, students were given the opportunity to explore potential links between their experiences and a Froebelian approach. Students were encouraged to make connections to their own understanding of Froebelian education rather than to specific Froebelian content or writings. Additionally, it was clear from phase one of the study that students were at different stages in their evolving understandings of a Froebelian approach. The researchers felt that regular engagement with Froebelian principles could support the process of understanding as it unfolded. To assist student engagement with Froebelian principles, a print-out of the principles from the Froebel Trust was included in each student's reflective journal.

Consequently, Froebel's approach to education and care is being promoted and practised amongst the next generation of educators which reflects the aim of the Froebel Trust. In relation to education and professional development, Wasmuth (2022,p.30) has noted "To be a Froebelian on this level means to familiarize future (and veteran) professionals with Fröbel's ideas and enable them to reflect on their role as an educator and advocate of young children's learning".

Thirdly, the researchers followed Froebelian principles throughout the design and implementation of the research. Students learned from their own self activity during the workshops in phase one. "To learn a thing in life and through doing is much more developing, cultivating and strengthening than to learn it merely through the verbal communication of ideas" (Froebel 1885,p.2).

As students engaged in activities, the workshop tutor acted as a co-constructor of knowledge with the students. Through reciprocal interactions, the conversations that emerged formed the basis of introducing relevant ideas or theoretical content. The ideas for discussion therefore emerged from the students' self-activity thus contributing to meaningful learning experiences. Reflective discussions with the group at the end of workshops also facilitated potential meaningful understanding[6].

The link and flow between the indoor/outdoor reflect the Froebelian concept of unity and connectedness. Students learned through their own self activity in workshops and through their own reflections throughout the project. The concept of freedom with guidance was epitomised in the support provided to students during workshops in phase one and in the support linking to Froebelian principles in phase two. Relationships with student participants were strengthened during the research. The researchers feel that they have become more Knowledgeable, Nurturing, Reflective Educators as a result of the project[7].

Three outcomes from the final report are:

- Student's understanding of outdoor learning spaces is fostered through first hand experiences in such spaces and from reflection on those experiences.
- Time for individual reflection and for reflective discussion with supportive peers and tutors/lecturers contributes to unfolding understandings.
- A transition in mindsets towards outdoor learning spaces is needed. The natural aspects of open-air environments enlighten hearts and minds and nature nurtures an emergent curriculum.

The acronym GROWTH encapsulates the overall findings from the research. The acronym has been chosen to represent the findings in a summative format. The word itself represents the personal and professional growth which has occurred for both the students and researchers. Moreover, the word growth refers to some of the nature-based activities that were both present and absent at various stages and in various settings throughout the research. A more detailed discussion of the acronym and how each of the letters represent the findings from the study is included in the conclusion of the report.

[6] See Appendix 2 for more detail of the pedagogical approach used in workshops.
[7] Due to the constraints of the word count, detailed reflection has not been included but may be included in other publications in the future.

The report firstly outlines the research design, methodology, chosen research methods and ethical considerations. A discussion of the findings precedes conclusions from the study.

Research Design

We designed our research into two distinct phases supporting the findings from Holman and Richardson (2021,p.324) who considered that the *"explicit knowledge gained from studying a degree course, and the tacit knowledge and skills that are gained through placement should be viewed as a combined approach rather than two separate entities which should, in turn, aid in confidence building"* .

Phase one of the study took place between February 2022 and August 2022. Fourteen students participated in this phase of the study.

Phase two commenced in September 2022 to May 2023. The students were on their 13-week block practice placement between January and April. Ten students from the initial fourteen participated in this phase.

The research questions from both phases are included in Appendix 4

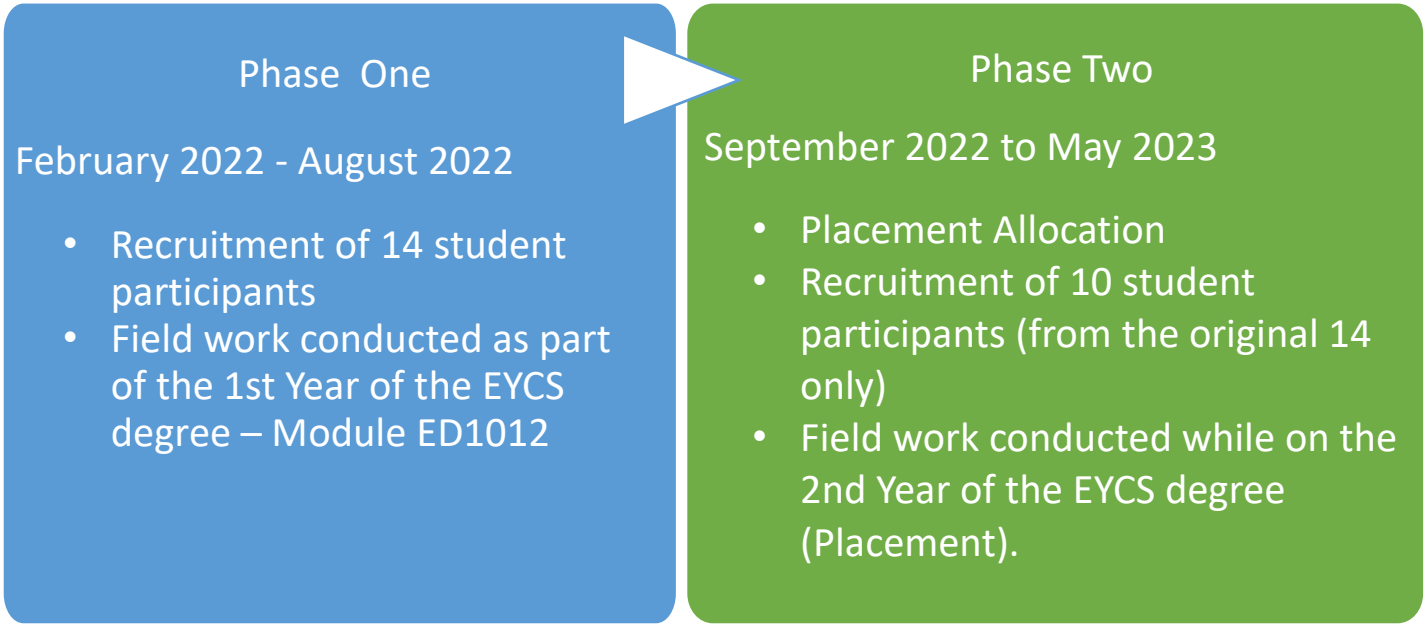


Figure 1: Summary of research design

Methodology

Our research was a qualitative study and interpretivist in design which supports the view that Froebel did not tell us exactly what to do but he considered that '...education is about causing thought and making a better world' (Bruce, 2021, p.148). We cannot tell our students what to do in the multiplicity of professional roles that they might find themselves. It was important to us that our approach would facilitate the students to freely explore the outdoor learning space (in phase one), as we wanted to understand how they interacted with the space and how they interpreted this through their own lived experience. This research drew on Critical Reflective Practice Models (Schön, 1983,1987,1991; Hallet 2016) with our research design facilitating students' reflecting 'In and on action' (Schön, 1983), in both phases of the research.

Research Methods

Three methods of data collection were employed in phase one, namely reflective maps, an associated reflective portfolio and focus group.

Reflective Maps and Reflective Portfolios

The reflective maps (Figure 2), were envisaged as the first step in the reflective process and were used as a 'tool' to capture student reflections. This tool enabled students to document their thoughts, feelings and learning during and at the end of their workshops in the indoor/outdoor learning space. This then facilitated a more in-depth reflection for the purposes of their reflective portfolio. Hence reflection-in-action and reflection-on-action were integrated into the workshops (Schön, 1983,1987,1991).

The reflective maps were adapted from the concept of an empathy map. Empathy maps originated in the business world with the intention of understanding customer perspective. Typically, the maps are divided into four sections or quadrants which consider what the user says, thinks, does and how they feel. The user (or customer) is placed at the centre of the map (Gibbons, 2018). When used in education the user at the centre is the learner and educators can consider the learners needs and base decisions on this. "The empathy map engages with the sensed, lived experience of an individual, alongside their cognitive and emotional world" (Cairns *et al*., 2021, p.144). In the process of fostering early childhood students' understanding of outdoor learning spaces, it was felt that students needed to consider their own thoughts, feelings, interactions and

learning, their own "sensed lived experience". Hence the concept of an empathy map was adapted to a reflective map where the student was at the centre.

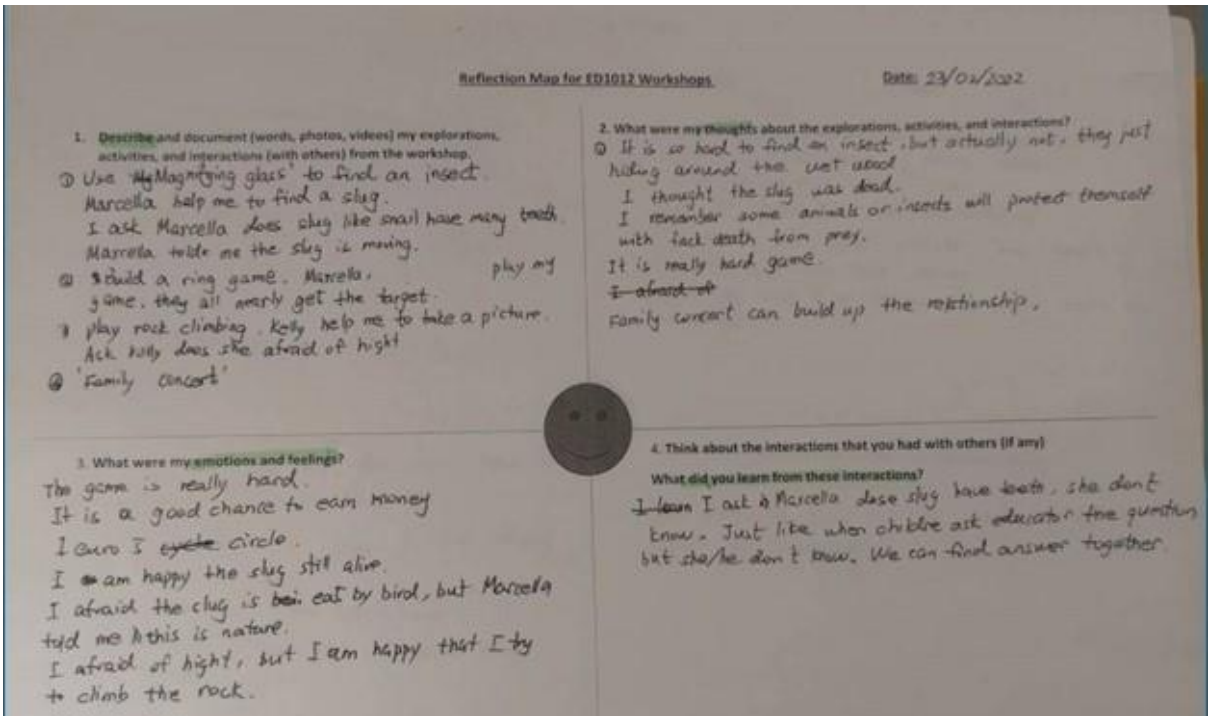


Figure 2: Example of a completed reflective map (SP6)

Focus Groups

Our third method of collecting research data in phase one was through a focus group which we held after completion of the workshops. As COVID restrictions at UCC were still in place at this time the focus groups were held on-line (see Appendix 6).

Liamputtong (2011, p:4) suggests that '*a focus group is a research tool that gives 'voice' to the research participants by giving* [them] *the opportunity to define what is relevant and important to understand* [their] *experience'.* It was important to us as the researchers that the students were given the opportunity to share their reflections of their experiences of the outdoor learning space as well as their thoughts and feelings of the pedagogical approach of the workshops.

A focus group question guide (Liamputtong, 2011, p.76) provided structure and focus to the session while also allowing for additional probe and prompt questions if clarity or expansion on a response was required. We conducted two focus group sessions in phase two of the research one

was held midway through their practice experience and one at the end of placement. The guiding questions are included in Appendix 5.

Reflective Journals /Zines

We introduced the concept of using a Reflective Journal (Holly,1991; Moon, 2004; Bolton, 2005) and we provided each student with their own hardbacked journal. There was to be no set structure or prescribed way of completing the journal, as Bolton suggests "*Journals are records of events, thoughts and feelings about a particular aspect of life…[it] can record anything, and in any way…*" (2004, p.164). However, we did ask that the students write a reflective entry at least once a week, over the period of the 13-week placement. We also included the Froebelian principles, in the front of their journals, to act as an aide memoire and to consider their reflections through a Froebelian lens.

We were also interested in the work of Brown *et al*. (2021), who have used zines as a reflective tool in relation to STEAM education. Zines, short for fanzines or magazines, are often handmade books/journals that can include creative methods such as drawings, narrative, comics, collage and poetry. "Zines allow a new kind of dialogue to take place between learners, educators and institutions" (Brown *et al*., 2021, p.8). This idea of incorporating creative forms of documentation resonated with the researchers and enhanced the creative methods encouraged in the reflective portfolio in phase one. The concept of reflective journal/zine was hence devised as a method for student reflection in phase two. Students were encouraged to use the creative approaches of a "zine" within their reflective journal.

Ethics within Research

We obtained approval to carry out our research from University College Cork ethics committee. We adhered to their revised framework and code of research ensuring we conducted our research to the "highest standard of professionalism and rigour" (UCC, Code of research conduct *2021*, p.2). We were also guided by the European Early Childhood Research Association (EECERA) Ethical Code for Early Childhood Researchers (Bertram et al., 2015) and aligned our research to the expectations of the Frobel Trust and ethical practice in research (2019). To respect the rights and dignity of the students who participated in the research, we considered the principles of:

a) Informed consent and the right to withdraw
b) Privacy and confidentiality/anonymity
c) Avoidance of harm as well as benefits to participation

As researchers, upholding ethical principles were of importance to us and we briefly describe our ethical approach to the above principles here. A more detailed account of ethical considerations can be found in Appendix 6. Students cannot be advantaged or disadvantaged by their participation in the research project, therefore, informed consent, the right to withdraw at any time without consequence and assurance of confidentiality and anonymity were upheld. A clear distinction was made between the 1st year module and participating in the research.

To ensure anonymity and confidentiality through phase one, student participants were assigned numerical identifiers. As phase two of the study was conducted during the student's placement experience, consideration was given to retaining an ethical stance at this stage. Once all students had been assigned their placement, we then cross referenced these with the students participating in the research to record the placement and the type of setting. A clear distinction was made between the placement module, the practice placement and participating in the research. Professional Practice Placement is undertaken in a variety of settings that include; Early Years Creches, Primary Schools, Special Educational Needs Schools, Social Care settings and several specialist experiences such as ASD units, Language Classes and Early Start programmes.

There were additional issues to consider with the use of on-line platforms during both phases of the research with Microsoft TEAMs being the UCC preferred platform. The benefits of participating in the research was discussed with the students. We were mindful to 'minimise the impact of [our] research on the [student] participants, either bureaucratic, emotional, physical or otherwise, seeking to adhere to an ethic of 'minimal intrusion' on the lives of participants (Bertram et al., 2015, p.7).

Although the research was not explicitly linked to the 2nd year placement module, we invited representatives from the placement to a meeting accompanied by the student allocated, and shared information about the research project and findings from phase one. This assisted in gaining the trust of the placement as well as giving reassurance that children or staff would not be observed. Placement providers gave signed consent for the students to undertake the research while on placement.

Data Analysis

An abundance of data was available for analysis as a result of the various data collection methods noted above[8]. This is something for consideration for others embarking on a similar seed corn project.

As researchers we adopted the thematic approach (TA) by Braun and Clarke [2006, 2013, 2022]. The six- phased approach to reflective TA, gave us a systematic way of collating and managing the data, more detail can be found in Appendix 7.

We spent time on familiarisation of the data where we looked at the data created from the reflective maps and reflective portfolios, returning to familiarisation, with the reflective journals, in phase two. We revisited data through looking at all electronic and hardcopies as well as then listening to recordings and reading transcripts of focus groups.

Coding, from both phases, gave assurance of rigour and authentic validity while acknowledging this is not a linear process. Braun and Clarke (2022, p.28) reminds us that ‘‘Not all text-or image-based information makes quality data…”, highlighting the need to reflect on data that provides “…rich and diverse meaning…’’. We also conducted what Braun and Clarke (2022, p.8) describe as ‘collaborative coding’, by not dividing the task of coding but choosing to both code, all the data sets available.

Our initial themes were then generated, and by preparing and presenting the findings and having opportunities to disseminate[9] our research, at this stage in the process, assisted us in consolidating our analysis. We were able to review the themes we had generated at this point to check the viability of our themes to respond to the research questions set for both phases of the study.

Developing and reviewing themes and refining, defining and naming themes, were very much overlapped at this stage of our analysis, the findings of which are outlined below.

[8] It is anticipated that this may be useful for future publications with only most salient findings presented in this report.

[9] Details of dissemination at different stages of the project are included in Appendix 8.

Findings and Analysis

Open air to open hearts and minds

The joy which can be experienced outdoors has been demonstrated in student reflections as has their awareness of the potential of outdoor spaces for fostering an awareness of biodiversity and nature as the impetus for emergent curriculum. Many biodiversity buddies/ creatures featured in both phases of reflections and discussions in the research. Slugs and snails were encountered in phase one workshops with spiders, ladybirds, Mr Worm and Mr Pidgeon[10] mentioned in phase two. Associated reciprocal learning between tutor and student and potentially students and children were apparent in the data.

"The use of the outdoors is very beneficial with the wildlife such as birds and worms in the ground that we have spotted. You can really see how a child would find so much interest in being outdoors and how much there is to learn from being outside compared to indoors" (SP13)

"I ask marcella [sic] does slug have many teeth because the snail have many teeth and I think the slug just like the snail. She did not know but she said we can find the answer together…I afraid the slug is eat by the bird. Marcella told me this is nature" (SP6)

In addition to the fear that a slug that we watched so closely would be eaten by a bird, other emotions relating to these biodiversity buddies included disappointment when spiders eggs didn't hatch, happiness when some did hatch, and joy when a moth landed and stayed on a student's finger.

The potential of working from children's interests in nature was noted, highlighting the idea that nature nurtures an emergent curriculum.

'*Being outside lets children learn about like topics and stuff that they wouldn't learn about as much in a classroom environment exploring kind of the outdoors. The questions that you come across are different to what they would question when they are inside compared to the outside. Being outdoors like when they come across the like ladybird or something, then they're stimulated to ask questions cos it's right in front of them, but had they been in the*

[10] See Appendix 9 for SP1 drawings of Mr Worm and Mr Pidgeon.

classroom it's probably a question they wouldn't have asked. So, they're learning new information from what they see outside as well (SP13).

Little moments of contentment both in and with nature are prominent in the data and reaffirm Froebel's appreciation of the joy that can be gleaned from nature. "The more intimately we attach ourselves to Nature, the more she glows with beauty and returns us all our affection" (Froebel in Michaelis and Keatley Moore, 1915,p.48). The reflections indicate the nostalgic potential of these activities.

> *"Under the tunnel I found a snail* (See Figure 3). *Holding the snail while being still I got to experience the snail poking its head out. This reminded me to a rhyme my dad used to tell me as a child. In [names country] there is a rhyme to get the snail to come out tempting it with food. Froebel talks about the right environment. This includes one that a child should connect to their own life (Flood and Hardy, 2013)* (SP1).

Figure 3: Snail which inspired student reflection.

Similarly, a student linked to their childhood when reflecting on planting flowers with her Mother and connected the experience to Froebel's principles:

"I remembered when I was a child and I was helping my mother plant flowers in our balcony. This shows, as per the Froebelian approach, the unity of life, the connectedness between everything in our life, the school, the family, the community, and the need to see the child as a whole (Tovey, 2020)" (SP3).

These nature-based reminiscences demonstrate the sensory potential of the first-hand experiences in the outdoors during workshops. The idea of "sensory flashbacks"[11] (Killian, 2023, p.40) comes to mind. A student noted: "*For me it was very relaxing. So it was somehow*

[11] Martina Killian discusses walking in nature and referred to sensory flashbacks from her childhood. The reference for the article is in the bibliography.

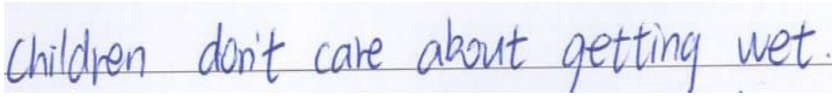
like home" (SP3) when referring to being in the outdoor learning space. The freedom fostered during those first-hand experiences was also noted: "*There was a great sense of enjoyment and felt very free when we were outside roaming around as we got to explore*" (SP12)

The Froebelian affective return from nature was further evident in the little moments of joy or "glimmers"[12] described by students.

"I had a déjà vu moment of when I was a child and stuck my tongue out to catch the Summer rain. I did the same thing today just to get a little feeling of the past" and "I sat on the grass all happy after the exercise and felt the grass beneath me and was at peace" (SP1).

The sensory aspects of nature which were not being exploited were also noted by students. For example, it was noted that there is a well-developed sensory room indoors in the setting, but the outdoor area has not been explored as a site for sensory exploration.

A further barrier to going outdoors that repeatedly featured in the research was the weather, in particular rain. The difference between adult and children's views on weather are captured below:



(SP9)

Figure 4: Student reflection on rain as a barrier to going outdoors

Another student mentioned that while on placement, a section of the outdoor area was taped off as it was too muddy after wet weather. Nevertheless, other parts of the space with mud seemed to attract attention from children. Similarly, it was noted that when natural aspects do not feature or are not in an abundance in an outdoor space, those that do emerge are a source of interest, for examples leaves blowing in or protruding through fences.

The architectural constraints of settings cannot go without mention. However, as one of the participants noted: *"No matter how big or small the site/space, Froebelian outdoor learning*

[12] Glimmers are peaceful or joyful moments that contribute to feelings of safety or calmness. The term originated with Stephen Porges and Deb Dana. The concept was popularised in a TikTok in 2022 (Moniuszko, 2023).

can still occur" (SP,11). Nevertheless, practicalities such as access to bathrooms were noted, with only a minority of settings in the study having bathrooms close to outdoor area or within the outdoor area. Where the outdoor area is a distance from the classroom this can also be problematic. Other practicalities such as shared spaces with groups and only having access to outdoor spaces on particular days, or, at particular times are noted.

Structural limitations included a focus on fixed equipment, for example playground equipment such as swings. As Tovey (2017,p.5) has noted "A Froebelian environment provides resources which can be transformed rather than bought equipment which is 'pre-formed'".

Only a minority of settings where students undertook professional practice placement had a baby room as part of their services. For those that did, the lack of outdoor provision for babies was limiting, with this group confined to buggies during placement period. Although it was noted that this group are placed on the grass in Summer. However, the grass is fake grass which is considered more hygienic and practical for cleaning.

It became clear that for some settings, being outdoors does not necessarily mean interacting with nature, with indoor activities replicated outdoors, a point which Froebel also noted:

To the objection that schoolchildren in the country are out of doors all day long I reply that this does not mean that they live in and with Nature. Many adults as well as children treat Nature as one ordinarily treats the air: one lives in it while knowing almost nothing about it, Children who spend all their time in the open air may still observe nothing of the beauties of Nature and their influence on the human heart (Froebel cited in Lilley, 1967,p.146)

For some settings, being outdoors is time to use up energy, what the researchers refer to as "let them out to wear them out".

The researchers contend that a transition in mindset about the potential of outdoors and nature is needed. Sharing ideas between settings of a similar type could contribute to changing this mindset which could be assisted by practical suggestions and solutions.

In this study, students, the budding educators of the future are becoming aware of the potential of first-hand experiences outdoors. This is evident from their accounts which demonstrate that being in the open air opens both hearts and minds.

Watching and Wondering

Tovey [2020, p.21] remains us that ''Frobel believed that young children are entitled to knowledgably and well-qualified educators who are attuned to the distinctive nature of young children's growth and development''. Through our research we wanted to gain an insight into how students develop their understanding of outdoor learning spaces, through a Froebelian lens, from both theoretical and practical perspectives. It was evident from our analysis of the data that all students had developed an understanding of Froebelian principles between the first and second phase of the research. The level of knowledge and understanding and having the ability to link the theory to examples observed in practice, varied across the student participants.

Of interest, was the students' narratives, across both phases of the study, relating to specific skills and knowledge they felt they had developed; from the theory from college, practical workshops, placement experience and participating in the research itself.

Students were given time to reflect on practice and different ways of documenting their reflections, as described above in page 10 of this report. It was evident that both the ability to reflect as well as the depth of their reflections developed over time. The very essence of Froebelian practice, that of nurturing and nourishing our students' understanding through providing rich first-hand experiences and time to reflect on these experiences, was evident.

One student shared how they *''…had a greater understanding for how important the practitioner's role is within play'' as they made the connections between both the theory and the 'lived experience' of the outdoor space, during the workshops''* (SP4). With others describing how their experiences outdoors reminded them of their own childhood memories. A student recalled how their experience of planting bulbs during the workshop rekindled childhood memories such as *''…helping my mother plant flowers on our balcony'' and the same student was later able to describe how the flowers were ''…beautiful and made [them] feel proud''* (SP2). The importance of unity and connectiveness and learning from experiences can be seen in the students' reflections.

The reflective portfolios and maps in phase one and later the reflective journals, in phase two assisted in documenting their reflections. Students commented that

"The reflection maps definitely help as we can articulate how we felt at the exact moment in the workshops" (SP14)

''the reflective maps are very helpful as we learn valuable things in the workshops that could be forgotten if we don't complete them'' (SP13) and one student made the connection between reflection in and on action (Schön, 1983) *''the reflection maps helped me to breakdown what I learnt from the workshop''* (SP8).

In the focus groups in phase two students were able to reflect on their own learning from both their practice experience as well as taking part in the research and how they had developed their ability to observe as well as reflect. It was evident from the findings, that students developed a greater understanding of the importance and relevance of observation as well as reflection reminding us that to observe without reflection, Froebel believed, was '''empty observation' and could never lead to real understanding." (Liebschner 1992, p.141).

Students told us that;

''[Being part of the research] … helped me do the reflections of my observations" (SP 6)

"…I learnt that as I practitioner I need to observe, give a lot of opportunities for outdoor play and understand that children bring in their own lives and should be viewed as a whole" (SP3)

The quotes above are exemplars of how some students were able to make the connections between the need to observe and the need to reflect.

Unfolding: evolving understandings of a Froebelian approach

> *"Developing a Froebelian approach takes time. It requires critical reflection, discussion, and a willingness to question taken for granted ideas"* (Tovey, 2022, p.22).

This statement encapsulates the evolution of students' understanding of outdoor learning spaces through a Froebelian lens. The aforementioned two-phased approach to the study facilitated documentation of this process as it emerged. In the first phase of the study, students developing understanding emphasized the following aspects of a Froebelian approach: affective; activities; aspirations for future practice; assumptions.

The affective potential of outdoor learning spaces was conveyed in students' reflections on their own experiences and those which they perceive that children would have in these environments. For example: "*The outdoors fosters the child initiated and connectedness element of Froebel*" (SP11). Outdoor spaces "*helps children to express themselves and their emotions as they explore outside. Sense of unity*" (SP12). "*A child's creativity can really be seen through Froebel's practices, just like in the outdoor space where there is a lot of opportunity for one to express their creativity"* (SP7).

Activities with the Gifts and Occupations were expectedly the source of linkage within student writings on workshop explorations and their developing understanding of a Froebelian approach. The Gifts and Occupations were available as a choice of materials for use during workshops[13]. Just as the Gifts and Occupations cannot be detached from an account of Froebel's approach, connections between these materials and students learning journey cannot be separated from the narration of said journey. Bruce (2021) has emphasised the importance of reconnecting Froebel's principles and practices. The description below demonstrates the unfolding understanding of a Froebelian approach through activities with Froebel's gifts:

"I played with the cubes and built many different structures, as seen in the first picture my intention was to build a chair/throne (Figure 3)*. I then discovered that this was a form of life, children often create and make things that are connected to their own personal life. I then learned that when I was younger I loved princesses and fairy tales and therefore explained the throne. Another aspect of Froebel that is emphasised would be creativity and symbolism, this links back to the third gift again showing forms of beauty (Whinnett, 2020)"* (SP5).

[13] During workshops, some of the materials were placed outdoors while others were placed indoors. Students had the choice to move materials from indoors to outdoors and vice-versa. There was never an expectation that the Gifts and Occupations or other available materials should be used in situ.

Figure 5: SP5 Chair/ Throne made from Froebel's third gift

An association between activities which were play-based and nature based and Froebel's approach was further illustrated in students reflective writing: *"Play is the centre of the outdoor environment something that Froebel emphasized helps a child discover who they are and help them understand the world"* (SP14). *"By learning through play and supporting children's talents and passions, it allows them to actively participate with their environment which is another key principle of the Froebelian' approach (Smedley and Hoskins, 2015)"* (SP10). *"This workshop was based off the Froebelian way of learning and we had access to a wide range of natural materials"* (SP7).

Students also referred to a Froebelian approach in their aspirations for future practice.

"This is one of the most important topics I learned as it is so vital that children are given the time and opportunity to have control over their play with guidance from an adult in the background. I will be able to implement this principle into settings in the future to allow children the independence they require to grow and develop (Tovey, 2016[14])" (SP5).

"I like the idea behind Froebel's teachings and enjoyed playing with the gifts. The focus on the outdoors and nature-based play appeals to me and is definitely something that I would be interested in bringing into practice with me" (SP13)

[14] This reference was included by a student in their portfolio. Hence it has not been included in the bibliography.

The process of students Froebelian learning journey included assumptions[15] about Froebelian education as a particular type of setting rather than an approach or set of principles. For example, a student noted that as they had not attended a Froebelian setting, the workshop gave the opportunity to explore a *"…a type of curriculum that was not 'normal'…" (SP13)*. Students combined knowledge from the ED1012 module with Froebelian knowledge in alternative ways *"now we believe that opened ended materials are the present-day version of Froebel's gifts"* (SP13). Student's assumptions evoke Froebel's concept of the "surmise". Although Froebel's concept related to children's early ideas about something, student's early hunches show similar tendencies.

> Froebel's observations of children showed him that young children's thinking does not proceed by logical concepts but by a process of reasoning form the particular to the particular. Much has to be done by having hunches, much has to be surmised. This, of course, is also what grown-ups have to do in many of their adult activities (Liebschner, 2001, p.132).

It was clear from phase one that students were at different stages in their evolving understandings of Froebelian education. Hence, the time needed in developing a Froebelian approach referred to by Tovey (2022) noted above, was considered when designing the second phase of the research which emerged from researcher reflections on phase one. As students were undertaking their professional practice placement in early childhood settings, it was felt that students would regularly need to engage with Froebelian principles as they embarked on the reflective journaling process. As noted above, students were given choice in the style of documentation in reflective journal entries. To support students in this process and as an aide-memoire, a print-out of Froebelian principles from Froebel Trust was attached inside each of the student's reflective journals. This epitomized a freedom with guidance approach.

The journals showed the continued unfolding of a Froebelian way of thinking. This was evident in explicit links to Froebelian principles and was also implicit in student reflections on outdoor spaces. The assumptions continued with some uncertainty on whether activities were

[15] The researchers felt it was important to refer to assumptions rather than accuracies/inaccuracies. This echoes the findings that students understanding of a Froebelian approach is a process of unfolding.

Froebelian or not but also demonstrating interpretation of practice in relation to Froebelian principles (Figure 6)

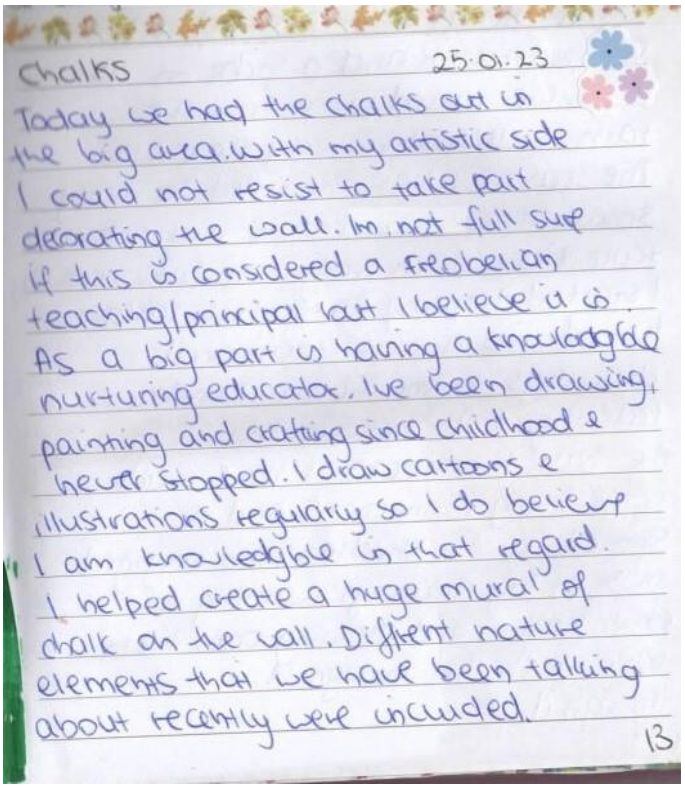


Figure 6: SP1 Reflection showing uncertainty on whether an approach is Froebelian or not.

Of the ten student participants, four articulated Froebelian principles in their reflections (Figures 7,8,9,10). In all four journals, students cited more than one principle either in the same reflective piece or in separate reflective entries.

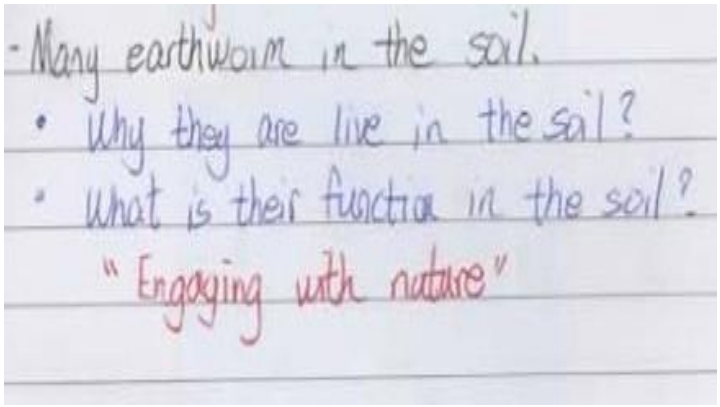


Figure 7: SP6 Reflection linking to Froebelian Principle "Engaging with Nature".

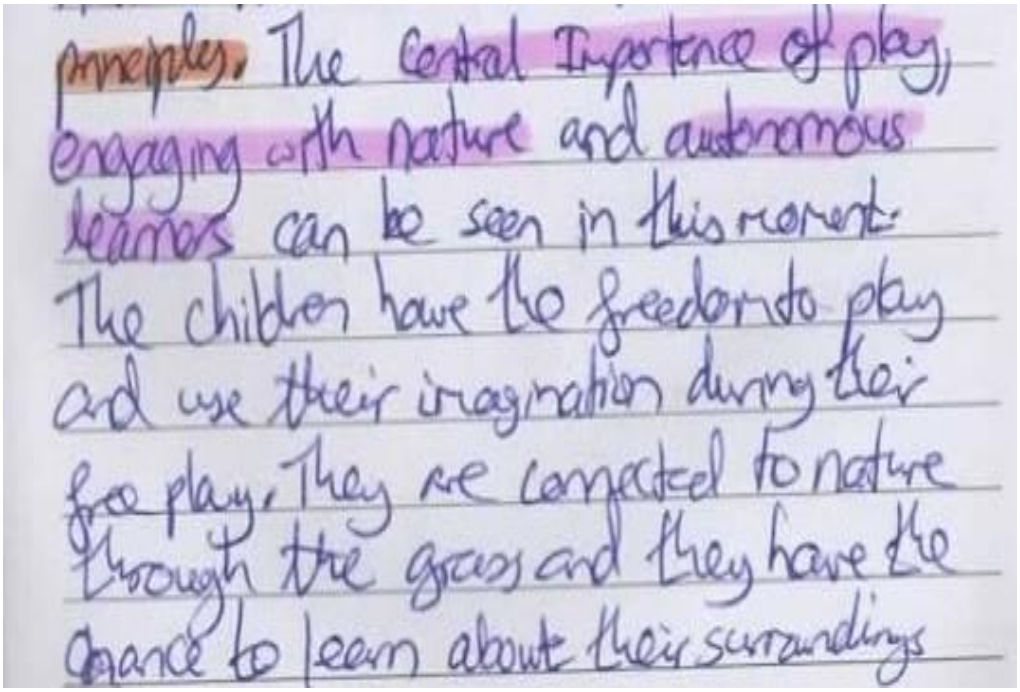


Figure 8: SP7 Reflection linking to Froebelian Principles, "The Central Importance of Play", "Engaging with Nature" and "Autonomous Learners".

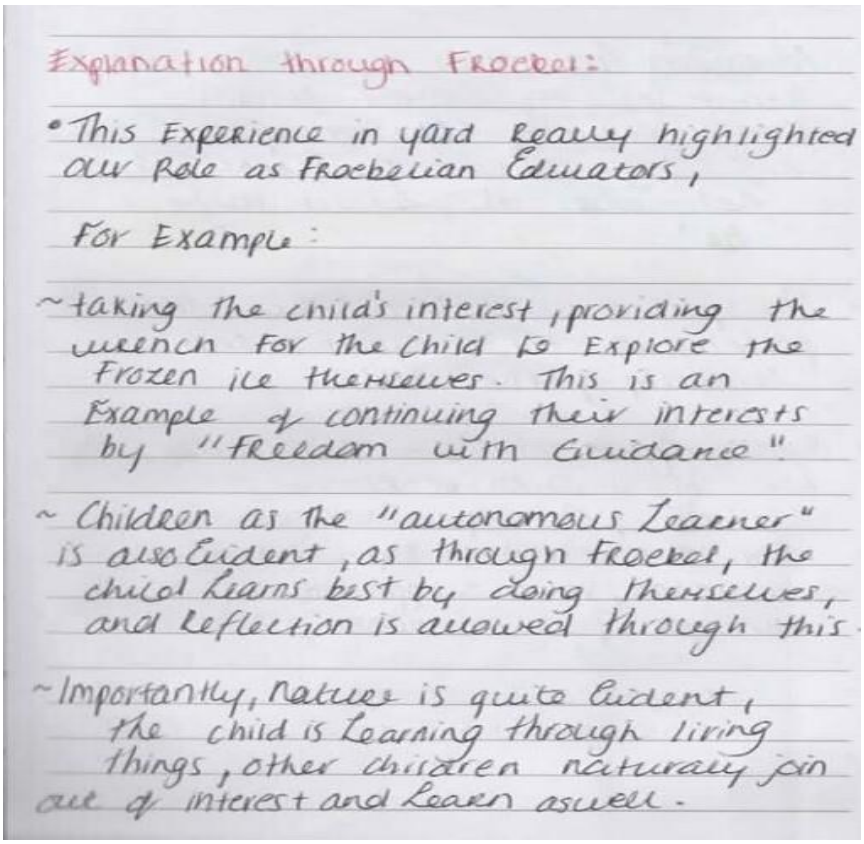


Figure 9: SP11 Reflection linking to Froebelian Principles "Freedom with Guidance", "Autonomous Learners", "Nature".

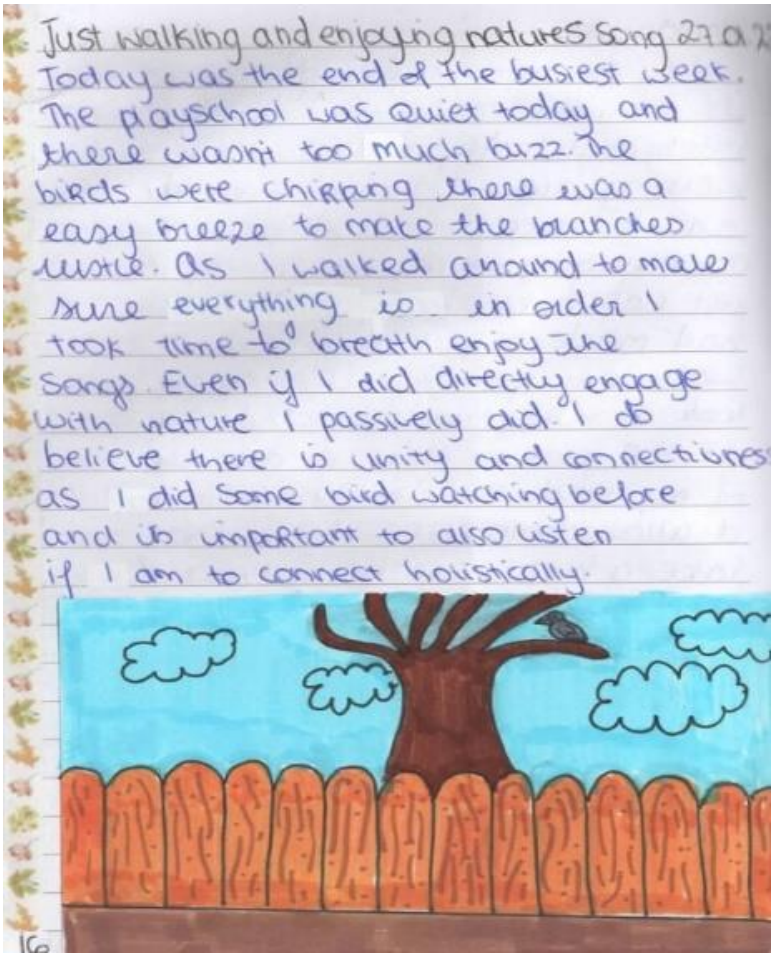


Figure 10: SP1 Reflection linking to Froebelian Principle "Unity and Connectedness".

Although some student participants did not directly refer to Froebelian principles, an awareness of a Froebelian approach was apparent. Students alluded to Froebel in the topics discussed: connection from the outside to inside; outdoor play; play; freedom to explore; importance of nature; natural materials; sounds of nature. The awareness was also evident from what was absent from the outdoor areas: "*I have not seen many natural concepts like Froebel recommends*" (SP8).

The focus group discussions replicated the findings from journals with some students making direct links to Froebelian principles. Others referred to examples that are Froebelian without using the specific language of the principles. When asked to summarize a Froebelian approach in the form of an "elevator pitch", the most prominent findings were an awareness of following the child's lead; tuning into children and getting to know them; freedom to play;

the potential of outdoor environments for learning; the importance of relationships with family and community.

Relationships Matter

In the Autumn Lecture 2023 hosted by the Froebel Trust, Tina Bruce reminds us that '…Relationships matter…' (Bruce, 2023). Student's reflections on their college experience and observations of the affordance of outdoor provision, in practice, lends support to this statement and therefore the 'Importance of Relationships 'appears as a key theme from our research. The findings from across both phases of the research provides evidence of the importance students placed on the concept of relationships. Our analysis of the data strongly reflects the importance students placed on developing relationships viewed from different perspectives. Student's reflections took into consideration; developing relationships with peers in college, developing trusting relationships with settings/mentors and the affordance of the outdoors for fostering children's relationships/friendships.

As previously mentioned, … "September 2021 was the first opportunity that we had to use the outdoor space with our students [coinciding] with the commencement of the new four-year BA Early Years and Childhood Studies Programme" (Cunneen and Towler, 2023, p.37). Our research, that commenced in February 2022, with the first intake of students on the new programme, has given us and colleagues across the EYCS programme, an opportunity to formally document how this new space may support student's learning and professional development, both in college and as they transition onto their practice placements. Of significance, is how the opportunity to explore the outdoor learning space appears to have assisted some students to adjust to the programme, having transitioned into university from the challenging years of the COVID Pandemic. With one student reflecting:

''not knowing many people within my group so this also contributed to my anxiousness… [feeling] shy I didn't know many people from the group…After the workshop I felt that I knew more people within the course from our interactions…''(SP4).

Another student shared how they felt *'' we were all just getting to know each other. We were not used to working together in groups in this sort of setting…''* (SP8).

Students used the Reflective Portfolios and Maps to describe the interactions they had with their peers and how relationships were able to develop through being able to engage in the

outdoor space. Several of the students acknowledged that being able to freely explore in this way meant it was *'' … an easy way to talk with the rest of our peers…'' and having ''a great time exploring the garden and the classroom with my friends…''* (SP14). With another reflecting that this pedagogical approach gave them *'' the opportunity to mix with people from our class and get to know each other whilst also engaging in play''* (SP13).

The student's reflections reveal their developing self-confidence to freely explore the outdoor space as well as not only studying with their peers but how friendships are able to develop through their interactions outdoors. Having fun while learning was important to the students. One student gave an example of playing a game of hopscotch together and it being *''a fun activity and it made us laugh which brought us closer! …This was great as I got to finally make friends in my course''* (SP8).

Not only can we see the developing friendships and relationships through the student's reflections but also the growing respect for each other, that grew out of their interactions. Tovey (2020, p7) reminds us that ''…intimate, reciprocal relationships are vital for our sense of belonging and wellbeing throughout life''. The Froebelian principle of unity and connectedness is clearly represented through their reflections, with students referring to feeling *"value from learning from other students' unique opinions… [feeling] greatly supported by other classmates''* (SP11).

Phase two of our research took place while the students were undertaking their first professional practice placement. Having provided each student with a Reflective Journal, we asked students to reflect on the outdoor provision they experienced in their placement, through a Froebelian lens (see Research Methods, page 11 of this report).

Initially, students may be unsure of their role and therefore hesitant to involve themselves in the daily routine without first being invited to do so. There can be a perceived reluctance to appear intrusive or overconfident in the first few weeks, as well as students needing to develop a greater understanding of the daily routine, ethos and pedagogical approach of the setting.

The relationship between student and mentor is a reciprocal one however, in some cases, students may be hesitant to put forward ideas and may require more instruction initially. What was affirming with our findings was how students were able to make the links between theory and practice, acknowledging, the relevance of the workshops to their practice placement, *''The role of*

the teacher is significant…going into practice we have the most up to date information and tools…'' (SP11). Another student shared how their arrival at placement coincided with an inspection visit and it was clear that the student's input into planning for the outdoor space was acknowledged. The student *stated ''I've been talking to the other practitioners on what they want to see, I've been very lucky that they want my input too…''* (SP1).

During the focus group discussions, it was apparent that the students had considered the affordance of the outdoor space at the placements and made some comparisons to their own experience in college. Of significance is how students were able to demonstrate both their ability to observe and be self-reflective of their observations as well as to being respectful to the mentors and staff at the settings. Students became self-critical of how they were initially describing the placements, with several students wanting to quickly dispel any reflections that may at first appear critical of the staff. Examples included observations such as;

'' *it is a lot of concrete patches''* (SP7)… reflecting that *'' like I suppose in the setting they do try their best like because of the way it's made out''*(SP7). Therefore, identifying that settings are restricted by the design of the spaces that is out of their control with another observing that,

'' I suppose initially I kind of thought I didn't have a lot to work with just given the setting is located in a primary school… So I suppose it's kind of sharing a yard'' (SP11) and then on reflection, *''It's not a judgment really, it's just an observation''* (SP11), making further reference to issues of limited funding restricting what placements can do.

Another student observed *the "limitations of the space…no access to nature''*(SP3) and they were very quick to restate that *'' I think I was a little too harsh about the concrete and no nature. But I see that the children really love it, and to be honest… the practitioners make the best of the place''* [SP3]. As researchers we were quick to alleviate any anxiety, they may have at this point by refocusing the discussions.

Tovey (2017, p.112) reminds us that "Observation is more than watching, it means listening carefully, being open and wanting to know more'' and when comparing skills developed in the workshops in 1st year to their 2nd year of study, this final quote from a student is an exemplar of this;

It has stood me in terms of how to observe and what to observe…there weren't any restrictions on how to write these…because if I didn't use these skills last year, I probably wouldn't be able to…it did give me the skills [to observe and reflect] *from the workshops…I developed a kind of eye for what could be improved''* (SP11).

Ethical Approval did not include permission to observe children however, the students' reflections of how the outdoor provision fostered children's relationships and friendships was evident. Students were able to describe how; different types of settings, designs of outdoor spaces and accessibility to outdoors had an influence on how a space may be used. It was evident that students were able to reflect on theory obtained in college and consider the affordance of play and outdoors and how this facilitated interactions between children.

Several students considered how the outdoor space facilitated children to play cooperative games such as hopscotch and hide & seek and others referred to fixed play equipment where children could also play together such as "*Polyrons that [would] encourage children to play together''* (SP1) *and …bikes and other things we can play outdoor''* (SP9).

Student's reflections referred to the outdoor space facilitating "free play"[16], *''it's free time for them to chat and connect with others'', as well as considering how playing outdoors together facilitated opportunity for children to problem solve and manage "conflict resolution"*(SP9).

Students considered how the time that was allowed for outdoor play would impact on children's ability to play together and develop friendships, with examples of only short periods of time being given. So, examples such as *''…15 to 20 minutes given to play freely…''*(SP7) when a more formal PE lesson had finished.

It was evident from student's reflections that the choice of equipment and resources that were provided outdoors would also facilitate children playing together and developing relationships with each other. Relationships are indicated as one the components in the overall conclusions of the study.

[16] "Free play" was the term used by a student participant. The researchers acknowledge that free flow play is the more common Froebelian expression.

Conclusion

A summary of the research findings is encapsulated in the acronym GROWTH (Figure 11).

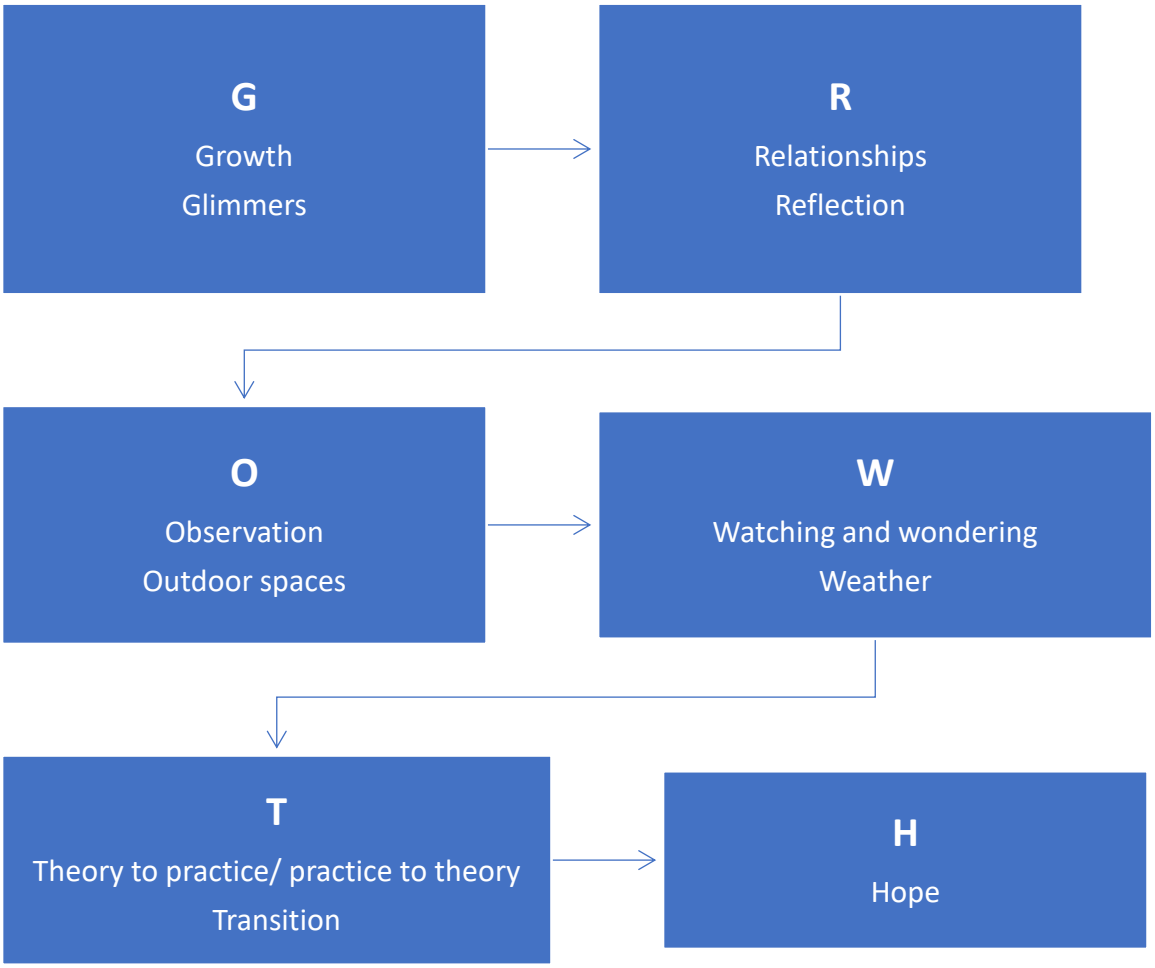


Fig 11: GROWTH Acronym

The acronym has been chosen to represent the overall findings in a summative format. The word itself represents the personal and professional growth which has occurred for both the students and researchers[17]. Students have reflected deeply on their understandings of outdoor learning spaces and their understanding of a Froebelian approach in this regard is unfolding and growing. Moreover, the word growth refers to some of the nature-based

[17] Students' reflections were incorporated into the research design. The researchers' reflections on their "growth" is not included in the discussion due to the constraints of the word count.

activities that were both present and absent at various stages and in various settings throughout the research.

The letter “G” also stands for glimmers, those moments of joy that students mentioned during the study. It was apparent that the outdoor learning spaces enriched students’ relationships with nature.

The potential of outdoor learning spaces for the development of relationships was made visible in the discussion above.

Reflection is a concept which underpinned the research and was central to the research methods employed. When reflecting on his childhood, Froebel noted that "Nature, with the world of plants and flowers, so far as I was able to see and understand her, early became an object of observation and reflection to me" (Froebel in Michaelis and Moore, 1915, p.6). In this study, outdoor learning spaces including the natural components within were the source of reflection and observation for the student participants.

Observation in this study related to observing outdoor learning spaces. For this reason, the researchers chose to refer to this as watching and wondering for clarity. Students watched the utilisation of outdoor learning spaces and through their wonderings/reflections developed their developing understandings of both these spaces and of a Froebelian approach. Much was surmised during this process.

The potential of weather as a perceived barrier to going outdoors and for the type of engagement encouraged in outdoor spaces was perceptible. The researchers contend that a transition in mindsets is needed in this regard.

Transition also relates to students changing viewpoints on the outdoors and their ability to link both Froebelian and other theory[18] to practice. It is uplifting to hear students consider that Froebelian learning can still occur even in small spaces. This gives hope for the future as the student participants continue on their unique learning journeys as early years educators.

[18] The research report focuses on connections to Froebelian theory. However, it is important to note that students did link to other theory from their studies.

As noted at the beginning of the report, students work formed the basis of the research. It is therefore fitting to end the research report with a poem written by a student participant which highlights the potential of outdoor learning spaces (Figure 12).

The outdoors holds so much power
At any time, any hour
A time to be free and full of glee

A place to wander, explore
A place where you want to know more
So much to see and yet so much mystery

Join me and see
All that you can be
A scientist, a researcher and more
It is up to you to explore
The greatest teacher yet

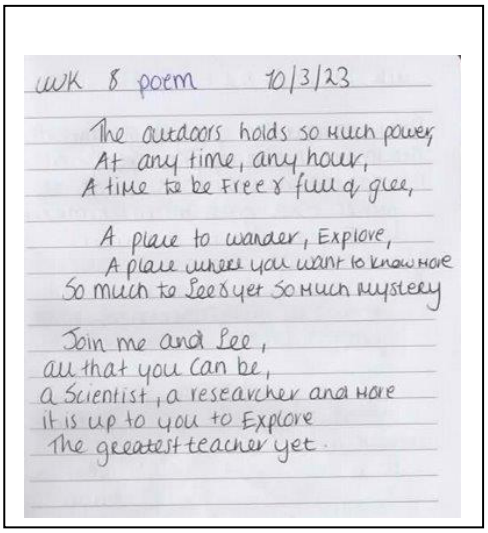


Figure 12: Poem about the outdoors written by SP11.

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APPENDICES

Appendix 1
Researcher Biographies

Dr Alison Moore

Dr Alison Moore is a Professional Practice Placement Manager at University College Cork, in Ireland. Until recently, she led a group of Children's Centres in Birmingham, England, managing multidisciplinary teams and delivering support to children under 5 and their families, including early years care and education, family support and health services. Alison's roots lie within early years and she has over 40 years' experience in the sector. Her doctoral thesis, awarded by Birmingham City University as part of a combined programme at the Centre for Research in Early Childhood (CREC), explored parent and practitioner perspectives on how an open-listening climate in early years settings can facilitate child voice (Moore, 2022). Alison's interest in implementing a Froebelian Approach into her own practice has been ignited through the current Froebel research project and she has recently commenced the Certificate in Froebelian Practice at the University of Roehampton.

Marcella Towler

Marcella Towler is a Lecturer on the Early Years and Childhood Studies and the Masters of Education Programmes in University College Cork. As part of her work, Marcella facilitates workshops with Early Years and Childhood Studies students in the School of Education Outdoor Learning Space which was the research site for phase one of this study. Marcella has presented papers at the International Froebel Society Conferences in Dublin, Boston and Maynooth and at OMEP National and World Conferences. Marcella's PhD research is exploring the position of play in early education discourses with a Froebelian perspective reflected the dialogue.

Marcella's research interests and publications relate to Froebelian Education and Early Childhood Curricula and Practice. Marcella is a curriculum Mentor for Ha Maqele Children's Programme in Lesotho. Her work in this regard focuses on adapting *Aistear*: the Early Childhood Curriculum framework for a different social and cultural context.

Appendix 2
Pedagogical Approach used in ED1012 Workshops

A change to the pedagogical approach in the ED1012 workshops commenced in September 2021 coinciding with the commencement of the new four-year B.A. Early Years and Childhood Studies degree. This change had been considered long before its enactment. The renewed approach is a student led emergent curriculum in the indoor/outdoor learning space. 'The lecturer acts as co-constructor of knowledge with the students rather than deciding what the students should know in advance... Giving choice in activities and following student interests are enacted' (Cunneen and Towler, 2023, p.38). As students engage in activities, the workshop tutor acts as a co-constructor of knowledge with the students. Through reciprocal interactions, the conversations that emerge form the basis of introducing relevant ideas or theoretical content. The ideas for discussion therefore emerge from the students' self-activity thus contributing to meaningful learning experiences. Reflective discussions with the group at the end of workshops also facilitate potential meaningful understanding.

Workshop activities are play based reflecting the Froebelian idea that institutions for training educators "must be full of a childlike spirit…"(Froebel, 1840, in Michaelis and Moore,1890,p.162). During workshops, some of the materials are placed indoors while others are placed outdoors. Students are encouraged to explore the materials and environments in their own way and at their own pace. Students have the choice to move materials from indoors to outdoors and vice-versa. There is never an expectation that the materials should be used in situ.

When the research project commenced in February 2022, the emergent, play based approach to workshop facilitation continued.

Appendix 3

Background to the School of Education Outdoor Learning Space, University College Cork

In phase one of the research, students participated in workshops in the School of Education Outdoor Learning Space.

The opportunity for the development of an outdoor space arose in 2016 when colleagues in the School of Education received funding from the Next Generation Learning Spaces Funding Call. Part of the funding was allocated to the development of a School of Education outdoor learning space. The outdoor area was a collaboration between the School of Education and Buildings and Estates UCC with the assistance of Silva Build. The outdoor space extended the existing Early Years and Childhood Studies Teaching Research Laboratory Classroom (Cunneen and Towler, 2023).

Appendix 4
Research Questions

Phase One:

1. How do students develop an understanding of outdoor learning spaces through a Froebelian lens?
2. How do students apply reflective practice to inform their knowledge and understanding of the potential of an outdoor learning space in supporting their EYCS Studies

Phase Two

1. How do students fuse theory with practice as they transition into their 2nd year of study and onto their professional practice placement experience?
2. How do students develop observation skills alongside the use of reflective practice as part of their professional practice placement and studies to inform their knowledge and understanding of the potential of outdoor provision?

Appendix 5

Focus Group Guiding Questions

Phase One Focus Group

1. How do students develop an understanding of outdoor learning spaces through a Froebelian lens? 2. How do students apply reflective practice to inform their knowledge and understanding of the potential of an outdoor learning space in supporting their EYCS Studies?	
Introductory Question	1. What were your initial thoughts and feelings when you were first saw the outdoors in person?
Transition Question	Can you briefly explain what prompted you to go outside for the first time?
Focus Questions – based on the research question	1. Can you briefly describe your experiences of the outdoors so far? 2. How do you think your experiences helped you develop an understanding of the outdoors? 3. The research has a focus on Froebel can you link anything from your experiences to what you understand about Frobel's principles and activities. 4. We would like you to reflect on your experiences of the outdoor provision and the activities and materials provided for the workshops. Can you tell us your understanding of how these two elements are connected? 5. You have been using reflection and recording your thoughts on Reflection Maps at each workshop –We asked you to consider your interactions with others, including the tutor and what you learnt from these interactions– How has the process of using the reflection map helped your learning?
Summarising Question	As you know this is the first year of the 4-year degree programme and you are the first group of students to have access to the outdoor provision as part of their studies. Reflecting on your experiences and discussions today can you tell us how we can make improvements to the outdoor learning space?
Concluding Question	Is there anything else that anyone feels that we should have talked about but didn't?

Phase Two- Focus Group 1

1. How do students fuse theory with practice as they transition into their 2nd year of study and onto their professional practice placement experience? **2. How do students develop observation skills alongside the use of reflective practice as part of their professional practice placement and studies to inform their knowledge and understanding of the potential of an outdoor provision?**	
Introductory Question	What were your initial thoughts and feelings when you were first saw the outdoors in the setting?
Transition Question	Was there one thing in particular that stood out/ was striking etc.?
Focus Questions – based on the research question	1. Can you briefly describe your observations of the outdoor space so far? 2. We would like you to reflect on your experiences of workshops in first year. Are these experiences connected to your experiences of the outdoor space on placement? 3. You have been using reflection and recording your thoughts in your reflective journal. How has the process of using the journal helped your learning? 4. The research has a focus on Froebel can you link anything from your experiences to what you understand about Froebel's principles and activities.
Summarising Question	Reflecting on your experiences and discussions today can you tell us how improvements to the outdoor learning space on placement could include a more Froebelian approach?
Concluding Question	Is there anything else that anyone would like to add at this first focus group?

Phase Two- Focus Group 2

1. How do students fuse theory with practice as they transition into their 2nd year of study and onto their professional practice placement experience? **2. How do students develop observation skills alongside the use of reflective practice as part of their professional practice placement and studies to inform their knowledge and understanding of the potential of an outdoor provision?**	
Introductory Question	1. What skills have you developed from being part of the research (in both phases) that you feel will contribute to your professional practice in relation to outdoor provision.
Transition Question	Any other comments on being part of the research project.
Focus Questions – based on the research question	1. Being outdoors is not the same as engaging with nature. We would love to hear your ideas on how engaging with nature could be facilitated more in a variety of outdoor spaces. As you know it is not always possible to have an outdoor space like we had for your workshops. 2. Elevator pitch- In your own words, how would you describe a Froebelian approach to education particularly education outdoors.
Summarising Question	Any other comments on Froebelian education?
Concluding Question	Is there anything else that anyone would like to add as we come to the end of our research?

Appendix 6
Ethics within Research

We obtained approval to carry out our research from University College Cork ethics committee. We adhered to their revised framework and code of research ensuring we conducted our research to the "highest standard of professionalism and rigour" (p.2: *Code of research conduct Version 2.4 Approved by UCC Governing Body 14Th September 2021*, 2021, p.2). We were also guided by the European Early Childhood Research Association (EECERA) Ethical Code for Early Childhood Researchers (Bertram et al., 2015) and aligned our research to the Froebel Trust's expectations of ethical practice in research (2019). To respect the rights and dignity of the students who participated in the research, we considered the principles of:

d) Informed consent and the right to withdraw
e) Privacy and confidentiality/anonymity
f) Avoidance of harm as well as benefits to participation
g) Feedback and dissemination

The research was being conducted as part of the first year of the B.A. Early Childhood Studies Degree programme and during one education module within the programme, led by Marcella Towler, colleague and co-researcher. There were 100 students in the cohort and 14-students consented to participate in phase one and 10- students consented to participate in phase two of the research. As researchers, upholding ethical principles were of importance to us, and in the next section we briefly describe our ethical approach to the above principles. In line with UCC ethics requirements, students cannot be advantaged or disadvantaged by their participation in the research project. Taking this into consideration, Marcella, as the Module Co-ordinator and workshop facilitator did not know which students were participating in the research project during the workshops and did not participate in the focus group in Phase 1. Additionally, the identity of the participants was not revealed until the students' portfolios were marked, and grades approved at University Examination Board. Students were made aware of this and understood the rationale for this ethical decision.

Informed Consent and the right to withdraw

During the recruitment phase of the study students were invited to an Information session where the research project was described in detail and where the requirements for the study were laid out. This was followed by an Information Pack and Consent Form which included; details of the study [including the time frame and time commitment], the right to withdraw at any time without consequence and how confidentiality and anonymity would be achieved. The information sessions were repeated at the commencement of phase two of the study ensuring the students were well informed before consenting to continue to participate. We had fourteen students who gave signed consent to take part in phase one with four choosing to withdraw as we commenced phase two of the research, leaving ten student participants in this final phase.

Privacy, Anonymity and Confidentiality

To ensure anonymity and confidentiality through phase one, student participants were assigned numerical identifiers.

Phase two of the study was conducted during the students' professional practice placement experience and consideration was given to retaining an ethical stance at this stage. As the Placement Manager, I applied the standard procedures for placement allocations for all students. Once all students had been assigned their placement, we then cross referenced these with the students participating in the research to record; the placement and the type of setting.

There were additional issues to consider as the research commenced, [in phase one] as COVID restrictions were still in place and Microsoft TEAMS was the UCC preferred platform in place, which included;

- Only audio and not visual recordings were made of meetings and focus groups [a practice we retained in phase two of the research].
- Any audio recordings on manual devices were deleted off the device, once transcribed
- The assigned numerical identifier was used during the transcription phase
  and
- Only the numerical identifier will be used during the research and for any dissemination and/or reporting of the research

Avoidance of harm and benefits to participation

As researchers and college staff we were fully aware of the demands of the degree programme and we were mindful to "minimise the impact of [our] research on the [student] participants, either bureaucratic, emotional, physical or otherwise, seeking to adhere to an ethic of "minimal intrusion" on the lives of participants (Bertram et al., 2015,p:7). We consider that the research design, methods and research 'tools' described in the report kept additional work for the students to the minimum, therefore reducing stress or any harm because of the research. The benefits of participating in the research was discussed with the students from the point of recruitment which includes but is not exhaustive;

- Gaining knowledge and understanding of the research process which would assist them in year 4 of the degree, when students will carry out research as part of their dissertation.
- Increased knowledge of theory relating to practice [this became evident in the data]
- First-hand experience of how the research process works from recruitment and consent through to completion of the final research report.
- They will be able to comment on the different research methods they were involved in (reflection, focus groups etc.).
- Involvement is a feature which they can add to their C.V. going forward
- Participation may also benefit postgraduate studies.
- Reflecting on their practice through a Froebelian lens.

Additional ethical considerations

There were limitations placed on the research by the ethics committee (UCC) that did not allow students to observe children while on placement which as researchers we had to uphold.

We had taken into consideration professional respect for the practice placements and although the research was not explicitly linked to the 2nd year placement module, we felt it was important to gain consent from the placement. Once placements were allocated, a letter of introduction was sent to the placement briefly describing the research and asking for signed consent for the student to undertake the research at the setting. Prior to phase two of the research commencing, we

invited representatives from the placement to a meeting accompanied by the student allocated, and shared information about the research project and findings from phase one. This assisted in gaining the trust of the placement as well as giving reassurance that children or staff would not be observed. Placement providers gave signed consent for the student to undertake the research during their placement.

Appendix 7
Data Analysis

As researchers we adopted the thematic approach [TA] to data management and data analysis developed by Braun and Clarke [2006, 2013, 2022]. The six- phased approach to reflective TA, as suggested by Braun and Clarke gave us a systematic way of collating and managing the data from both phases, giving assurance of rigour and authentic validity while acknowledging this is not a linear process. The approach afforded us flexibility in how we chose to collect and collate our data and enabled us to identify and reflect on the quality of the data we would later use to present the findings from our research. Braun and Clarke [2022, p:28] reminds us that "Not all text-or image-based information makes quality data…", highlighting the need to reflect on data that provides "…rich and diverse meaning…".

This action of reflectivity, the authors have applied, resonates with our own values as researchers as well as reinforces the importance of reflection and developing reflective practice that we have applied throughout our research, and that underpins Froebelian principles.'

As an initial process of familiarising ourselves with the data, in phase one of the approach, we spent time looking at the data created in hardcopy formats, from the students'; reflective maps and reflective portfolios, in phase one and later in the process, when returning to familiarisation, the reflective journals completed in phase two of the study. We revisited this data through the electronic copies as well as then listening to recordings of focus groups and reading the transcriptions. This was important as we considered that the transcriptions of the recordings from the focus groups, on MicroSoft TEAMS, did not always capture the nuances and accents from each discussion. We wanted to ensure we had clarity and were representing the voices of students authentically.

As we moved onto coding the data, [phase two of the approach], we wrote down our initial inductive interpretations, reflecting on the Froebelian principles at this stage.

We continued to develop our observations and interpretations, from the data sets, adding depth to our understanding of the data that assisted us to move beyond the explicit meanings we could clearly identify, particularly from phase one of the study, to the more implicit significance from the students' reflections, when reflecting in practice. It was evident that the students' skills of reflection and reflective practice had developed as they transitioned into the 2nd year of the degree and into professional practice placement. The approach of Reflective TA also gave us the opportunity to conduct what Braun and Clarke, (2022, p.8) refer to as "collaborative coding" which they suggest should be used to '…further "enhance understanding, interpretation and reflexivity…" and not to '…reach a consensus about data coding…'. To assure validity we did not split the task of coding but chose to both code all the data sets available and then gave time to reflect on our interpretations as we moved into generating the initial themes, phase three of the Reflective TA approach.

It is important to add, at this point, that the opportunities arose to begin to disseminate our early findings from the study, at several conferences and showcasing events hosted by University College Cork. In addition, we ensured the students were informed through information sessions and sharing our SWAY document. Preparing and presenting the findings at this stage in the Reflective TA process assisted in consolidating our analysis and further enhance our skills to re-engage with the coded data so far. We were able to review the themes we had generated at this point and to also check the viability of these themes to respond to the research questions set for both phases of the study.

The next two phases of using Reflective TA; developing and reviewing themes (phase four), refining, defining and naming themes (phase five), very much overlapped which lead onto the final writing -up phase of the process.

Appendix 8

Feedback and Dissemination

From the point of recruitment and during significant points in the research process we took every opportunity to feedback and disseminate the research to students, placements, colleagues, and at local, national and international conferences. We also created a Twitter page @UCCNatureEdEYCS

- College of Arts, Celtic Studies and Social Sciences [CACSSS] – 17th June 2022
- European Early Childhood Research Association [EECERA] Glasgow - 25th August 2022
- Centre for Research in Early Childhood [CREC] Learning Circle – 13th December 2022
- SWAY- October 2022 [Froebel Trust Website]
- Froebel Trust Midway Review – February 28th 2023 [on-line TEAMS]
- Early Years Childhood Studies, 25th Anniversary UCC – 5th March 2023
- College of Arts, Celtic Studies and Social Sciences [CACSSS] – 7th April 2023
- International Froebel Society, Maynooth University – 17th June 2023
- OMEP Ireland, Limerick, 11th November 2023
- Once the final report has been approved by the Froebel Trust, the report will appear on the Trust's website
- The researchers have plans to publish in peer reviewed journals

Appendix 9
SP1 Drawings of Mr Pidgeon and Mr Worm

Mr Pidgeon

Mr Worm