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Ábhar / Subject: Taught Masters

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Spríoclá / Due date : 25 – 09 - 20

Teideal an tionscadail / Assignment title: *How do I facilitate pupil oral language development by using iPads as a learning tool with junior infants?*

Líon na bhfocal / Word Count: 18812

Líon leathanach / Number of pages: 117

Aon ábhar eile sa tionscadal / Any other material in the assignment: 20 Appendices attached

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OLLSCOIL NA HÉIREANN MÁ NUAD
THE NATIONAL UNIVERSITY OF IRELAND
MAYNOOTH

Froebel Department of Primary and Early Childhood Education

M.Ed. (Research in Practice)
2019 - 2020

Title:

**HOW DO I FACILITATE PUPIL ORAL LANGUAGE DEVELOPMENT BY USING
IPADS AS A LEARNING TOOL WITH JUNIOR INFANT PUPILS?**

Name: Helen McEvoy

**A Research Dissertation submitted to the Froebel Department of Primary
and Early Childhood Education, Maynooth University, in fulfilment of the
requirements for the degree of Master of Education (Research in Practice.**

Date: 25 - 09 - 20

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Date: 25 - 09 - 20

ABSTRACT

The purpose of the research was to provide opportunities to facilitate oral language development in junior infant pupils. My aim was for junior infant pupils to develop their communication skills while using the ICT electronic device the iPad. I chose self –study action research as a paradigm as it was about examining my own values and bringing about a change to my practice. My context of teaching in a DEIS school influenced the values I identified. The data collection methods I used were qualitative for example reflective journal, teacher observation, focus groups with pupils and interviews with class teachers. Professional dialogue with my critical friend, colleagues and supervisors ensured triangulation of data. Manoa University guidelines were adhered to and confidentiality and anonymity of participants was guaranteed. My findings were junior infant pupils engaged effectively with enquiry - based learning on the iPads and had the necessary digital skills needed to use the iPads. Opportunities for oral language development were provided because using the iPads encouraged discussion, collaboration, presenting and sharing of information. Using iPads in the classroom created a fun learning atmosphere and increased pupil motivation and engagement in tasks. The teacher’s role evolved, as I became more of a facilitator as the pupils engaged in tasks independently on the iPad and needed little assistance. There was less teacher talk and an increase in pupil conversations. My research is very timely in the current environment when all schools were closed in March 2020, due to Covid 19. Pupils had to engage in remote learning at home using electronic devices. The significance of my research for my professional colleagues is my thesis outlines my action research sessions where the junior infants took photographs of the school garden using iPads and used the Book Creator app to make their own eBook. My thesis is a source of encouragement for colleagues to nurture and embrace a culture of using iPads as a learning tool in their school.

ACKNOWLEDGEMENTS

I wish to express thank you to my supervisor, Tony Sweeney, for his guidance and advice in the process of completing this self –study action research.

I owe my parents many thanks for their love and support throughout my educational journey.

I acknowledge the permission granted by Maynooth University and my school's Board to Management to conduct my research.

My research was made possible by the permission and participation of the junior infant pupils, critical friend, colleagues and my supervisor.

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LIST OF ABBREVIATIONS

D.E.I.S - Delivering Equality of Opportunity in Schools.

S.E.N. – Special Educational Needs.

A.A.P. - American Association of Paediatrics

WHO -World Health Organisation

E.S.R.I. – Economic and Social Research Institute.

UNESCO -United Nations Educational, Scientific and Cultural Organisation.

S.A.M.R. - Substitution, Augmentation, Modification and Redefinition.

TPACK – Technological, Pedagogical, Content Knowledge Framework.

TK – Technology Knowledge.

CK – Content Knowledge.

PK – Pedagogy Knowledge.

PCK –Pedagogical Content Knowledge.

TPK – Technological Pedagogical Knowledge.

TCK –Technological Content Knowledge.

P.D.S.T. – Professional Development Support Team.

D.E.S. – Department of Education and Skills.

N.C.C.A. – National Council for Curriculum and Assessment.

P.D.S.T. – Professional Development Service for Teachers.

S.E.S.E. – Social Environmental and Scientific Education.

C.P.D. – Continuous Professional Development.

CHAPTER 1: INTRODUCTION

1.1 Focus of study

A self- study action research is values based and involves critical reflection on one's own practice (McNiff, 2014). Reflection is described as thinking back over previous significant experiences (Brydon- Miller et al., 2003) with an intent to analyse and interpret them, which can bring about change (Sullivan et al., 2016). The focus on 'I' is paramount in self - study action research and is initiated with a desire to bring about a change or an improvement to one's own practice (McNiff, 2014: 55). The purpose of self - study action research is knowledge creation, making a claim to new knowledge through critical reflection with oneself and engagement with others (Sullivan et al., 2016). Often the start point for one's self- study action research is when one experiences themselves as a 'living contradiction' Jack Whitehead (1989). Whitehead and McNiff (2006) referred to as to state one's values and then realise that the values were not being exhibited or practiced in their everyday lives.

The beginning of the journey for my self – study action research was to identify an area of improvement in my practice and to analyse my values. When examining my values, I discovered that my values were not being implemented and adhered to in my daily practice. I was experiencing myself as a 'living contradiction' (Whitehead, 1989) and I wanted to take the time needed to reflect on my practice. When undertaking this self - study action research, I engaged in professional dialogue and conducted observations on my practice, thus leading to a better understanding of why I teach and act in a certain way. I wanted to embark on this journey to live closer to my values and by doing this; it would enhance my role as a teacher. "It is basically about you studying you (in collaboration with others such as your pupils and colleagues) with a view to becoming a better practitioner" (Glenn et al., 2017: 28).

1.1.2 Research rationale

The rationale for carrying out this self – study action research was I identified pupil oral language development and the use of iPads as target areas for improvement in my practice. The pupils in my school are from a low socio - economic group that could be described as disadvantaged and this may be one of the contributing factors to their poor oral language skills. Molloy et al. (2016) carried out research in the area of educational disadvantage and oral language competencies. Another reason for engaging in this self – study action research was I wanted to bring about change to the use of iPads in my practice. Junior infant pupils do not have the opportunity to use iPads in my school. Senior infant and first class pupils are given timetable priority and play gaming apps, which encourage passive swiping on the iPads. These apps were designed as an educational tool to enhance individual learning but in my experience, they are a barrier to creative thinking.

1.2. RESEARCH QUESTION AND AIMS OF THE RESEARCH.

How do I facilitate the development of oral language by using iPads as a learning tool with junior infant pupils?

1.2.1. Research aims

The research aimed to explore who I am as a teacher and to identify what my values are. It investigated how to provide opportunities to promote pupil oral language development while integrating lessons with ICT specifically using the electronic device the iPad. I wanted to use enquiry - based apps for the junior infant pupils to become agents of their own learning. In my self– study action research practice, my objective was to adopt a new teaching approach to using iPads with junior infant pupils and thus enhance pupil’s communication skills. The learning outcome I planned to achieve was to stimulate the pupils’ oral language by using the iPad as a teaching resource. My views on the role of

iPads in the junior infant classroom were analysed throughout the self – study action research project.

“As I begin this research project, I am uncertain whether the junior infant pupils will have the digital skills to carry out the required tasks or is using the iPads more suitable to working with an older class” (McEvoy, 2019: 3).

By engaging in this self –study action research I wish to seek answers to the questions following:

- What Irish and international ICT policies and guidelines are available to teachers?
- How would I scaffold pupil oral language development?
- How would using iPads enable students to improve on oral language development?
- Would using the iPads provide learning opportunities for the pupil voice?
- Would using the iPads promote individual learning rather than collaborative?
- Have junior infant pupils the skills and capabilities to use iPads?
- How can iPads meet the learning needs of all the junior infant pupils?
- Would using the iPads with junior infant pupils complement my values or would I still be a ‘living contradiction’? (Whitehead, 1989)
- What do I consider the advantages and disadvantages of using iPads with junior infant pupils to be?

1.3 RESEARCHER BACKGROUND, VALUES, CONTEXT AND INTERVENTION

I am a past pupil of Froebel College of Education and am 13 years qualified with a Bachelor of Education degree. I teach in a Delivering Equality of Opportunity in Schools (DEIS) Infant School in Dublin. I have experience teaching junior infants, senior infants and first classes. In September 2019, I undertook a new role as Team Teacher for Junior Infants. This role involved me engaging in literacy and numeracy station teaching alongside each of the four junior infant teachers. I also provided extra support and guidance to the junior infant pupils with special educational needs.

1.3.1 Values

My chosen values are related to my context of teaching in a DEIS school and Froebel's philosophy of active - learning. My core values are respect, equality, creativity, collaboration and lifelong learning. After engaging in this Masters in Education (Research in Practice), I can further classify my values into ontological and epistemological. My ontological values are respect, equality, creativity and collaboration. I teach in a DEIS school, I show respect and equality for the pupils regardless of background. I relish in providing opportunities to show respect and equality to the voice of the child. I encourage creativity and collaboration amongst pupils during lessons. In my everyday teaching, I adopt a holistic approach to the child. I encourage all children to achieve their potential in a happy and safe environment. I provide opportunities for the children to communicate and build relationships with each other.

My epistemological value is life - long learning. This is an important value to me in both my personal and professional life. In my personal life, I am seeking new knowledge by engaging in this Masters of Education. I chose this Masters in Education course, as I wanted to understand and reflect on my practice and acquire new knowledge. In my professional life in school, in September 2018, I was the successful candidate and undertook the role of Assistant Principal 11 in my school. The post involves the role of ICT co-ordinator. My professional values are that I am a conscientious worker and I take pride in my work. I use my initiative in school and am willing to introduce new teaching methodologies.

However, on examination of and reflection on my core values I feel that at times I am experiencing myself as a 'living contradiction' (Whitehead, 1989). This theory can "show how people can position themselves as living contradictions, because they hold certain values while also experiencing the denial of these values" (Hymer et al., 2008: 69). I am concerned that I am not providing adequate support or opportunities to develop the pupils'

oral language. I feel pressure to complete the school workbooks, which reduces the amount of group work time in my lessons. This decreases opportunity for pupil creativity and collaboration, which means I am not implementing the knowledge and skills of active learning from my teacher education training in Froebel. I am the ICT post holder in my school but this is an area I have neglected to up – skill in. I am struggling to keep up to date in a technology world, which is constantly evolving and changing at a rapid pace.

1.3.2 Research context

The research was conducted in my own primary school with junior infant pupils. There are 12 class teachers and 4 special educational needs (S.E.N.) teachers in my school. It is a co-educational school and we have four of every band from junior infants to first class. I identified pupil oral language as a chosen target area of improvement in my teaching. I organised a school Skipathon to raise money to purchase iPads for our school five years ago. With the proceeds from this fundraiser, 12 Apple iPads Air were purchased. The iPads are used for station teaching in senior infants and in first class. The pupils engage in literacy and numeracy apps and this is usually an independent activity. The majority of the apps on the iPad are gaming apps rather than ones that facilitate pupils to create their own content. It is my role to ensure the apps on the iPads are updated and that the iPads are charged regularly. Junior infants do not use the iPads in my school, due to the low number of iPads.

1.3.3 Intervention

I had planned to conduct two action cycles with six different junior infant pupils in each cycle. The pupils were withdrawn to my learning support classroom. My action research sessions involved the junior infant pupils using the school iPads as a learning tool to aid their communication and collaboration skills. The pupils brought the iPads to the school

garden and took photographs using the camera on the iPad. I researched and selected the Book Creator app for the pupils to create their own eBook of photographs. Pair work and discussion time were facilitated during regular breaks both during and after iPad tasks.

1.3.4 Unforeseen challenge

In March 2020, all schools were closed and did not re-open for the rest of the academic year, due to Covid 19. When this unexpected event happened, I had to pause and consider what data I had collected to date. I was fortunate that action cycle 1 was fully completed and I had conducted a focus group with the pupils to gain feedback on the sessions. However, I had limited data gathered on action cycle 2 as my data collection stopped on week 2 of action cycle 2. This meant that I could not implement and analyse the success or failure of interventions and changes that I wanted to make to action cycle 2. Even with school closures, I ensured that not all data collection ceased as I continued to write in my reflective journal. I also facilitated and conducted two interviews with teachers through the online communication platform Zoom.

1.4. POTENTIAL CONTRIBUTION TO THE STUDY

For the wider community, the significance of this self - study action research is that little research has been conducted to date on the use of iPads with junior infants in an Irish school setting. This research can be described as very timely. The current environment is where all pupils had to engage in remote learning using digital devices, due to a global pandemic Covid 19. This thesis lays out clearly the research process I undertook when engaging in the two action cycles with junior infant pupils. The findings of this thesis will be relevant to practitioners in all class levels beginning their journey of integrating the use of iPads in the classroom. Teachers can relate to my rationale of this study, which was to identify areas of improvement in my practice to bring about change. I wanted to combine

my interest in ICT with how I could improve my practice of developing pupils' oral language. The pedagogy of how to use iPads with junior infant pupils will be of particular interest to teachers. This research will be the foundation for professional dialogues around fostering all pupils' digital skills beginning with junior infant pupils. I will present my findings to my staff members, to inspire, and encourage them to introduce my intervention in their classrooms. Self - study action research focuses on the examination of one's values and one's own environment to bring about improvement to the teaching and learning in the classroom (McNiff, 2014).

“Educational theory and research has profound implications for the future of humanity, it is based on values which are communicated, through our practice, to our students” (Whitehead, 2009: 69).

1.5. CHAPTERS OUTLINE

The next chapter a literature review involved critical engagement with literature to deepen my understanding of the area of pupil oral language development and of digital technologies with specific reference to the iPad. The research chapter outlined in detail the qualitative data collection methods used in the research such as reflective journal, teacher observations, focus groups and interviews with teachers. Ethical consent was sought from Maynooth University and from my own school before the research commenced. Children's assent was sought to ensure they were willing participants in the research before the junior infant pupils were withdrawn to my classroom. Feedback and advice from my critical friend, my colleagues and my supervisor formed a central role in my research. This ensured triangulation of accurate and truthful findings. “People whom we discuss our new ideas and who offer us critical, robust, honest and supportive feedback” (Glenn et al., 2017: 32).

CHAPTER 2: A REVIEW OF THE LITERATURE

This chapter explains the vocabulary of ICT, digital technologies, iPad and tablet. Irish and international guidelines and policies on digital learning were examined. Pupils' experiences of digital technologies in Ireland and United Kingdom were discussed. I analysed the role and benefits of using iPads as a learning tool with specific focus on apps and motivation. I explored the pedagogy of using iPads in the classroom with specific reference to a constructivist theory. Pupil oral language development in a DEIS school setting was investigated. Literature on equality to the pupil voice was outlined. Brookfield's (2017) four lenses of critical reflection as a framework for reflection will be analysed.

2.1 INTRODUCTION

“Digital technologies have become ubiquitous” (Barfield Boatwright, 2016: 1) and play a pivotal role in the lives of people today. Dunn et al. (2018) highlights that adults do not have the same experience as children with technology as children have grown up with technology in their environment and are “digital natives” (Henderson and Yeow, 2012: 78). There has been a rapid change in the 21st century, the use of digital technologies within the classroom comprises of various levels of engagement with a multitude of devices. These devices range from interactive whiteboards, laptops, and iPads to digital cameras. “Digital technologies can be defined as electronic tools, systems, devices and resources that generate store or process data” (Department of Education and Skills, 2015: 5). An increased availability in mobile devices (Reeves et al., 2017) and touch screen tablets (Oliemat et al., 2018) are changing the educational landscape. Burnett (2015) identifies that teachers' can have a reluctant attitude to utilising digital technology in their daily practice. Rogers (2007) noted there is a fear that with such high increase in the use of

technology that even people who may consider themselves experts will have difficulty keeping up to date with current best practice.

2.1.2 iPad and tablet

The vocabulary naming the electronic devices iPad or tablet will be interchangeable throughout the literature review as they are a similar device but produced by different companies. Apple launched the first iPad in 2010. An iPad is easy to carry, has no keyboard, is operated with the use of a touch – screen and has a huge range of apps available to the user. Within a short space of time, more manufacturers Samsung, Google and Microsoft released their version of the iPad called the tablet. “A tablet computer or a ‘tablet’ is defined a one-piece mobile computer that is typically a light, thin device controlled by a touch screen” (Professional Development Support Team, P.D.S.T. 2014). When iPads were first introduced, “technology enthusiasts” acquired them but businesses and educational settings were quick to follow this new trend (Henderson and Yeow, 2012: 78). Touch screen tablets were described as “entertaining, attractive, and potentially powerful learning tools for young children” (Oliemat et al., 2018: 591). However, Clarke and Abbott (2016) argued that little research has been conducted in this area especially with younger pupils using iPads in primary schools.

2.2 POLICIES

United Nations Educational, Scientific and Cultural Organization’s (UNESCO) international ICT framework emphasised that teachers have an important role to play in developing pupils’ I.T. skills. Teachers need to offer support and guidance to students so they become “collaborative, problem solving, creative learners through using ICT so they will be effective citizens and members of the workforce” (UNESCO, 2011: 7). The Department of Education and Skills (DES) highlighted that “ICT is now pervasive in

society and it continues to transform how we live our daily lives” (DES, 2015: 5). In recent years, the DES has published an abundance of documents to encourage the use of ICT in the classroom. One of these documents is the *Digital Strategy for School 2015 -2020*, *Teaching Learning and Assessment* (2015) which acknowledges that to effectively integrate ICT, schools will require direction, assistance and support. This document laid out guidelines and statements of digital skills and learning outcomes to be achieved. From 2018, the DES changed their terminology in their guidelines and publications, will no longer use ICT, and instead will refer to as “digital technologies” (DES: 2018: 3). The *Digital Learning Framework* (2018) encouraged schools to create a Digital Learning Plan, which should be reviewed and updated regularly. This plan outlined that schools’ identify an ICT vision for the embedding of digital technologies in teaching, learning and assessment. This document incorporates targets and priorities for the improvement and development of the use of technology in schools. The Government of Ireland developed a five-year plan to invest significantly in schools to update their ICT infrastructure and to aid schools with using more ICT in the classroom. Even with all this investment, a survey published in July 2020 on Digital Learning in Early Start, Primary Schools and Secondary Schools found that there is a need for improvement in this area. When an inspector visited primary schools, they found that digital learning was part of the lesson in 55% of lessons. It also concluded if digital technologies had been utilised in 34% of primary lessons observed, the pupils learning would have been enhanced.

“The inspectors’ findings are showing that there is scope to use digital technologies more regularly as part of teaching and learning in schools and that their use would improve learning for children and young people in many instances” (DES, 2020 :16).

2.2.1 Pupils’ experiences of digital technologies

Murray et al. (2019) published a report on ‘*Growing up In Ireland: The Lives of Five year olds in Ireland*’ which examined many aspects of children’s lives including their experience of screen time. The results of this report were that “three quarters of five year

olds played on an electronic device of some kind (computer, tablet or smart phone) at least occasionally, with over a quarter doing so every day” (Murray et al., 2019: 82). It also concluded that the majority of parents (90%) supervised their child while they were engaging in screen time. Research carried out by Levingstone et al. (2014) in the United Kingdom found that one in four children under the age of two and more than a third of three to five year olds have their own tablet. The report also highlighted pre-school children spent 1hr 19mins a day on a tablet during the week and 1hr 23mins at the weekend. These figures conflict with the guidelines from the American Association of Paediatrics (AAP) (2016) guidelines and World Health Organisation (WHO) (2019) on screen time for children as outlined in CyberSafe Ireland (2018) report. The screen time in both these guidelines refers to television and the use of laptops or electronic devices. AAP (2016) recommended for children younger than 18 months, use of digital media should be discouraged and only participate in video – chatting. Screen time use for pre-school children, ages 2 to 5, should be limited to just 1 hour a day of high-quality programming. In April (2019), WHO issued further guidelines around screen time they include recommending no sedentary screen time for children under the age of 2, with sedentary screen time for 2 - 4 year olds recommended to be limited to no more than 1 hour a day.

2.3 ROLE OF IPADS IN THE CLASSROOM

The benefit of using mobile devices such as an iPad, it “is a game changer in education and that we need to find more ways to harness it as a powerful teaching and learning tool” (Reeves et al., 2017: 38). Many researchers (Falloon and Khoo 2014; Reeves et al. 2017; Fisher et al. 2013) have described the attributes of the iPads as portable, touch – display screen, ease of connectivity and have a wide variety of apps. However, (Clarke and Abbott 2016; Clark and Luckin 2013) highlighted the financial cost of acquiring iPads. Burnett (2015) explained the child needs to be the central focus when examining and reflecting on

the pupil's use or lack of experience with digital technologies in the classroom. A study carried out by Young (2016) found that “when considering the effectiveness of the iPad as a teaching tool, teachers reported that its usability and versatility made it effective (Young: 2016: 188). However, not everyone agrees for the use of iPads in the classroom. “Some educators believe that the classroom should serve as a place for children to be unplugged” (Vaughan and Beers, 2017: 322). In most of the literature on the benefits of using iPads or tablets in the classroom, the common themes can be classified under the headings choice of apps and pupil motivation.

2.3.1 Apps

Apps on an iPad are defined as “a software application that can be downloaded and installed on a personal electronic device” (Barfield Boatwright, 2016: 2). The first step to entice the learner is to choose a suitable app and meet the curriculum objectives of the lesson, according to (Lacey et al. 2014 cited in Reeves, 2017). Clarke and Abbott (2016) identified that children were highly skilled in the area of using apps on the iPad and pupils were able to delete apps (Reeves et al., 2017). When teachers are selecting apps, there must be opportunities for the children to “create their own content” (Wells Rowe and Miller, 2016: 427). “We set as a priority apps that would allow for creation, collaboration, and communication” (Fantozzi et al., 2017: 683). The advantage of the iPad is its’ engaging and “multimodal feature” (Neumann and Neumann, 2017: 204) such as the camera, as it allows photographs to be taken and these can be used to create eBooks within a very short space of time. Flewitt et al. demonstrated this further in a study:

“reception class children used the iPad to take photographs of their outdoor activities and imported them to ‘Our Story’ as the basis for story creation – just moments after the photographs had been taken” (2015: 299).

Kucirkova & Sakr, (2015 cited in Dunn and Sweeney, 2018: 860) outlined the benefits of story making apps, which enabled pupils to add sounds, images, text and design to enhance

their eBooks. Reeves et al. (2017) advised to select a wide variety of apps that range in ability level and to allow the students access to one app at a time. The apps should be trialled and tested by teachers before they are introduced in the classroom, as some apps may not meet the curriculum objective for the lesson. However, this can be very time consuming.

“Notably, teachers had to spend many out-of-school hours searching for appropriate apps to support learning objectives, and they dedicated considerable effort and time in planning activities around apps” (Flewitt et al. 2015: 302).

2.3.2 Motivation

Several researchers (Clarke & Abbott, 2016; Dunn and Sweeney, 2018) found that children had high motivation and a desire to use the iPads. Flewitt et al. (2015) suggested there was an improvement in the children’s concentration skills and an increased determination to complete challenging tasks when the pupils were using the iPad. Another motivating factor is that pupils’ liked having a choice of app (Dunn et al., 2018). The advantage of the tablet is with increased enjoyment the children do not consider themselves as learning (Oliemat et al., 2018) and this can lead to improved learners (Selwyn, 2016). However, “technology needs to stop being thought of as the reward system or just a gaming device and needs to start being tools we can use to relate and communicate” (Donohue, 2015: 202).

2.4 PEDAGOGY

Vaughan and Beers (2017) felt there was little guidance or instructions for teachers on how to use the iPads in the classroom. They were informed they needed to use technology but the teaching methodology was their own choice. Teachers and schools were struggling with introducing the iPads to their teaching (Young, 2016).

“However, the potential of technology can only be realised in schools when it has been properly adopted and integrated in the teacher preparation programmes” (Tunjera and Chigona, 2020: 127).

Donohue (2015) argued teachers in the younger years setting must have the knowledge and skills to integrate technology to promote the holistic development of the child. Burnett (2015) described a framework used to analyse how pupils are using the devices. The framework focuses around the concepts of

“what children engage in on and off screen, how the pupils interact with each other and the teacher and what previous experiences the pupils have of using the technology” (Burnett, 2015: 199).

Wells Rowe and Miller (2014) highlighted as children became familiar with the iPad and eBooks, less teacher support was needed. The (P.D.S.T., 2014) explains this method as the balance of “learner control” shifts from teacher to student. However, Selwyn (2016) argues that often teachers have an “assumption” that all pupils have the necessary skills to use the iPads and this implies a “corresponding withdrawal of expert direction, guidance and support” (2016: 73). Often, “mobile devices are simply used to perform the same tasks that were previously completed without the use of a mobile device” (Romrell, 2014: 1). On the contrary, Selwyn (2016) disagrees that educators set out to do tasks the same way as before when using technology. Wells Rowe and Miller (2016) argued that the iPads offers learning opportunities, which would not be accessible with workbooks. With the integration of digital technologies in the classroom, it provides for “faster, more convenient, more exciting or more efficient ways to use technology” (Selwyn, 2016: 5).

2.4.1 SAMR and TPACK

There are two types of frameworks that teachers can use to evaluate how effective the use and purpose of digital technologies in the classroom.

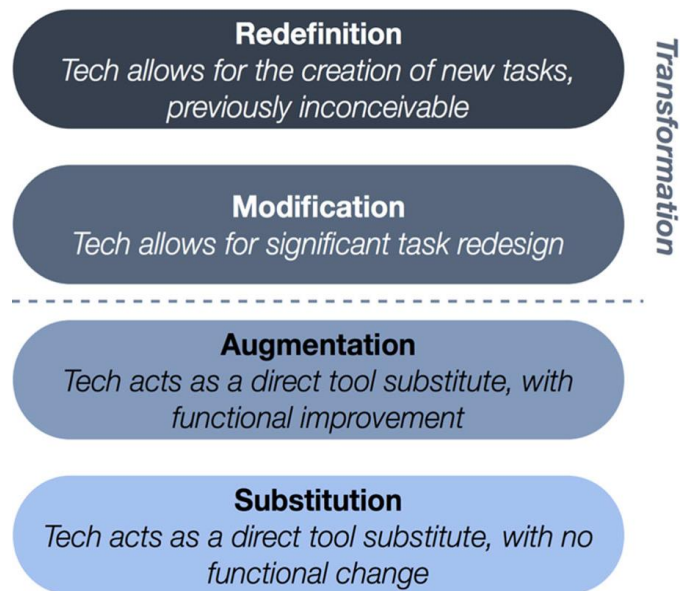


Figure 2:1 SAMR model

Source: Puentedura, R. R. (n.d.) [online].

The first framework by Puentedura, (2013) who devised the pedagogy called S.A.M.R. (Substitution, Augmentation, Modification, and Redefinition) model, this refers to four levels of technology integration. This model was developed as part of his work using technology in the state of Maine in 2006. This model encourages, guides teachers to define the use of technology in their classroom from lower order to higher order, and thus simplifies a complex process (Hamilton, 2016).

“The SAMR Model is an evaluation tool of lessons using modern technologies and software with the hope of promoting 21st century skills in both staff and students” (Barfield Boatwright, 2016: 11).

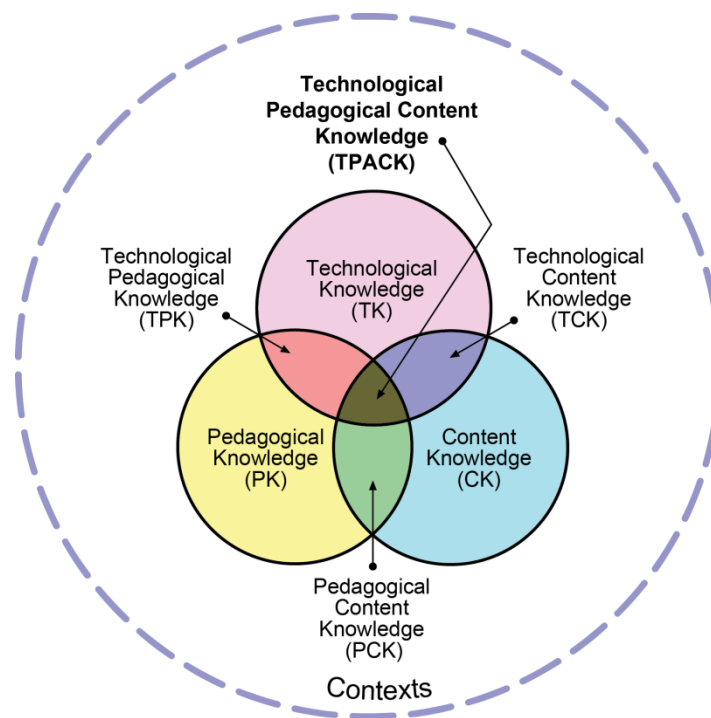


Figure 2.2 TPACK framework

Source: Koehler, M. (2011) [online]

The second model is known as TPACK (Technological, Pedagogical and Content Knowledge) framework, which was devised, by Mishra and Koehler (2006). Teachers engage with three key areas when teaching a lesson using digital technologies and these are technological knowledge (tk), content knowledge (ck) and pedagogy knowledge (pk). This framework also comprises of the level of knowledge which teachers' needs to successfully integrate digital technologies effectively and these are pedagogical content knowledge (PCK), technological content knowledge (TCK) and technological pedagogical knowledge (TPK). To explain each of the above PCK is about the content of what you are teaching and identifying the lesson objective. TCK the focus is on what digital tools are available to use and TPK is how you will deliver the lesson content to the pupils. When these three areas come together, they form TPACK. Teachers solely do not have to focus on either TPACK or the SAMR model and could combine to both evaluate and rate the use of technology in their lesson. TPACK focuses on the teacher's knowledge while the SAMR model assesses the use of the technology by pupils according to four levels.

“To complement TPACK with the Substitution Augmentation Modification Redefinition (SAMR) model as it actually predicts that the integration of technology at different levels yields certain outcomes” (Tunjera and Chigona, 2020: 128).

2.4.2 Constructivist theory

Flewitt et al. (2015) description of pupil collaboration when the pupils were helping each other use the iPads can be linked to Vygotsky’s (1978) theory on zone of proximal development. Vygotsky (1978) theory is

“the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under guidance or in collaboration with more capable peers” (Barohny, 2019: 19).

Flewitt et al. (2015) explained the more able child helped and guided their peers and by utilising this strategy, it provided language opportunities for the pupils. Beetham and Sharpe (2007) highlighted if learners are to engage successfully in digital society, they need to be given the opportunity to communicate and collaborate and this can facilitate the exchange of new concepts and practices (Clarke and Luckin, 2013). The benefits of pupil collaboration when using the iPad was turn taking and offering encouragement to each other’s learning and “rejoiced in each other’s successes” (Flewitt et al., 2015: 301). However, while there was an agreement that pupil collaboration occurred when they were engaged with the iPads “sharing could lead to some monopolisation” (Clarke and Abbott, 2016: 1053).

2.5 ORAL LANGUAGE DEVELOPMENT

The *Primary School English curriculum* (1999) highlighted that oral language has an important role to play in the learning and development of the child. An oral language objective was that pupils develop an understanding for “the conventions of oral language interaction” (N.C.C.A., 1999: 11). These guidelines were replaced with the *Primary Language Curriculum* (2015). The *Primary Language Curriculum* was introduced on a

phased based starting with junior infants to second class. The rationale was to enable children to communicate successfully with peers and adults and to be able to fully engage in the world around them (N.C.C.A., 2015). Language is the main way we interact with our environment both informally and formally and fosters the development of the child. Technology has a role to play in oral language development as highlighted by (Vaughan and Beers 2017; Flewitt et al. 2015). The early years setting is a good place to start with young children in preparing their language and technology skills and that classroom assistants can have a supportive role in developing these skills (Vaughan and Beers 2017; Clarke and Abbott 2016). An aim of the *Primary Language Curriculum* was to “enable children to build on prior knowledge and experience of language and language learning to enhance their language learning” (N.C.C.A., 2015: 26).

Educational disadvantage can be described as a part of society who needs help and support to engage successfully within the education system. To address the difference in educational attainment and provide equal education to all, the DEIS scheme was introduced in Ireland in 1980. The Government provided extra funding and resources to schools classified as a DEIS context. Molloy et al. (2016) investigated the reason for the huge difference in oral language development between pupils from low social economic status and from high social economic backgrounds. The findings were that the formal language and routines of school were a different world from the environment they were familiar with. Rasku et al (2012) stated this was a common and difficult challenge for teachers to build on pupil’s oral language. Technology can play a role in overcoming this.

“For educators and support teams , technology can alter the way parents and children from linguistic , cultural and economic backgrounds are able to communicate and share their knowledge with teachers and their children” (Donohue, 2015: 202).

2.5.1 Equality of pupil voice

Reeves et al. (2017) states to improve student participation and involvement in tasks and teachers should seek frequent contributions from students to become more an “inclusive classroom” (Messiou and Jones et al., 2015: 256). This will aid the teacher’s evaluation of the task and inform future planning. However, teachers are often nervous and fearful to ask for input from pupils especially on “teaching and learning issues” (Bragg 2007: 512).

Donohue (2015) highlights when the teacher is mindful of the children’s background, the teacher will create a safe learning environment with everyone working collaboratively. The teacher can create a space where everyone is respected and valued (Pollock et al., 2012).

Flutter (2007) acknowledged the importance of valuing and including pupil voices and this is referred to and acknowledged by many countries in the world. One such document is the *United Nations Conventions of the Right of the Child* (1989) article 12:

“The views expressed by children may add relevant perspectives and experience and should be considered in decision-making, policymaking and preparation of laws and/or measures as well as their evaluation.”

Dunn et al. (2018) carried out a recent study on digital technology and reported that in the United Kingdom children’s rights to be heard have declined in recent years. Children’s voice has an important role to play where the child’s opinions and experiences is central to the research. However, Flutter (2007) warns often it is only the voices of the most vocal pupils that are heard and responded to.

2.6 REFLECTION

Brookfield (2017:3) described “critical reflection is, quite simply, the sustained and intentional process of identifying and checking the accuracy and validity of our teaching assumption.” Sullivan et al. (2016) discussed reflection involves taking the time to think back over a past event and to investigate and explain what happened (McNiff, 2014).

Reflection is linked to the past but it has relevance for future events. Brookfield (2017)

identified four lenses through which we could reflect on our assumptions, beliefs and values. These four lenses are students' eyes, colleagues' perceptions, personal experience, theory and research. Glenn et al. (2017) states as action researchers it is about internally working through our taken for granted assumptions and Brookfield's (2017) four lenses can be used as a framework to develop the research process and engage in critical reflection at all times.

Teachers must view themselves as the "teacher as learner" (Stoll and Fink, 1996:177). By teachers engaging in life - long learning this will improve the quality of learning in the classroom for the pupils. Flewitt et al. (2015) noted that teachers and pupils can collaborate and discover new knowledge together and when this happens, the outcome is celebrated as a class together. Flutter (2007) discussed about the value of the voice of the pupil. It is about listening to what the pupils have to say about their learning and their environment and when this occurs effectively, it may bring about a change in the teacher's own practice. Haymore - Sandholz (1997) explained when teachers engage in reflection on their practice it can identify the success and failures of their lessons. "There is always an element of uncertainty when trying out new practice or strategy, and a distinct possibility that it will not work" (Stoll and Fink, 1996: 95).

2.7 SUMMARY

There has been a rapid increase in the use of technology in all aspects of life and especially in the education sector. Digital technologies in schools can range from the use of interactive whiteboards in the classroom to portable electronic devices such as the iPad or tablet. (Burnett 2015) concluded that teachers' could have a negative attitude towards incorporating technology in their daily teaching. '*Growing up in Ireland Live of Five year olds*' (2019) survey found that 75% of five year olds had access to some kind of computer, tablet or smart phone and nearly always parental supervised provided. The AAP (2016)

and WHO (2019) released guidelines on the recommended screen time for children 5 years of age and younger. The Government of Ireland have invested money in improving school's ICT infrastructure. They have also published numerous documents for teachers on how to integrate I.C.T. effectively in the classroom. However, a recent study in (2020) by DES found that while progress has been made in this area there is still improvement needed. The benefit of using iPads, as a learning tool is it provides innovative learning and the iPads are portable. The iPads have access to a wide variety of apps and if possible, apps that encourage creativity should be chosen. Another advantage of using the iPads is the pupils' motivation and enthusiasm to use them. The use of iPads in the classroom should have a clear objective and goal to achieve. The effectiveness of the use of technology can be measured with the TPACK and SAMR model. Oral language is an area of concern in DEIS schools (Molloy et al., 2016) and technology can play a role in developing pupil's oral language (Vaughan and Beers 2017; Flewitt et al. 2015). Opportunities should be given to pupils' to provide feedback on lessons as this will benefit both pupils and teachers (Reeves et al., 2017). Brookfield's (2017) four lenses reflection framework highlights the way we teach and how we teach are based on a number of factors such as how the pupils engage and learn our colleagues provide guidance, suggestions, and our own personal experiences of the education system.

CHAPTER 3: RESEARCH METHODOLOGY OF THE STUDY

3.1 Research paradigm

My core values are respect, equality, creativity, collaboration and lifelong learning. I am mindful of these values in both my personal and professional life. I try to exhibit these values in order to encourage them to be reciprocated, as in to lead by example. The research paradigm I have chosen is self- study action research. I chose this method as the focus is on me as the practitioner, and I wish to bring about change to my practice and make a new claim to knowledge. It is investigative, analytical and critical. Self – study action research is about examination of one’s values to bring about change to one’s own practice. Our values can “provide us with the basic structure of our expectations for ourselves, and also with the overarching principles towards which we strive in our practice” (Sullivan et al., 2016: 60). My research question was how to improve my practice of facilitating pupil oral language development when the pupils are using the iPads. My goal was to introduce the iPads as a learning tool with the junior infant pupils I teach.

3.1.1 The nature of action research

The focus is on the “I” in self-study action research and the question “how can I improve my practice” (McNiff, 2014: 55). Action research requires us to critique what we do in our everyday practice, examine, and reflect on our values, beliefs and assumptions. “Self - study action research is a deeply values based approach to critical reflection on one’s own work” (Sullivan et al., 2016: 28). Glenn et al. (2017) highlights action research involves taking control of one’s own individual practice to create a sense of ownership, which increases teacher enthusiasm, and can bring about transformation to one’s teaching (Blaxter et al., 2010). Bassey (1990 cited in Pollard, 2002) states action research often takes a cyclical approach. Critical dialogue is an important part of the process of action research. As the action research progresses, it is essential to create a validation group,

which purpose is to ask “questions and verifies the findings” (Glenn et al., 2017: 30).

McNiff (2014: 23) summarises themes in action research as:

- Collaborative and democratic.
- Values oriented.
- Self-reflective.
- Goal oriented.
- Open ended, evolutionary, transformational
- Contextualised.
- Communities of practice.
- Critical.

3.2 RESEARCH SITE

I teach in a DEIS Infant School in Dublin. There are 12 class teachers and 4 S.E.N. teachers. It is a co – educational school and we have four of every band from junior infants to first class. I am a part of the school’s Special Education Needs Team and my daily schedule is team teaching in the junior infant classes for literacy and numeracy power hour. Our school has 12 iPads and these are used as one of the stations during literacy and numeracy power hour. The class teacher selects the apps and each child has their own iPad for 15 minutes at a station and then when the bell rings the children move to the next station. Often the apps on the iPad are chosen at random rather than being specific to the objective of the lesson. Due to low number of iPads, junior infants do not use the iPads as priority is given to senior infants and first class pupils.

3.2.1 Research rationale

When I began this research, I identified two areas of my practice I wanted to improve my teaching in, these were pupil oral language development and the use of iPads in my school.

I wanted to combine my interest in ICT with providing opportunities for the pupils to develop their oral language skills. From my experience of teaching junior infants in a DEIS school, pupil oral language is an area of weakness. The pupils have poor expressive language and my aim is to support and scaffold their oral language skills to build on their vocabulary. Two of the strategies I would regularly use is direct teaching of new vocabulary and language games and these are listed in my English fortnightly plan (see appendix 20). As the ICT Co-ordinator I was concerned that the junior infant pupils' digital skills were not being fostered and developed, as they are not timetabled to use the iPads. The senior infant and first class pupils play passive apps on the iPads. Passive apps are gaming apps that encourage fast swiping and it does not matter if the pupils get the correct answer, the game continues. I planned to use the iPads for enquiry-based learning and in doing so foster the pupils' oral language and digital skills. I wanted to introduce a new initiative to my school of providing opportunities for the junior infant pupils to use the iPads.

3.3 RESEARCH DESIGN

The aim of the research was to provide opportunities to develop pupil's oral language and digital skills using the iPad as a learning tool.

What I wish to find out from carrying out this research are:

- How do I improve my practice of encouraging dialogue while the pupils are using the iPads?
- How do I increase pupil collaboration when using the iPads?
- How do I improve my questioning skills to scaffold and build children's oral language?
- How do I develop children's thinking using enquiry based apps?
- How do I overcome the barrier that iPads can encourage individual learning?

- What are my values and beliefs about using I.C.T. in the classroom?
- Do I think using I.C.T. in the classroom is beneficial to the pupils learning?

I wish to critique my assumption that all children are familiar with and have experience of using iPads.

3.3.1 Research participants

I chose one out of the four junior infant classes in my school as participants in my research. The reason I chose this class was due to timetable compatibility, as it suited the class teacher and myself. It was a purposive study of six children for action cycle 1 and another six children for action cycle 2. The children were withdrawn to my learning support classroom. I interviewed two teachers and I conducted a focus group with pupils. I sought permission from my critical friend and colleagues to include their opinions as they provided valuable contributions to my research.

3.4 DATA COLLECTION

3.4.1 The nature of quantitative and qualitative research

Quantitative research generates numbers, percentages and graphs. It can be measured and analysed using statistics. Qualitative research is based on data of thoughts, assumptions, opinions and attitudes. It is most suited to self- study action research. Qualitative data is about critical analysis of the data and searching for themes or relationships between the data. “In other words, collecting your information, boiling it down, laying it out in various ways to help you figure out what you’ve got, deciding what you’ve got and checking it” (Kane et al., 2001: 290).

3.4.2 Data collection instruments

I did not choose a quantitative data method such as distributing questionnaires to the teachers in my school as this would not provide me with data on my practice. I chose qualitative forms of data collection, as I wanted to gather data as I implemented the interventions in my action research cycles. The data was collected using notes in reflective diary, teacher observations designed tasks, pupil's work samples and photographs.

3.4.3 Interviews

I chose interviews as a data collection method as interviews are “a goal or task oriented talk to gather information, in which the interviewer and the interviewee have their respective roles to play” (Gubrium et al., 2012: 231). The reason I interviewed two teachers was to compare their opinions on digital technologies to my own views. I chose one first class teacher and one resource teacher for the interview as they have had experience of using the iPads in their classroom for station teaching. An advantage of using interviews is that “it allows for greater depth than is the case with other methods of data collection” (Cohen et al., 2000: 269). I had two interviews scheduled with teachers for the week of 16th of March. Due to school closures, I had to adapt the interview environment to take place on Zoom communication platform. I prepared questions (see appendix 8), conducted an interview with a class teacher, and recorded using Voice notes app on my android phone. I was not satisfied with my questions from the first interview, as they did not adequately explore the teacher's experience of using iPads in our school. I amended my questions for the second interview (see appendix 9). “In the hierarchical relationship between the interviewer and the respondent, questions are predetermined by the interviewer before they are asked to the respondent” (Gubrium et al., 2012: 235). Due to Covid 19 restrictions and continuing school closures, the second interview was also conducted on Zoom. I used the Otter app on my phone to transcribe the interview

verbatim. It was important that both parties were at ease engaging in a new experience of participating in an interview using the Zoom communication platform. The disadvantages of conducting the interviews online means you are relying on an internet connection and on two occasions there was a time delay when relaying information and the screen froze. I, as the researcher created a good rapport with the interviewee.

“A good contact is established by attentive listening, with the interviewer showing interest, understanding, and respect for what the subject says, and with an interviewer at ease and clear about what he or she wants to know” (Kvale and Brinkmann, 2009 : 128).

3.4.4 Focus groups

The benefits of using focus groups as a data collection method are it was time efficient; it was less formal than an interview and encouraged group interaction and response.

“Researchers can gain insights through listening to participants use their words and expressions to communicate their experiences” (Fern, 2001: 5). I facilitated a focus group with the pupils as the end of action cycle 1 to gain further knowledge into the pupils learning and the challenges they experienced when participating in action cycle 1. The information gained from this formed the basis for the interventions for action cycle 2.

“Focus groups might be useful to triangulate with more traditional forms of interviewing, questionnaire and observation” (Cohen et al., 2000: 288).

3.4.5 Reflective journal

Daily records were kept in my reflective journal which purpose was to “record your progress, feelings, thoughts, insecurities and insights, day by day, as your research continues” (Blaxter et al., 2010: 49). Journaling also provided opportunities to explore previous experiences and knowledge as these influence our behaviour in everyday situations (Moon, 2004). I adopted Brookfield’s (2017) four lenses approach to critical reflection to analyse my journal entries.

“The value of journaling in action research lies in the reflective process that encourages a deeper awareness and confidence in oneself through extending personal and professional insights” (Coughlan and Brydon- Miller, 2014: 474).

3.5 DATA ANALYSIS

“Data are the distinct pieces of information that you collect or observe to examine and analyse” (Sullivan et al., 2016: 91). I analysed my data collected from pupil work samples and feedback from the pupil focus group. I engaged effectively with my reflective journal throughout the action cycle and this was valuable data. The pupils’ oral language development was the focus from the start to the end of my action research cycle. I analysed pupils’ motivation and willingness to carry out the task. I printed out children’s work samples from Book Creator and examined the children’s ability to complete the task. Comments, suggestions and feedback from my critical friend, colleagues and my supervisor were included as they helped me with my research process. All data collected was dated and signed. I interviewed two teachers to explore their feedback on using digital technologies in the classroom and compared these opinions to my own and to my values. All the data was collated and the evidence of how to encourage children’s oral language using the iPad as a teaching tool was generated.

3.5.1 Thematic analysis

I utilised the approach of Braun and Clark (2006) to analyse the written texts, which were the reflective journal, teacher observations, focus group with pupils, interviews with class teachers, critical friend and colleagues’ suggestions. Braun and Clark (2006) analysed data by colour coding the data to identify categories and then discover emerging themes. The drawings were analysed using Bland (2012) to identify three key features in each drawing. The photographs the children took on the iPad were analysed according to themes using Merriman & Guerin’s (2006) framework.

3.5.2. Validity and credibility

To ensure honesty and rigour of my research I engaged with my supervisor, colleagues and my critical friend on a regular basis. Glenn et al. (2017: 30) describes further the importance of Brookfield's (2017) colleagues' perception when they introduce the idea of having a critical friend throughout the research. A critical friend is a person whom the progress of our research is discussed with and whom can offer advice, critique our work and offer guidance when we encounter difficulties. My critical friend was a former colleague whom I worked with for many years in my school. Bassey (1990 cited in Pollard, 2002) explains action researchers, "meaning someone who responds to the invitation to invest some time and effort into critically examining one's action research findings" (Bassey, 1990 cited in Pollard, 2002: 38). I followed good ethical procedures when conducting my research, critically analysed my data and sought to make a claim to new knowledge. "Cross – checking your work from different perspectives is triangulation, which can show the accuracy and validity of information you gather" (Sullivan et al., 2016: 82).

3.6 ETHICAL CONSIDERATIONS

The research was conducted with an ethic of respect for all participants. Consideration was given to minimise disruption to my team teacher timetable and to the pupil's daily class routine. Maynooth University ethical guidelines were adhered to. I observed my school's own policies specifically Child Protection Policy, Child Safe Guarding statement and Acceptable Use Policy. I followed closely the Data Protection Guidelines as set out in the Data Protection Act 2018.

3.6.1 Vulnerability of participants

The tiredness and nervousness of the children could have been a problem as the children were of a young age. The research was carried out in the morning time, as the children are more likely to be tired in the afternoon. I was aware that my research should not provide any discomfort to my participants and to create a safe environment for them free from ridicule. Skånfors (2009 cited in Borovac, 2015: 316) refers to “having an ethical radar” when engaging in research with young children.

3.6.2 Power dynamics

Another learning support teacher took notes of what the children were saying as I conducted a focus group with the pupils. The questions used in the focus group were clear with simple language to encourage responses from the children. I was aware of the adult power relationships and mindful of the dynamic in the room when a second adult was present.

3.6.3 Principle of informed consent

Permission from school’s Principal and school’s Board of Management was sought. Permission from the children’s class teacher was requested to carry out research with the pupils from her class. Written consent from parents was sought for their child to take part in the research. I followed the school’s policy on communication with parents. I was available before and after school if any parent required explanation or clarification. All the returned agreed parental consent permission slips were included in a random selection process. I withdrew six names for action cycle 1 and six names for action cycle 2 with the class teacher present. I sent a note to parents notifying them that if their child was / was not taking part in the research. I sought permission from my critical friend and colleagues to include their opinions as they may provide valuable contributions to research.

3.6.4 Child assent

Children's assent and willingness to take part was verified not just at the beginning of the research but also at each of the action cycle sessions. The language used was of age appropriate as the children were of a young age. Children also gave their consent by writing their name and made a tick or a cross to show their willingness to participate (see appendix 4). Children were informed in simple language they have the right to withdraw from the research at any time without any consequence.

3.6.5 Data storage

The photographs the children took were stored on the school iPad and then transferred to a laptop at the end of the action cycle. Data collected was stored on a password-encrypted laptop. Children's work samples were kept in a locked filing cabinet. Recording made of the interview with class teacher was kept in a locked filing cabinet. Minimal data was collected on the participants of the research. Data will be kept for as long as necessary in accordance with Maynooth University guidelines and the Data Protection Act 2018. The final thesis may be used for educational purposes for example: a presentation to my staff or a Teachmeet conference.

3.6.6 Confidentiality and anonymity

To ensure anonymity pseudonyms were given to each child's work and to their input in the focus group. Confidentiality was guaranteed unless there was a child protection concern. Numbers were allocated to the interview participants. I understand my obligations regarding compliance with national and my school child protection guidelines. I was aware I could not promise confidentiality if a child protection concern arose and I would inform the School's Designated Liaison Person. I consulted my school's Acceptable Use Policy and the Data Protection guidelines around the taking of photographs using the iPad. As

part of the research, I encouraged the children to use the iPad camera to take photographs of objects around the school and not of people.

3.7 DESCRIPTION OF INTERVENTION

My values and my research question informed the planning of the action cycles. Action cycle 1 was in a six-week block from January 13th – February 28th 2020. In action cycle 1, the pupils initially had free exploration of iPads and could choose an app. Frequent breaks were facilitated to encourage pair work and pupil discussion. The vocabulary associated with a garden was pre - taught to the pupils before their visit to the school garden. The pupils created a drawing from memory of their school garden and engaged in showing and describing their drawing. I demonstrated to the pupils how to use the camera on the iPad. The pupils brought the iPads to the school garden and the pupils had the freedom to take any photographs of objects they liked in the garden. I showed the pupils step by step how to use the Book Creator app on the iPad. The pupils selected photographs and created their own eBook. The pupils presented their eBook to the group and the other children asked questions. The final task was the pupils created a drawing of their favourite photograph. Action cycle 2 was planned for 2nd March – 3rd April 2020. In action cycle 2, the pupils had become familiar with the settings on the iPad for example how to turn it on and off and how to use the home screen button. The pupils had worked in pairs with one pupil choosing an app on the iPad and after five minutes, the pupil would explain how to play the app to their partner and this it was their turn. I had demonstrated to the pupils how to use the camera and the pupils had practiced taking photographs in the classroom. However, all data collection in schools ceased due to Covid 19 and school closures on 12th of March and the pupils were on week 2 of Action cycle 2.

3.8 LIMITATIONS

Constrictions to my timetable were a problem. If the lesson was going really well and the children wanted to continue working on the task after 25 minutes I had to prepare the children to return to class as I was teaching other pupils. Working with a small group posed a problem as the children may be absent on the day of the research. As my research, action cycle was at the start of the school day at 9 a.m., often children were late coming to school and late to join my action research group, therefore, I had to repeat task instructions and this sometimes changed the dynamics of the group. The limitation of the data from the focus group is the pupils may have answered the questions in a certain way to please the researcher or the pupils may have copied and repeated answers the other pupils gave. Another limitation as action cycle 2 was incomplete I could not compare data from action cycle 1 to establish if interventions I had hoped to introduce were a success or a failure.

3.9 TIMELINE FOR THE SELF –STUDY ACTION RESEARCH

September 2019	Write the Proposal.
October 2019	Write a draft of literature review.
November 2019	Seek ethical permission from Maynooth University.
December 2019	Seek ethical permission from school's Principal and Board of Management. Get parental permission for children to be research participants.
January 2020 - End of February 2020	Action Cycle 1 and focus group with pupils.
March - April 2020	Action Cycle 2.
March 2020	Interviews with two teachers.
April 2020 – September 2020	Write up research project.

Table 3.9 Timeline for the self – study action research

3.10 SUMMARY

“Action research embraces the idea that each researcher is informed by their own values, norms and assumptions” (Sullivan et al., 2016: 25). Self - study action research is context based and the focus is on the individual choosing an area of their practice to improve on and bring about change in. My context is I am a Team Teacher for Junior Infants and I wish to bring about change in my practice in the area of pupil oral language development and in the use of iPads with junior infant pupils. I aimed to use the iPads as a learning tool to increase opportunities for the pupils to collaborate and communicate, thus improve pupil oral language development. My research question and my values informed my planning for the action cycles. A qualitative approach to data collection was more suitable to my self – study action research as it is participants’ opinions, assumptions and attitudes that will form part of the research rather than percentages and numbers which is ;a quantitative approach. Good ethical practice was observed throughout the course of my research. Data collection and storage was in line with Maynooth University policies as well as compliance with the Data Protection Act 2018. Due to Covid 19 school closures, adaptations had to be made to the data collection as interviews could not be held face to face and were conducted on the online communication platform Zoom.

“You owe a duty to yourself as a researcher, as well as to other researchers and to the subjects of and audiences for your research, to exercise responsibility in the processes of data collection, analysis and dissemination.” (Blaxter et al., 2010: 161).

CHAPTER 4: FINDINGS AND DISCUSSION OF DATA

This chapter will explore the qualitative data gathered and analysed as part of my self-study action research. It will outline the unforeseen challenges I encountered when collecting my data. Interviews were held with two teachers (T1) and (T2). Input and advice from my critical friend and colleagues' were invaluable. Data was analysed from my teacher reflective journal and my teacher observations (TO). Pseudonyms were allocated to the pupil's names participating in the action research to ensure anonymity.

The findings are presented under three themes, which are:

- Preparation of pupils to use the iPads.
- Benefits of the iPads as a learning tool and pupil oral language development.
- Pedagogy of using the iPads and the role of the teacher and pupil.

4.1 Data analysis

My self-study action research involved junior infant pupils, carrying out collaborative tasks on the iPads and thus developing their oral language. My data set for my self-study action research project were teacher observations, my reflective journal, a focus group with children, six completed books on the book creator app from action cycle 1, teacher interviews, suggestions from colleagues and conversations with my critical friend.

Throughout my data analysis my research question: how do I facilitate the development of oral language by using the iPads as a learning tool with junior infants and my values were the central focus. In my reflective journal, I noted:

“I am finding it overwhelming, how would I analyse all this data to present my findings and make a claim to new knowledge?” (McEvoy, 2020: 59).

Cook (2009) summarised the educator applies different skills to probe current concepts to create new understanding. “It is a place where expert (practitioner) knowledge, experience, judgement, creativity and intuition are used to embrace multiple and new ways of seeing”

(Cook, 2009: 282). The written data gathered were analysed by generating colour codes, grouping these into categories and then identifying emerging themes (Braun & Clark, 2006). I identified twenty-two codes, allocated these into six categories and then grouped them into three themes. Bland (2012) framework of picking three key features were applied to analyse the drawings. The photographs were analysed using a thematic approach according to Merriman and Guerin (2006). I critically analysed the data to present my findings in a coherent manner and “communicate my ideas in a form they may be more ready to access” (Mellor, 2001: 478).

4.2 CHALLENGES

There were many challenges to collecting my data such as timetable constraints and the impact of school closure on 12th March 2020, due to Covid 19. I am a Team Teacher for Junior Infants and my timetable is very busy and divided into thirty-minute slots. It was difficult to re-arrange my timetable, due to engaging in station teaching alongside class teachers at set times in the day. I chose 9 a.m. to 9:30 a.m. as my action research time but each week the days varied, as I did not want to miss the same class teachers’ slot every week. “Research had to fit round practice as best it could” (Mellor, 2001: 466). I encountered another challenge when a child was late for school as this meant the child was late for the action research session and this interruption disrupted the flow of the lesson. Therefore, I had to start from the beginning to explain the set task that day to the pupil while monitoring and observing the other pupils in the group as they carried out their task. Action cycle 2 came to a halt on week 3 due to school closures in Mid-March. As a result of school closures, my plan to conduct a face-to-face interview with teachers was in disarray. I had to think of an alternative solution and I consulted with my critical friend who suggested hosting the interview using the online communication platform Zoom. I prepared the interview questions and conducted two interviews on the Zoom app. Cook

(1998: 103) highlighted the importance of “chatting and talking with others both about the practice and the process”.

4.3 THEMES:

4.3.1 Preparing pupils to use the iPads

At the beginning of action cycle 1 and 2, my objective was to investigate the prior experience of the junior infant pupils with using iPads. Burnett (2015) stated that as technology is increasing in popularity in our society the focus needs to be on the pupils’ experience or lack of with technology to date. The significance of identifying the pupils’ previous skills and their exposure to iPads was it would inform the planning of my action cycle sessions. I implemented two action research cycles with six different junior infant children in each action cycle. My finding in action cycle 1 was five out of six children owned an iPad. In action cycle 2, six out of six children owned an iPad. These results are even higher than studies suggested when compared nationally and internationally. In an Economic and Social Research Institute (E.S.R.I) report on *Growing up in Ireland: The Lives of Five Year Olds*, it stated that “three quarters of five year olds played on an electronic device” (Murray et al., 2019: 82). According to research, in the United Kingdom in 2014, more than a third of three to five year olds have their own tablet. A study carried out in 2020 on access to electronic devices during Covid 19 found that

“Tablets were readily available in 79% of homes regardless of socio-economic status but laptops or desktop computers were less likely in households where parents were unemployed or did not have a third-level education” (Devitt et al., 2020: 30).

By conducting this research project, I meta - reflected on my assumption that I held regarding the high use of iPads with young children.

“As technology is gathering pace in all aspects of life I was accurate with my assumption that most of the children would have access to an iPad” (McEvoy, 2020: 34).

4.3.2 Pupils' use of the iPad

As outlined by Dunn et al. (2018) pupils' liked being given a choice of app to use on the iPad. In action cycle 1, children chose a wide variety of apps for example tracing, matching, counting, phonics or maths addition games. In action cycle 2, the most popular app was Lego. "It is important to give children ownership over their own learning. Give pupils the opportunity to freely explore using the iPads before carrying out set tasks" (Critical Friend, 2020). The pupil responses to how they used their iPad at home were for watching films on YouTube and playing games.

"Some pupils said they used YouTube on their iPad at home and I wondered was this supervised or unsupervised time" (McEvoy, 2020: 33).

Conor stated, "I am banned from using my iPad." The child referred to the game as the 'feeding game' and stated his Mam did not like the game. This incident suggested that the parent was supervising the child, as the child is no longer allowed to play on his iPad. An E.S.R.I report (2019) concluded that 90% of parents supervised their child while they were engaged in screen time.

4.3.3 Skills needed to use the iPad

I engaged in teacher observation as a data collection method while the pupils were exploring and using the iPads. The majority of the pupils could swipe with ease and tap on the apps. The pupils confidently selected an app and without teacher assistance played the game. Fantozzi et al. (2017) highlights that pupils had prior experience from home of using the iPads but were learning new skills by using the camera or using new apps in the classroom. I noted that the children experienced common difficulties with some of the iPad features such as turning it on and off and were not familiar with using the camera on the iPad. "The pupils' were turning the iPad around in their hands trying to locate the on button" (TO). This finding corresponds with Selwyn (2016) that pupils need support when

using the iPads. I introduced a formal lesson on the settings of the iPads. Each pupil had their own iPad and I showed the pupils various settings on the iPads for example the home button and the camera feature.

4.3.4 Classroom management

My own classroom management strategies were explored when I was introducing the rules of how to use the iPad. This was the first time that the junior infant children were using iPads in my school.

“I was nervous today about my classroom management strategies, would the pupils be disruptive and be over-excited when using the iPads? Would the pupils follow the pre-discussed rules of using the camera on the iPad?” (McEvoy, 2020: 36).

The two main rules when taking photographs on the iPad were not to take photographs of the other children in the group or of the teacher. The pupils had to use two hands while walking around with the iPad. T2 emphasised the reason for these rules: “we have the protection cases on them; we would have to be very careful about them because they are at the end of the day, and they are expensive piece of equipment.” The pupils contributed to the rules for using the iPad and this gave them a sense of ownership and responsibility when using the iPads. Reeves et al. (2017) states to improve student participation and involvement in tasks, teachers should seek frequent contributions from students. The pupils responded effectively with their own rules of how to use the iPad. Sophie stated, “Don’t let it fall.” Lisa stated, “Don’t wobble it when taking pictures.” I adhered to our school’s internet acceptable use policy and therefore informed the pupil not to take photographs of individual people only objects. One child engaged in self – correction when he did not follow the agreed rules of using the iPad. Henry stated, “Look Conor you are in my picture – oh I may delete that now.”

4.3.5 Apps

The senior infant and first class children use literacy and numeracy apps on the iPads in my school. As Oliemat et al. (2018: 591), highlighted tablets are “potentially powerful learning tools for young children”. I had pre-researched and sourced an app that the pupils could use to create their own eBook of photographs they have taken. It is recommended to select an app that has the potential for a child to “create their own content” (Wells Rowe and Miller, 2016: 427). When choosing the app, I was mindful of the young age of the pupils. According to Lacey et al. (2014), the app should be at the correct level of ability for all pupils and the app should meet the curriculum objectives of the lesson. I enhanced my epistemological skill of lifelong learning, as it was new learning for me to incorporate the Book Creator app in my lessons. Flewitt et al. (2015) carried out a similar study where young children used the camera on the iPad to take photographs of outdoor activities and then selected the photographs to create their own story. I identified with Reeves et al.’s (2017) viewpoint to allow the pupils access to one app at a time and teachers should trial the app, however, I agree with Flewitt et al. (2015) this was very time consuming.

“I brought home the school iPads today to explore the Book Creator app as I had never used it before and it took me longer than I expected this evening to become familiar with the app” (McEvoy, 2020: 45).

4.4 BENEFITS OF USING IPADS

Many researchers (Falloon and Khoo 2014; Reeves et al. 2017; Fisher et al. 2013) described the advantages of using iPads in the classroom as their flexibility and touch screen feature. I chose the Apple air iPad as a device for my research process as the iPads are portable and have the camera as “a multimodal feature” (Neumann and Neumann 2017: 204). The camera feature on the iPad was a central role to my action research sessions. The pupils brought the iPads to the school garden and took photographs. As highlighted by Sung et al. (2016) using the iPad as a learning tool is ground - breaking and distinctive. The pupils found it initially difficult using the Book Creator but within a short space of

time, the pupils acquired the skills and were confident using the app. One of the findings of the study carried out by Young (2016) is that the pupils' use of iPads improved engagement with tasks. I would agree with this as I can compare two tasks that the pupils carried out. One task was the pupils drew from memory a picture of the school garden. Three out of six children used three or more colours and no child drew a background in their picture (see appendix 17). In a task where the pupils drew a picture of their favourite photograph, all children used three or more colours and four out of six children drew a background of sun, clouds and grass (see appendix 17). Chang and Cress (2014) highlighted there is little research in the area of how drawings can develop pupil oral language. They summarised:

“A conversation between an adult and a child about visual arts could help uncover information useful for adults to know about children in a different light, or at a higher level” (Chang and Cress, 2014: 415).

Flewitt et al. (2015) suggested there was an increased determination to concentrate and complete challenging tasks when the pupils were using the iPad.

4.4.1 Motivation

Just as Dunn and Sweeney (2018) found, my pupils had an enthusiastic reaction and were motivated to use the iPads. The pupils were engaged and looked forward to using the camera on the iPad to take photographs. Lisa commented, “I enjoyed it and I learned new things.” I observed that the pupils were proud of the photographs they had taken and were delighted to show them to their partner. Flutter (2007) stated pupils enjoyed working independently on the iPad and felt a sense of achievement of their work.

“The children squealed with the delight as they were taking photographs and were proud to show their photographs to the group” (McEvoy, 2020: 45).

4.4.2 Pupil oral language development

I teach in DEIS School and from my teacher observations I noted that pupil oral language was a target area for improvement. Molloy et al. (2016) provided research in the area of educational disadvantaged and concluded that the formal language and routines of school were a different world from their home environment. In my action cycle, I strove to use the iPad as a tool to promote oral language development. I achieved this by setting teacher designed tasks on the iPads and the pupils' engaged in conversations when completing the tasks. Donohue (2015) highlights when the teacher is mindful of the children's background, the teacher will create a safe learning environment with everyone working collaboratively. I created a safe space for the pupils to share their opinions and I offered praise and encouragement when they were speaking.

My research was guided by the *Primary Language Curriculum* (2015) rationale, which was to aid children to communicate successfully with peers and adults and to fully engage in the world around them. I pre – taught the vocabulary associated with a garden before the pupils visited the school garden to take photographs. When the pupils were describing their favourite photograph to the other children, the phrase they were using was for example: Sophie stated, “I took this and that.” The photographs were used as a stimulus to model and scaffold pupil oral language developments, see figure 4.2.

“I modelled the oral language sentence ‘My favourite picture was....’ If the child only answered fairy....I encouraged the child to say the sentence....My favourite picture was a fairy” (McEvoy, 2020: 44).



Figure 4.2 Sophie's photograph of a fairy.

Even with my scaffolding of the pupil's oral language, they often still did not name the objects in their photographs. The photographs were used as a resource for teacher led questions, which the pupils often responded in one - worded answers. Rasku et al. (2012) emphasised that building on pupils' oral language was a common and difficult challenge for teachers.

4.5 PEDAGOGY

My experience disagrees with Vaughan and Beers (2017) who stated they had little guidance on how to use technology in the classroom. I felt I had many DES publications on the use of digital technologies in the classroom to consult with. One such document was '*Digital Strategies for schools 2015 -2020 Teaching, Learning and Assessment*' as this informed my planning of teaching methodologies for using the iPads with the pupils. This

document was published to give guidance to teachers on how to effectively use ICT in the classroom. My focus of my action research was to integrate the development of pupils' oral language while using the digital technology resource the iPad. My planning and implementation of my action cycles using the iPads as a learning device can be linked to the following pedagogy framework which revolved around three concepts:

“what pupils engage in on and off screen, how the pupils interact with each other and the teacher and what previous experiences the pupils have of using technology”
(Burnett, 2015: 198).

I provided opportunity for the pupils to play the role as teacher. I showed two pupils how to turn on the iPad and these pupils would show the other children. Flewitt et al. (2015) also discussed using the iPads as a teaching resource to aid pupil collaboration. My findings on the pupils' desire and willingness to share an iPad were: three out of six children in action cycle 1 stated they would prefer to share an iPad with a friend rather than use it on their own. Two out of the six children in action cycle 2 stated they would prefer sharing the iPad with a friend. Another example of a teacher designed task in the action research session was the pupils had to explain to the child beside them, how to play an app and then give a turn to their partner. When the pupils were engaged in pair work like this, I would state to the pupils when they had one minute left before it was time to swap and their partner's turn to use the iPad. Another idea suggested by (T2) was 'to use an egg timer' as this would be a visual resource to show the pupils' the specific amount of time a pupil had left on the iPad before it was their partners turn. By utilising these strategies, it would counteract the concern that sharing of an iPad 'could lead to some monopolisation' (Clarke and Abbot, 2016: 1053).

4.5.1 SAMR and TPACK

I evaluated my use of technology in the action research cycles as level two of the SAMR model which is Augmentation. The pupils learned new ways of using technology to create

their own eBook. I applied the TPACK and SAMR model to the content of my action research cycles. I utilised the TPACK model when I identified what content knowledge I needed to implement the Book Creator app with the pupils. I chose the Apple iPad Air as a learning device as this was the digital technology tool available to me. I used a constructivist pedagogy theory Vygotsky to deliver the content of the lesson to the pupils.

4.5.2 Constructivist theory

The pupils often worked in pairs and I provided breaks at the end of each task to encourage discussion time. One such task illustrated pupil collaboration and discussion when two children chose a minion photograph from their iPad as their favourite photograph and created their own drawing of it. I observed and took field notes as the children were drawing. The pupils chatted and discussed what colours they needed for the minion. An unexpected outcome was that one pupil engaged in free writing skills on his drawing. Henry sounded out and attempted to write the word minion using the letters 'miog' on his page, see figure 4.3.



Figure 4.3 Henry's drawing of a minion.

Conor asked, “How did you write that?”. Henry helped by calling out the letters and Conor wrote the letters on his drawing, see figure 4.4. When the more competent pupil was offering support and guidance to the less able peer, this could be evidence of learning being scaffolded as suggested by Vygotsky’s zone of proximal development theory.



Figure 4.4 Conor’s drawing of a minion.

4.5.3 Curriculum Integration

When planning my action research cycle, the main subject I was focusing on was English and in particular oral language. I integrated digital technologies with the English curriculum with the use of the iPad to develop and foster digital skills and oral language skills. I discovered that my action research cycle could be linked to integration in many curriculum subjects. For example, I could integrate it with Social, Environmental and Scientific Education (S.E.S.E.) (take photographs on a nature walk of the school garden), numeracy (count how many photographs they took) and Art (draw a picture of their favourite photograph).

“A successful task that the pupils engaged in was that they created a picture of their favourite photograph on the iPad. I had not anticipated this finding that using the iPads to facilitate pupil oral language could be integrated effectively with a Visual Arts lesson”(McEvoy, 2020: 60).

This was further emphasised by data from interview 2 the teacher explained her view of using the iPad for curriculum integration. “I don't think there's any limits, I think, no matter what subject that you are focusing on, you can use an iPad, you can use it to extend knowledge, and you can use it to record”(T2).

The setting of the school garden as the learning environment has strong links with Froebel’s philosophy of the importance of outdoor play and exploration. Tovey (2013: 13) describes a Froebelian garden as “offering rich potential for active learning in nature.” It is an under -used resource in our school, as only one out of the six children in action cycle 1 had visited the school garden previously. The children were agents of their own learning and I relished in the opportunity to bring the children outdoors, see Figure 4.5.

“I can now see the school garden as a resource in the pupil’s immediate environment that would enhance teaching and learning” (McEvoy, 2020: 61).



Figure 4.5 Maria’s photograph of the school garden.

In this context, the value of using the school garden as a resource was it provided strong curriculum integration links and the pupils could free –explore and investigate their immediate outdoor school environment. “Froebel envisaged that the outdoor environment could provide enriching learning experiences through heightened self-discovery and awareness” (Bruce et al. 2018: 43).

4.5.4 Role of pupil and teacher

The voice of the child played a pivotal role in my research. Flutter (2007) emphasised the value of the voice of the pupil and that conversations between pupils and adults have an important role to play (Chang and Cress, 2014). It is about listening to what the pupils have to say about their learning and their environment and when this occurs effectively, it may bring about a change in the teacher’s own practice. When the pupils were using the iPads, I felt my role as the teacher evolved. The pupils were motivated and enthusiastic to engage in tasks on the iPad and thus the teacher became more of a facilitator as there was little teacher talk and an increase in pupil conversations. I was guiding and supervising the pupils as they were working independently with little assistance required.

“I saw my role today as more of supervision as the pupils could use the camera independently and were highly motivated and stayed on task using the iPads” (McEvoy, 2020: 45).

This concept is summarised by the P.D.S.T. (2014) as the balance of “learner control” shifts from teacher to student. The pupils were proud to show and describe the eBook of photographs they made to the group. Pollock et al.’s (2012) findings resonated with my ontological values of respect and equality when he highlighted:

“It is easy to see how this feeling of being respected and valued can increase a student’s confidence, investment in the classroom, and motivation to succeed” (Pollock et al., 2012: 5).

4.5.4 Teachers' attitudes to using the iPads

Colleagues' perceptions are a lens of Brookfield's (2017) critical reflection framework. Using the two interviews, my colleagues' suggestions and conversations with my critical friend, I examined on a small - scale teacher attitude to using technology in the classroom and compared these to my own views. (T2) recounted pupils' had limited access to iPads in our school and the iPads were often used as a "reward for good behaviour". Donohue (2015) highlights that teachers need to broaden their views on the benefits of using the iPads in the classroom. "Technology needs to stop being thought of as the reward system or just a gaming device and needs to start being tools we can use to relate and communicate" (Donohue, 2015: 202). However, (T1) disagreed and stated the iPads were a barrier to pupils' communication skills. "I feel the iPads are quite anti-social you give an iPad to a small child and all they do is zone in on the iPad they don't lift their head they are totally immersed" (T1). Burnett (2015) highlighted that teachers can have negative attitude towards the introduction of digital technology in the classroom. Before this action research, I was not certain about my own views on the benefits of using iPads in the classroom to foster pupil learning and especially enquiry based approach to learning. Now, I can list an increase in pupil oral language, collaboration and curriculum integration as ways that the iPads can support positive learning experiences for pupils.

"Research is now demonstrating that the technology is available and what remains is to create effective content and to foster a positive disposition in teachers to develop new pedagogical practices. (Young, 2016: 185).

4.6 TEACHER REFLECTION

Sullivan et al., (2016) stated that after time has lapsed, a memory of an event may not be true and advised to keep a reflective journal to overcome this. This would lead to interpretation that is more accurate and examining of one's values. I kept a reflective journal throughout this research process to enable me to become more a critically reflective practitioner. As outlined by McNiff (2014) reflection encourages us to focus on one's

values and to evaluate how and why one teaches. Brookfield's (2017) four lenses of critical reflection helped me to provide a framework and structure to my reflections. One of the lens is to examine personal experience. As a class teacher for the past 12 years, it saddens me that while I say I value the voice of the child. I did not always provide opportunities for the pupils to discuss their views or give the time necessary to be a good listener when the pupils were speaking. On reflection, the reason I am not living to my true values and experiencing myself as a 'living contradiction' Whitehead (1989) and that time plays a huge factor in how I converse and build relationships with the children. The daily timetable is so busy and hectic that I have become accustomed to asking the pupils to wait until snack time if they have news to tell me, as we need to move onto the next subject. Dadds (2001 cited in Sullivan et al., 2016: 13) refers to this concept as the "hurry along curriculum".

"I feel curriculum overload and timetable pressure has lessened the time for pupil creativity and pupil discussion" (McEvoy, 2019: 21).

4.6.1 Interventions for action cycle 2

Action cycle 2 data collection in school ceased mid cycle due to Covid 19 and I did not implement interventions. A challenge I encountered in action cycle 1, were that the pupils were not listening when their partner was speaking, as they were engrossed in their own iPad. "Sophie has her head down and is still playing the game on her iPad while Lisa is speaking to her and showing her a photograph" (TO). Critical friend (2020) suggested a teaching strategy: "Use a non - verbal cue such as when teacher put her hands on top of her head, the pupils are to stop playing the iPad and put their hands on their head and listen." In action cycle 2, my objective would have been to explicitly teach the pupils what a good listener looks like and integrate with Drama and role play the body language of a good listener and the body language of a poor listener. By utilising this strategy, it would link

with the aim of the *Primary Language Curriculum*. “Building and sharing meaning in communicative relationships requires that children engage both as listeners and speakers” (N.C.C.A, 2015: 32). I disagree with Beetham and Sharpe (2007) if learners are to engage successfully in digital society they need to be given the opportunity to collaborate and communicate. I think opportunity alone will not increase pupil dialogue or the pupils working together, these skills need to be specifically taught to the pupils. In action cycle 2, I had planned to use the story cube app on the iPad as a warm up oral language lesson introduction.

4.6.2 Path for future engagement

The children were excellent at taking photographs on the iPad and were delighted with the freedom to take photographs of objects in the garden. In action cycle 3, I aim to continue to build on pupil enthusiasm and engagement for learning by integrating the use of the iPads with their reading literacy skills. For action cycle 3, my planning would involve the pupils taking photographs on the iPad of objects in their classroom. My objective in action cycle 3 will be for the pupils to use the book creator app to create their own reading book. The pupils would add text to the photographs and record their own voice.

In action cycle 1 and 2, my choice of data collection methods was satisfactory as I felt I gathered the relevant data that I needed on my practice. In action cycle 3, I will include interviews with individual pupils as a data collection method. This would provide opportunity for the pupils to express their opinions as junior infant children have varied oral language skills and often in a group setting it is the opinions of “the more articulate, confident learners whose views are heard” (Flutter, 2007: 349). My self – study action research resonates with Dunn et al.’s (2018) viewpoint that the voice of the central to research that involves pupils as participants. In my context, the pupils’ play and active role in my research and their feedback is evident in my data collection methods. In the next

academic year, for the research participants in action cycle 1, I plan to distribute a printed copy of their completed eBook and summarise my findings for their parents. I will disseminate my findings to the staff in my school.

4.7 SUMMARY

Pupil oral language and the use of iPads in my school were a target area of improvement in my practice. After engaging in action cycle 1 and most of action cycle 2, I can sum up the most important learning outcome is how teachers use the iPads and engage in various teaching methods and teacher designed tasks around the iPads that fosters learning in pupils. The pupils communicated and collaborated while using the iPads and thus developed their oral language skills. The role of the teacher was to supervise and offer guidance while the pupils worked independently and creatively. There are support documents available from the DES to effectively guide teachers on how to integrate digital technologies effectively in the classroom.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

The rationale for this self –study action research relates to my context, as I am teacher in a DEIS School. I wanted to implement new and creative ideas to foster and build on pupils’ oral language skills. I also wanted to up-skill in the area of using iPads in my practice and to foster the digital skills of the junior infant pupils. The aim of this research was to provide opportunities for pupil oral language development while the junior infant pupils were using the iPads. “The use of technology in education is largely accepted to be an integral and expected part of the teaching and learning experience in this digital age” (Tunjera and Chigona, 2020: 126).

5.1. Significance of my research at a personal level

Self- action research is summarised as “taking charge of your own practice, investigating it thoroughly and taking action toward improvement can generate a sense of motivation and positivity that is highly empowering” (Glenn et al. 2016: 32). I would recommend all teachers to engage in a Masters in Education (Research in Practice) course as it provided the time for me to pause and reflect on who I am as a teacher and what values are important to me. By engaging in this self – study action research project, it inspired me to introduce new initiatives and improve areas of my practice. I have personally gained from this Masters in Education by taking the time to clarify what my values are and how at times these are not evident in my daily teaching. My reflective journal and Brookfield’s (2017) personal experience lens were utilised to analyse why I was not living to my values and was experiencing myself as a ‘living contradiction’ (Whitehead, 1989).

“First before teachers can reflect on their beliefs, they must somehow bring them to a conscious level, and they must understand the connections between their beliefs and their actions” (Haymore – Sandholz, 1997: 48).

The tasks that I set the junior infants did not encourage creativity or collaboration, due to curriculum overload. Timetable constraints were a factor in how I built relationships and

communicated with the pupils. In my everyday practice, my values are being denied when I witness inequality and social injustice against the children in my school because of their background. I did not make the time to build meaningful relationships with the children because the school day is so busy. Therefore, I am not living to my values, as I am not meeting the needs of the pupils to enhance their oral language development. When a child's voice is silenced or not listened to or incorporated into the classroom, my values of respect and equality to the spoken word are denied. If I am prevented from availing of opportunities to acquire new knowledge and skills, this becomes a barrier to my value of life-long learning and denies the growth of my professional development as a teacher. I can connect my ontological values of respect, equality, creativity, collaboration and my epistemological value of lifelong learning as the driving force behind the planning of my action research cycles. I provided learning opportunities for the pupils as they collaborated and communicated while engaged in tasks using the iPads. The teacher designed tasks offered a platform for scaffolding pupil oral language development. By using the school garden as a setting for my lessons, it complemented Froebel's philosophy of the use of the outdoor environment and my value of creativity. I will use the school garden for future curriculum lessons to enhance curriculum integration of subjects in the classroom. When I engaged in reflection, I discovered I held the ontological value of integrity throughout the research process. The value integrity is one of the core values of the teaching council along with care, respect and trust (Teaching Council, 2016). I ensured that all data was accurately presented and true. I have outlined the challenges and successes I encountered did not present the findings as a "victory narrative" (Sullivan et al., 2016: 69). There was trust from the parents and class teacher that I would follow Maynooth University ethical guidelines and child protection guidelines to avoid any undue stress to the pupils. The value integrity was important in my communication and commitment when working with others. There was triangulation of data as suggestions and opinions from my

critical friend, colleagues' and my supervisor were included in my research. "Being collegiate and supportive is key to action research as is the process of disrupting accepted assumptions and uncritical thinking, and engaging in critical dialogue" (Glenn et al., 2016: 32).

5.2 SIGNIFICANCE OF MY RESEARCH FOR MY PROFESSIONAL COLLEAGUES

A summary of my findings and my recommendations are presented under the three main themes I explored which were preparation of pupils to use the iPads, benefits of the iPads and oral language, pedagogy and the role of the teacher. The N.C.C.A. has published a *Draft Primary Curriculum Framework for Consultation* and this document outlines the reason for reviewing the 1999 Primary Curriculum and "sets out the proposed purpose, structure and content of the next curriculum for primary schools" (NCCA, 2020: 4). This curriculum is currently at the consultation stage with all stakeholders with the vision of the final document being published and presented for approval in 2024 to the Minister of Education. The focus of my self – study action research was the junior infant pupils communicating and collaborating on tasks using the iPads as a learning tool and this would correspond with the proposed curriculum area Maths, Science and Technology in the Draft Primary Curriculum. One of the key competencies for pupils is "being a digital learner fosters children's ability to collaborate and thrive in a world increasingly immersed in technology" (NCCA, 2020: 8). An idea for a future class project under the proposed curriculum area Maths, Science and technology will be where the pupils would have the option of using iPads or a digital camera to take photographs around the school and collaborate to identify shape and pattern of objects.

"As the children develop this competency, their confidence in using a range of digital technology to harness their imagination and expand their creative thinking and creative expression increases" (NCCA, 2020: 8).

5.2.1 Preparation of pupils to use the iPads.

After engaging in the self-study action research project, I have identified a gap in the teaching in my school, as we are not meeting the digital needs of the junior infant pupils. The junior infant participants in my action research project had prior experience of using iPads. The pupils could swipe confidently and liked being given a choice of app to explore. It was new learning for the pupils using the camera on the iPad. However, the junior infant pupils were never given the opportunity to use the school iPads due to the low number of iPads and timetable constraints as senior infants and first class pupils used the iPads during station teaching. My recommendations for teachers who want to take the initiative of using iPads with their pupils are to first consult their schools Internet Acceptable Use Policy as there will be guidelines on how to use digital technologies safely in the classroom. Teachers need to enquire if the school has a Digital Learning Plan as this sets out the vision for the school of how digital technologies will be integrated in the curriculum and may provide a list of ICT resources available. It can be daunting for teachers choosing suitable apps on the iPads to meet the learning objectives of the lesson. The advice from my findings is to choose app at the correct level of the pupils (Lacey et al., 2014) and to choose a content creating app (Wells Rowe and Miller, 2016). I engaged this year in continuous professional development (cpd) summer course for teachers 'iPads in Primary Education' that provided a list of literacy and numeracy apps suitable for junior infants to second class. The PDST has a list of literacy, numeracy and S.E.S.E. apps for second to sixth classes. There is also a wide variety of videos on the PDST website demonstrating how iPads and tablets are used to enhance curriculum learning. I found the video on creating eBooks in the classroom very useful and it explains the benefits of the Book Creator app.

5.2.2 Benefits of the iPads and pupil oral language development

I chose the Apple iPad air as a learning tool for the junior infants. Five years ago, my school had purchased 12 Apple iPads Air, from the proceeds of a fundraiser. The benefit of using the iPads are the quick start up, they are portable and have the camera as the feature. Another benefit of using the iPads with the pupils is their increased motivation and engagement in tasks (Dunn and Sweeney, 2018). I found that the pupils enjoyed the active learning and freedom of taking their own photographs of the school garden. My findings also show that opportunities for oral language development were provided because using the iPads encouraged discussion, collaboration, presenting and sharing of information. Dunn et al. (2018) suggested that research that involves children should have the child's voice as a central role. The voice of the child played a vital role in my research and was in keeping with my ontological values of respect and equality for the pupil voice. The pupils collaborated and communicated in pairs while engaging in teacher-designed tasks. My research on pupil oral language development fits in with the *Primary Language Curriculum* (2015) with the aim to "enable children to fully engage with and enjoy a wide range of relevant and meaningful linguistic and communicative experiences with peers and adults" (NCCA, 2015 :26). The findings of my research will be of particular interest to teachers in a DEIS school who are looking for new ideas on how to foster and develop pupil oral language. The photographs on the iPad were used as a stimulus to model and scaffold pupil oral language development. I modelled correct sentence structure and offered praise and encouragement for pupils to extend their sentences when they were speaking. This directly corresponds to the strand oral language: "Learning outcomes focuses on sentence structure, grammar and acquisition of oral vocabulary" (NCCA, 2015: 33).

Two unexpected outcomes of the research project were that the pupils engaged in free writing skills and that curriculum integration was evident in my action research cycles. The

curriculum areas I focused on was oral language development integrated with the use of ICT specifically the electronic device the iPad. There is a link to the subject S.E.S.E. when the setting for the lesson was the school garden. Froebel's philosophy was the importance of the school garden for children and the learning opportunities it provided. I identified the school garden as an under –used resource and the pupils were not familiar with it as only one pupil had previously visited it. My action research was integrated with Art when the pupils were creating their own picture of their favourite photograph on the iPad.

5.2.3 Pedagogy and the role of the teacher

My self- study action research can refer to the NCCA (2007) *Revised ICT framework* and the *Digital Strategy for Schools 2015 – 2020, Teaching, Learning and Assessment*. These are some of the documents published to provide guidance and direction for teachers on how to integrate the use of ICT into curriculum subjects. The NCCA (2007) Revised ICT framework explains the importance of ICT “teaching and learning when used purposefully and with appropriate resources” (NCCA, 2007: 5) This framework sets out objectives, learning outcomes and learning opportunities from the younger years in primary school through to junior cert in secondary school. The rationale of my self – study action research can correspond to the objective of the NCCA (2007) ICT revised, which was “exploring the potential of ICT to create, communicate and collaborate to organise and produce information” (NCCA, 2007: 9). My research question was how to improve my practice of facilitating pupil oral language development when the pupils are using the iPads. My findings were that junior infant pupils had prior experience of using iPads and used the iPads at home for YouTube or playing games. The pupils could swipe with ease but had little experience of using the camera on the iPads. The *Digital Strategy for Schools, teaching, learning and assessment* ICT vision was to:

“realise the potential of digital technologies to enhance teaching, learning and assessment so that Ireland’s young people become engaged thinkers, active learners, knowledge constructors and global citizens to participate fully in society and the economy. (DES, 2015: 12).

The teacher’s role evolved and became more of a facilitator to encourage, guide and support individual pupil learning at their own pace. As outlined that teachers “taking a more facilitative role, providing student – centred guidance and feedback” (DES, 2015: 13). This concept is mentioned by the P.D.S.T. (2014) as the balance of control changes from “teacher to student”.

Digital technologies are evolving at a fast pace and so teachers require continuous practical support such as the listed

“whole-school approaches, subject-department approaches, in-school professional learning sessions, out-of-school sessions, and online and blended learning workshops or courses” (DES, 2015: 321).

The Government of Ireland has invested significantly in digital technologies in the classroom but there is still improvement needed in this area. As a study published in (2020), if digital technologies had been used in 34% of primary lessons observed, the pupils learning would have been enhanced. Teachers need practical support and guidance as teachers can be reluctant and afraid of using digital technologies in their classrooms and are unsure what to do when using the devices does not go to plan.

“resiliency can be developed in teachers so that the unexpected moments that occur when using technology in a classroom is not perceived to be as disruptive to the classroom as typical teachers fear” (Crookston Curran, 2015: 129).

5.3 SIGNIFICANCE OF MY RESEARCH FOR THE WIDER COMMUNITY

Covid 19 was an outside force and challenge to my data collection, which I had no control over. Covid 19 is a reminder that we should be providing opportunities for pupils’ digital skills from a young age and preparing them for the world around them. This would enable “identities as effective and competent learners are being moulded by the conventions of the social and cultural worlds in which they live” (Flewitt et al., 2015: 291). Digital learning

enhances the communication between teacher and pupil when it is used effectively in the classroom. As a teacher, I have to respond to change and stay motivated with new ideas for my class. This self –study action research will add to the knowledge in the area of using iPads in a junior infant classroom in an Irish school setting. There is little research available in this area to date. This research will enhance future practice in how to develop pupil oral language while fostering pupils’ digital skills.

5.4 DISSEMINATION OF FINDINGS AND PATH FOR FUTURE ENGAGEMENT

I will disseminate my findings in a staff development training workshop. I continued to demonstrate my epistemological value of lifelong learning by choosing a continuous professional development course (cpd) relevant to my thesis. My course this summer was on ‘*iPads in Primary Education - Exploring Pedagogy, Operation and Application.*’ By teachers engaging in life - long learning this will improve the quality of learning in the classroom for the pupils (Stoll and Fink, 1996). In spring 2021, I will carry out action cycle 1 and 2 again and implement the interventions from action cycle 1. Then I can compare and analyse the findings from action cycle 1 and cycle 2 to determine which interventions were a success. Following that, I will engage in action cycle 3, to enable the pupils to take photographs of objects in the classroom and create their own reading book using the multimodal features adding text and voice recording to their eBook”. Hutchinson and Beschoner (2015) carried out a similar study using iPads to create multimodal texts. I will also utilise the SAMR model and move from a lower order use of technology to a higher order use. My aim is that my action cycle 3 will be evaluated as level 3 of the SAMR model which is Modification as when the pupils create their eBook, add text and voice recording, the pupils will use Google Drive to share their eBook with myself. At the end of action cycle 3, I will change my data collection methods of focus groups with the pupils to interviews. I will conduct individual interview with pupils as this will give pupils more

opportunity to express their opinions and thoughts as in the focus group often it is the views of the most vocal child is heard.

5.5 CLAIM TO NEW KNOWLEDGE

Reflection brings about understanding which can lead to an insight into one's practice and which can bring about new knowledge and wisdom. Lifelong learning is an important value for me to have, as it will create new opportunities and experiences on my educational journey.

“Critical reflection involves deliberately and purposefully looking at issues and incidents from as many angles as possible , analysing them for their effects on us and on others, and then using our critical faculties to synthesise, evaluate and make informed decisions about them” (Sullivan et al., 2016: 15).

When I began this self- study action research in September 2019, I could not have foreseen that all pupils would be remote learning in their homes using an electronic device, due to a global pandemic Covid 19. The new knowledge that I learned from engaging in this self – study action research was that the learning outcome of the pupils was influenced by the expertise, organisation and confidence of myself to integrate digital technology with the junior infant pupils. From my experience, I believe that iPads are a valuable learning tool and that teachers need more hands on experience to put the theory into practice. However, it is how the teacher structures the lesson and chooses a suitable app that determines the learning outcome for the pupils, as the iPads are merely a resource. This is supported by Fantozzi et al. (2017) that the iPads are only a learning tool that should be used purposefully during lessons and not only used due to pressure that the school had spent a lot money on the acquiring iPads. It is about encouraging children to have an enquiring mind and take ownership over their learning. It is about fostering critical thinking skills and active learning and building on previous knowledge to learn new skills.

“Therefore the 21st century requires that students acquire the 4Cs (communication, collaboration, critical thinking and creativity) on how to engage with the information and not just receive it” (Tunjera and Chigona, 2020: 126).

In my research practice, junior infant pupils engaged effectively with enquiry -based learning on the iPads and had the necessary digital skills needed to use the iPads. Once I explained the tasks on the iPads to the pupils, they could work independently. There was less teacher talk and increase in pupil conversations. “Children’s immersion in digital communication occurs at a critical period in their lives when their emerging literacy skills (speaking, listening, reading and writing)” (Flewitt et al., 2015: 291). The pupils’ active learning experiences with the iPads encouraged discussion and conversations at home. This would reinforce and consolidate the link between home and school environment by creating a learning community with all stakeholders the teachers, the pupils and their parents. “We found that open apps can support playful storytelling and communicate stories with families at home” (Fantozzi, 2017: 688). The significance of my vision of using iPads with junior infant pupils is especially relevant today because digital technologies will be used in the pupils’ everyday life and we are building on future digital skills they will need to become active members in their community. There is also a high possibility due to the increasing threat of Covid 19 that schools will have to adopt a blended approach and that pupils will be learning part time or full time at home using a digital device.

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APPENDICES

Appendix 1: Letter to the school board of management



Maynooth University Froebel Department of
Primary and Early Childhood Education
Roinn Froebel Don Bhun- agusLuath- Oideachas
OllscoilMháNuad.
10 -11 -19.

Dear Chairperson,

I am a student on the Master of Education (Research in Practice) programme at Maynooth University. I am doing a self – study action research project as part of my Masters. The focus of my research is to increase pupil oral language and collaboration when the junior infant pupils are using enquiry based apps on the iPad.

In order to do this, I intend to carry out research by the pupils engaging in tasks on the iPad and I will provide frequent breaks throughout the task to encourage discussion and collaboration. I will consult the school's Acceptable Use Policy as the children will be taking photographs on the iPad. I will seek written parental permission for their child to participate in the research. It will be junior infant children involved in the research. I will explain in age appropriate language the purpose of the research to the children and that they have the right to withdraw at any stage. I will seek permission from my colleagues to include their opinions as they may provide valuable contributions to my research.

The data will be collected using self – notes of observations, teacher designed tasks, pupil's work samples and photographs. I will facilitate a focus group with the pupils. I will interview a class teacher and a parent. Daily records will be kept in my reflective journal. I guarantee that I will observe good ethical conduct throughout my research. I will adhere strictly to Maynooth and Froebel University ethical guidelines, Data Protection Act 2018, child protection guidelines and my own school's policies.

I would be grateful if you would give permission for this research to take place by way of signed approval below.

Yours sincerely,

Appendix 2: Parents' information letter

**Maynooth University Froebel Department of
Primary and Early Childhood
Education**



**Roinn Froebel Don Bhun- agusLuath- Oideachas
OllscoilMháNuad.
06-01-2020.**

Information Sheet

Parents and Guardians

Who is this information sheet for?

This information sheet is for parents and guardians.

What is this Action Research Project about?

My name is Helen McEvoy. I am the Team Teacher for Junior Infants and I teach English and Maths in small groups in your child's classroom alongside their class teacher.

I am a student on the Master of Education (Research in Practice) programme at Maynooth University. I am doing a self – study action research project as part of my Masters. The focus of my research is to increase pupil communication and collaboration when they are using apps on the iPad. Collaboration means to encourage children to work together. I will be producing a thesis on this topic.

What are you being asked to do?

You are being asked for your written consent to permit me to undertake this study that may involve your child working with five other junior infant children from their class. All returned signed permission slips will be placed in a hat and six children's names will be drawn from the hat on Friday 10th of January. I will notify you by letter if your child is or is not one of the children that will be taking part in the research.

When?

Beginning the week of 13th January, the children will be withdrawn from the class for 20 to 30 minutes in a small group to my learning support classroom. This will occur during your child's playtime twice a week for six weeks.

What is the research question?

- How do I improve my practice of encouraging conversation amongst the pupils while they are using the iPads?

What sorts of methods will be used?

- Children will be taking photographs on the iPad eg. objects in the school garden and then using the app Book Creator on the iPad, children will create their own story. Note: (Children will not have access to the internet while using the iPads.)
- Children will give an account of what they are doing.
- I will observe the children while they are carrying out tasks on the iPad. I will write the observations in my own reflective journal.
- In one of the sessions I will organise a focus group. This means the children will be asked about the task they carried out and what they liked about it. I will ask another learning support teacher to take notes during the focus group session.

Who else will be involved?

The study will be carried out by myself as part of the Master of Education course in the Froebel Department of Primary and Early Childhood Education. A learning support teacher will take notes during the focus group session. The thesis will be submitted for assessment to the module leader and will be examined by the Department staff. The external examiners will also access the final thesis.

In all cases the data that is collected will be treated with the utmost confidentiality and childrens' names will not be used in the analysis. The data captured will only be used for the purpose of the research as part of the Master of Education in the Froebel Department, Maynooth University and will be destroyed in accordance with University guidelines. The final thesis may be used for educational purposes.

Appendix 3: Parents' permission letter



**Maynooth University Froebel Department of
Primary and Early Childhood
Education**

**Roinn Froebel Don Bhun- agus Luath- Oideachas
Ollscoil Mhá Nuad**

PARENTAL CONSENT FORM

I have read the information provided in the attached letter and all of my questions have been answered. I voluntarily agree to the participation of my child in this study.

Parents' of the children taking part in the research project will receive a copy of this consent form.

Please return to your child's class teacher before Friday 10th of January 2020.

Parent / Guardian Signature _____

Parent / Guardian Signature _____

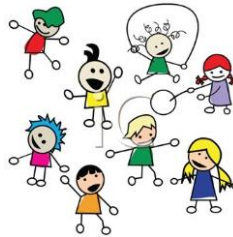
Date: _____

Name of Child _____

Child's signature: _____

Date: _____

Appendix 4: Child's letter of consent



Child's name

I am trying to find out how to encourage children to talk about what they are doing on the iPad, so we can learn from each other. I will ask you to use an app on the iPad and there will be breaks so we can chat about what you are doing on the iPad.

Would you be ok with that? Pick a box

 Yes **No**

I have asked your Mum or Dad or Guardian to talk to you about this. If you have any questions I would be happy to answer them. If you are happy with that could you sign the form that I have sent home?

If you change your mind after we start, that is ok too.

Child's name: _____

Date: _____

Appendix 5: Letter for interviewee



Maynooth University Froebel Department of
Primary and Early Childhood Education

Roinn Froebel Don Bhun- agusLuath- Oideachas
OllscoilMháNuad.

24-03-20.

Dear Interviewee,

I am a student on the Master of Education Research in Practice programme at Maynooth University. I am doing a self – study action research project as part of my Masters. The focus of my research is to increase pupil oral language and collaboration when they are using enquiry based apps on the iPad.

In order to do this, I intend to carry out research by the pupils engaging in tasks on the iPad and I will provide frequent breaks throughout the task to encourage discussion and collaboration.

I guarantee that I will observe good ethical conduct throughout my research. I will adhere strictly to Maynooth and Froebel University ethical guidelines, Data Protection Act 2018, child protection guidelines and my own school's policies.

I would be grateful if you would give permission to take part in an interview as part of the research.

Yours sincerely,

Appendix 6: Action Cycle 1: January 13th – February 28th 2020

Week 1	<ul style="list-style-type: none"> • Discussion on the children’s experience of using iPads. • Free Play with the iPads: children can choose which app they would like to use for 5 minutes. • Teacher Observation as the children were carrying out the task. Reflection journal was kept daily after every session.
Week 2	<ul style="list-style-type: none"> • Demonstrate to the children how to take photographs on the iPad. • The children walked around the room and picked 4 objects to photograph. • The children showed and discussed each picture. I will prepare 4 lower and 4 higher order questions to ask the children as they are completing the teacher designed task.
Week 3	<ul style="list-style-type: none"> • Introduce children to the app Book Creator. • The children used their photographs from the previous day to make their own eBook. • I will provide frequent breaks to observe the children to encourage discussion on the task.
Week 4	<ul style="list-style-type: none"> • The children will continue to work on the Book Creator app, completing their story.
Week 5	<ul style="list-style-type: none"> • The children will present their story to the group. • The children will orally present to the group the eBook they made on the iPad.
Week 6	<ul style="list-style-type: none"> • I will host a focus group with the children.

Note: Action Cycle 2: 2nd March – 3rd April 2020. Repeat task for Action Cycle 2 with six different children from the same class

Repeat task for Action Cycle 2 with six different children from the same class.

Appendix 7: Questions for interview

Question 1: Have you more or less than 10 years teaching experience?

Question 2: How do you incorporate ICT in to your teaching?

Question 3 How often do the pupils use iPads in your classroom?

Question 4: Tell me about your experience as a class teacher of facilitating the use of iPads in the classroom?

Question 5: In your opinion, What are the educational advantages for pupils of using the iPads in the classroom?

Question 6: In your opinion, What are the educational disadvantages for pupils of using the iPads in the classroom?

Question 7: Do you think using by pupil's using the iPads it could enhance their oral language development?

Question 8: How could we use the iPads to promote pupil oral language development and pupil collaboration?

Question 9: What school initiatives could we implement to increase the use of the school iPads?

Question 10: Thank you for participating today, is there anything else you would like to add?

Appendix 8: Interview 1 Date: 15/04/20

Today we are talking about the iPads

Researcher: Question 1: Have you more or less than 10 years teaching experience?

T1: I have more than 10 years

Researcher: Question 2: How do you incorporate ICT in to your teaching?

T1: In my classroom I have a laptop and a whiteboard and we also have iPads that are shared around the school.

Researcher: Question 3 How often do the pupils use iPads in your classroom?

T1: I would have got 6 ipads for an hour once a week.

Question 4: Tell me about your experience as a class teacher of facilitating the use of iPads in the classroom?

T1: I find it hard enough to facilitate the use of them as in our school. We only have 6 available to mainstream classes and they are obviously far more than that in the classroom. We can only give them to a group at a time and you hope that they can work independently on them but they cant always work independently. Also you don't want them to miss what you doing in the classroom. So you have to be conscience of what you are teaching at the time they are on the iPads?

Researcher: Question 5: In your opinion, What are the educational advantages for pupils of using the iPads in the classroom?

T1: I think the iPads can be useful the children can take photographs , can do videos , these can be shown to make stories and show their work that type of thing. You can use them to zone on in particular skills maybe in Maths or in English letter formation if there is a particular strand using in maths to zone in on they can use it for that. Hopefully, ideally they would work independently and quietly on them and they enjoy them they definitely enjoy them.

Question 6: In your opinion, you were saying the difficulty we only have 6 ipads is there any other educational disadvantages for pupils of using the iPads in the classroom?

T1: I feel the iPads are quite anti - social you give an ipad to a small child and all they do is zone in on the iPad they do not lift their head they are totally immersed iPad. Like I say

they are not talking to the children beside them they are not telling anyone what they are doing on the iPad they are immersed, like anti - social. I also feel children have a lot of use of technology or tablets at home so they can be worthwhile in school they do have a lot of use at home so then they are getting more use in school. Maybe of a different nature but it is still more screen time.

Researcher: Question 7: you said they were quite anti - social, Do you think using by pupil's using the iPads it could enhance their oral language development?

T1: Not hugely to be honest as previously said especially with young children they just take an iPad and don't speak to anyone around them and they are totally immersed in the iPad and what they are doing on it. I do not think they lift their head to speak to anyone else especially when they have their own individual one. The only time you hear is if something goes wrong on the iPad.

Researcher: Question 8: We are going to move on, How could we use the iPads to promote pupil oral language development and pupil collaboration?

T1: Possibly if you had only 1 iPad between a couple of children then in that way they would have to work more collaboratively and speak to each other also.

Researcher: Question 9: What school initiatives could we implement to increase the use of the school iPads?

T1: I would say we would probably need to invest in more iPads so that you would have a set per classroom not all the time but there would be an iPad per child. Everyone would be working off and it teacher led. I feel 6 iPads in the classroom makes it quite difficult.

Researcher: Question 10: is there anything else you would like to add? Thank you for participating today

T1: The person who is in charge of the iPads has a job to keep on top of them, to keep them charged. To turn up where they are supposed to be at the right time. That they have not got lost and also to keep them up to date. And just to keep them as all technology has to be updated it is quite time consuming to find appropriate resources and games. Then to update them children get bored when playing the same ones keep upskilling the iPads. It quite a job.

Researcher: Thank you for partaking in the interview today.

Appendix 9: Interview Questions (amended)

Question 1: How many years teaching experience have you?

Question 2: How do you incorporate ICT in to your teaching?

Question 3 How often do the pupils use iPads in your classroom?

Question 4: What classroom management strategies do you implement when using the pupils are using the iPads?

Question 4: What are the benefits of using the iPads in the classroom?

Question 5: How can iPads be used to facilitate pupil differentiation?

Question 6: Tell me your experience of sourcing suitable apps on the iPads for your pupils?

Question 7: Do you think by pupil's using the iPads it could enhance their oral language development?

Question 8: How could we use the iPads to promote pupil oral language development and pupil collaboration?

Question 9: What are the barriers of using technology in the classroom?

Question 10: Are you familiar with the school's 'Digital Learning Plan'?

Question 11: In your opinion how can the use of technology be integrated into the curriculum?

Question 12: What school initiatives could we implement to increase the use of the school iPads?

Question 13: Thank you for participating today, is there anything else you would like to add?

Appendix 10: Interview 2 Date: 17/04/20

Researcher: Hello, thank you today for participating in this interview, and it's about iPad use in our school, and I'll start with

Researcher: Question 1, how many years teaching experience, have you?

T2: I have 15 years teaching experience in a junior school.

Researcher: Question 2: How do you incorporate ICT in your teaching?

T2: Is that specifically with iPads or ICT in general?

Researcher: any form of ICT that you have used?

T2: Okay. Well I, up until this year I had a whiteboard, which I would have got extensive use from. This year I have started in the resource setting. So, I now would use iPads, as part of our power hours and station teaching. I would also use iPads, on a one to one or one to two basis. And when I'm taking children out for their SEN hours. And also I have a laptop in my room. I have started teaching some of the children in my room to type. So I would use the laptop for things like letter recognition. And there's a lot of really nice child friendly websites that I would use frequently, especially the Sesame street, I really like that website so, and they the main ways I would use it.

Researcher: That is great. Thank you. Question 3: How often did the pupils use the iPads in your classroom?

T2: In the resource setting, I would probably use them on a one to one or one to two basis, and maybe two to three times a week, when I am doing power hours station teaching, and they would be used within that class group. And I suppose sporadically when they are needed, sometimes if we are down a teacher, or if we don't have four teachers available we only have three, we'd use the iPads, for a group I suppose it doesn't, that won't need supervision or won't need too much intervention.

Researcher: And that brings me to the next question is can the children use the school iPads independently or is adult assistance required?

T2: The children can use the iPads independently. Most of the children would have iPads at home. However, the problem with letting children use the iPads independently, is they would usually go for the fun games, the apps they really like. And, you know, the likes of the ones the Christmas themed apps and where they are cutting Santa's beard and dying

Santa's hair that kind of thing, rather than educational apps whether there's actually quality learning content.

Researcher: Very good. Question 5 is: are the children enthusiastic about using the iPads?

T2: So.....Sorry you froze there.

Researcher: Ok Question 5 again is: are the children enthusiastic about using the iPads?

T2: The children are always without exception I think enthusiastic about using the iPads, great, I think. Yeah, I think because they don't get very much access to them they really look forward to it, as well as station teaching I think some classes have maybe a half an hour or an hour once a week where the iPads are available during maybe their golden time or during station teaching, and they're always a very popular station.

Researcher: Thank you for the input. Question 6: what classroom management strategies do you implement when the pupils are using the iPads?

T2: Well, they have to always remain seated obviously. We have the protection cases on them, we would have to be very careful about them because they're at the end of the day they're expensive piece of equipment. It can be problematic sometimes if children have to share an iPad, if you've got more children in the group, and then iPads, making sure that, you know, they each get equal amounts of time on the iPad. So, I would always use an egg timer. I have one turn and then they passed over but I think that is something you need to monitor because often the children with the stronger personalities end up with more screen time than their partners.

Researcher: Okay, thank you for that, question 7: what are the benefits of using the iPads in the classroom?

T2: First of all I think a lot of the content is free, a lot of apps are free, and you can do the sharing mode, you can do so if you buy one app, it can be shared amongst six for the price of one. It is fantastic for child led activities because obviously on every iPad you'd have the likes of the microphone, the camera to take stills and to take videos, and you have the speakers, there's pre - loaded editing tools. There's also pre - loaded apps. Like iMovie, like I've gotten a lot of use out of iMovie in the classroom. So that is a big benefit. Also, they are very portable, you know, if you want to resource. Sometimes if you are looking resources from one end of the school to another. You know it can be time consuming. It can be difficult if you're asking children to bring them from one room to another so they're

very portable. And because they're very mobile. And they're fantastic for record keeping, and it keeps it all in one place you don't need paper, you just store on your iPad. And, I suppose, just the sheer amount of resources that you can download and have just a hand.

Researcher: Thank you for that question 8: How can the iPads be used to facilitate pupil differentiation?

T2: For differentiation, I would usually have my own personal iPad for SEN children. And so, on my personal iPad I'd have apps such as the grace app, which would help with communication so a child has maybe autistic or has communication difficulties they could use apps like that to help to communicate, either with peers or with their teaching staff. And I do find differentiation can be difficult. And if you're just using the classroom set because there isn't always differentiation, on an app, particularly if you're using free apps. Often, when and if there's extra content available, it's extra content that you need to pay for, and you know obviously find on finances limit what you can have available to you.

Researcher: That's very interesting. Tell me about your experience of sourcing suitable from apps on the iPad?

T2: Sourcing suitable apps, I follow a lot of blogs and mainly through Facebook through Instagram. I get a lot of suggestions from those, and I have, because I'm a parent myself, I have an iPad at home, I'd often trial run apps myself. And I suppose the only thing that can be that could hold you back as a teacher is the cost, some of the apps are very expensive, particularly the really good ones and if you want to focus on them. And I would love to see some kind, which is, I find that usually isn't you usually will speaking just from a personal place I've often paid for apps myself, and they can be quite expensive, but I suppose they are worth it in the long run because you have them all there and once you have them bought, you can share and you will be able to transfer from device to place.

Researcher: Thank you for the input and question 9: in your opinion, does using the iPads, enhance the oral language development of the pupil?

T2 I think it does have the potential to do so. I think if the iPad is being used as being supervised by an adult, who's engaging the child as they are using the app, I think, yes, it could work that way for apps that are perhaps designed to do so. I wouldn't, personally, and I wouldn't personally think.

I wouldn't be an advocate for them. I think oral language skills need to be practiced with peers or with adults, I don't think, communicating with a device is ever going to be as beneficial as communicating the person.

Researcher: Thank you for that, question 10: How could the iPads be used to promote pupil collaboration?

T2: And, well, one activity that I have completed myself that springs to mind is making movies, during Aistear time if you set a task, maybe for children to make up a little play or for children to do an activity, which they can then record, very collaborative between both the children and maybe adults supervising so the likes of imovies app are fantastic for collaboration,

Researcher: From your experience, do you think that the pupils talk to the other children at their table when using the iPads or is it more individual work?

T2 I think it's more individual work, I think, I don't know if it's because I teach very young children, if it would be different for older children but certainly once you hand them an iPad, you know, all communication skills stop they're completely focused on the app and focused on the screens, which is understandable which such young children because you know they're, and they're such bright colours the content is interesting so I think they switch off.

Researcher: Thank you for that question 11: what are the barriers of using technology we'll speak about first in the classroom and then about the iPad Specifically.

T2: Okay, from my experience I've had so many problems with WiFi connections. And, you know, it's just so unreliable at times, you can have a lovely lesson set up, ready to go. You've spent hours maybe preparing it researching it. And at the end of day you are relying on a Wi Fi connection, which may or may not be stable. So that can be extremely frustrating, especially if you're maybe in older building, and the technology may not quite up to the standards that it needs to be so that would be a major barrier.

Researcher: Any experience with the iPads having technical difficulties that have disrupted your lesson?

T2: I think the iPads in general are very very reliable, I remember sourcing the iPads and buying the iPads. A few years ago I did a lot of research before I did it, and there was obviously a lot of options on the market at the time, iPads were not the most cost effective,

but I think for longevity, they, and for reliability. They're fantastic, so I don't think we have many problems with them. Occasionally you will have an iPad that won't turn on or won't charge properly. But I don't think it's very common with iPads. So, in general, I'd be happy.

Researcher: Next question in your opinion, how can the use of technology, be integrated into the curriculum?

T2: I don't think there's any limits, I think, no matter what subject that you are focusing on, you can use an iPad, you can use it to, to extend knowledge, you can use it to record. You can use it really in any capacity that you can think of. And I think the children as well are very creative. If you say you know there's iPads available they'll find a way to use it to even have an internet connection didn't tell them to go off and find out some information or, and to type a blog, there's so many different options that they can go with

Researcher: And what school initiatives, could we implement to increase the use of the school iPads?

T2: School initiatives, I suppose if we need more iPads, we have a very limited amount of iPads and, obviously, the reason for that is financial more so than anything else. So if we were able to increase the amount we had available I think more classrooms, would use them. I think maybe if every SEN teacher had their own dedicated set of iPads, I think that would be really useful as well. So, and then update content, update apps. And, and, you know, money available for apps that would be really helpful.

Researcher: Do you see that as a barrier problem that the apps are not kept up to date, or would you find they are kept up to date?

T2: I think they are kept up to date most of the time. However I would see some that I would get a little bit tired of and I suppose, they're the ones that the children are going to most frequently, there's always a favourite one or two like the Lego app, they always go straight to it so I suppose. So, the most popular ones are used constantly. And because of that, I suppose some ones that might be more beneficial to learning are being ignored. So maybe if, and if you're more selective about the amount of apps you had available, or maybe even on certain laptops that could work because I think sometimes less is more. When it comes to apps, even if you just had a range of six apps. And you're one of those apps was going to be for the last five minutes which is the fun one, but they had you buy that and to learn I think that could be maybe be brought into policy.

Researcher: That's a very interesting idea. The last question I say thank you so much for those ideas and for participate today Is there anything else that you would like to add?

T2: Not really anything I can think of,

Researcher: That's great, thank you so much for participating today and have a lovely day.

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Appendix 11: Pupil Focus Group Questions

Question 1. Do you know how to turn on an iPad?

Question 2. Do you know the passcode of the school Ipad?

Question 3. What is the name of the app we have been using the last few weeks?

Question 4: Did you enjoy using the iPad?

Question 5. what did you learn over the past 6 weeks using the ipads?

Question 6. Do you think using the iPad encouraged you to chat to your friend?

Question 7: Did you prefer having your own ipad?

Question 8: was there anything you found hard?

Question 9: What advice/ help would you give the next group of children?

Appendix 12: Focus Group with Pupils 28/02/20

Researcher: Q.1. Do you know how to turn on an iPad?

5 out of 6 children responded yes.

Researcher: Question 2. Do you know the passcode of the school Ipad?

Yes 6 out of 6 children said yes.

Researcher: Question 3. What is the name of the app we have been using the last few weeks?

Henry, Anna, Sophie.book app.

Question 4: Did you enjoy using the iPad?

6 out of 6 children said yes.

Researcher: Question 5. what did you learn over the past 6 weeks using the ipads?

Harry: I learned how to take pictures. How to play the games and how to take the pictures in the gardens.

Lisa: I learned how to play the lego game.

Maria : I learned the cake that I did with my sister.

Anna: I learned not to wobble the iPad when taking a picture.

Conor: I learned the passcode.

Researcher: Question 6. Do you think using the iPad encouraged you to chat to your friend?

Henry.: Took pictures and talked about it.

Conor.: We took pictures and tell them a book about it.

Lisa.: my pictures.

Sophie: I like to get my pictures done.

Anna I like showing my pictures and taking pictures at home with my tablet.

Sophie:I took the same photo as Isobel.

Researcher: Question 6: Did you prefer having your own iPad?

6 out of 6 children said yes.

Researcher: Question 7: Would you like to sometimes share an iPad with your friend?

6 out of 6 children said yes.

Anna : play on own.

Conor: – play with friend.

Henry – play with friend.

Researcher: Question 8: was there anything you found hard?

Anna: Picking outside pictures in the garden.

Henry: Nothing

Conor. Nothing

Sophie.: Doing my homework.

Researcher: Question 9: What advice/ help would you give the next group of children?

Anna: Don't wobble it when taking pictures.

Lisa: Don't drop it.

Sophie: Don't stand on it .

Maria: playing on the iPad

Henry: Going to take pictures

Lisa: Do what the teacher tells you

Appendix 13: Colleague Suggestions

Researcher: Discussion on facilitating the use of iPads in the classroom.

Colleague 1: I found them very beneficial for small groups as we only have 6 in the school I found they were very useful for literacy and numeracy stations. The children really enjoyed it which means they were really engaged. As well as that because it is on an app the stronger students can progress and the weaker students can work at their own pace so there is an element of differentiation with it.

Colleague 2: The drawback would be if they were not charged which as you know happens at times which means they could have been left on from the previous class which could have been half an hour previous. The lack of charging and also the lack of wi fi you are limited in terms of what games or activities you can use with the children.

Colleague 3: I did find like that the children enjoyed doing it and they were working collaboratively in particular when we only have 6 it did help strengthen their interpersonal relationships because they were talking to one another and they were trying to gauge whose turn it was. I think that is very important as life skills they will need to I suppose talk, to take turns and decide whose turn it is.

Researcher: Discussion on using the iPads it could enhance their oral language development.

Colleague 1: I think absolutely any opportunity where the children are paired or in groups and they are engaging in conversation is a much more natural opportunity to develop oral language about engaging with the iPads it is developing their interpersonal relationships which it is something they will need for life their learning is contextualised. Coz they is something they will have to adapt to if they are on the yard or on the road. It is such a sharing we foster in the classroom turntaking all the skills we find significant. Absolutely it does develop their oral language skills and then that goes into every area of the classroom.

Researcher: Discussion on, what school initiatives could we implement to increase the use of the iPads amongst the pupils?

Colleague 3: I think in the ideal world and I don't know how possible this is we are limiting the students when we give them a specific app and saying to the pupils this is what we are going to do. If we are to foster more creativity if we allow pupils to use the camera

be it in aistear something they have created that we allow them use the microphone like seesaw that you can develop. The way society is changing technology is the way forward as we can see in current circumstances, we need to ensure that child are developing in this critical area. Currently in our school we are not teaching the pupils digital skills and nowmore than ever it shows the importance of technology and I think to get on board and make it a priority in the classroom.

Appendix 14: Conversations with a Critical Friend

Researcher: Children do not name the objects in the photographs instead say the words ‘I took this and that’.

Critical Friend:

- Use non- verbal cue such as snap fingers or tap leg when child says the word ‘this or ‘that’ to remind the child to name the object.
- Put another child in charge of the visual cue action.
- Describe the word this and that as buzz words so when the child says it, another child makes the action and then the child has to name the object in the photograph.
- Reinforce the oral language by asking children to name all the objects in the classroom at the start of the lesson (Critical Friend, 22nd January, 2020).

Researcher: How do I increase pupil oral language?

Critical Friend:

- Build on children’s previous experiences.
- Photograph on the iPad – each child has a different photograph and they describe it to their partner.
- Circle time - I can see a ..
- Using iPads for maths trail, easter egg hunt, spring walk.
- Listening game – the pupils work in pairs, one child describes a photograph on the iPad and the other child draws the picture without seeing the photograph. (Critical Friend, 17th of January, 2020).

Researcher: Children are too busy swiping and looking at their iPads when supposed to be listening to another pupil.

Critical Friend:

- Non verbal cue such as hands on top of the head, take hands away from iPad and listen.
- Pick a listener of the day, praise.
- Show example to children of what it looks like when someone talking and the other children are swiping on the iPad. (Critical Friend, 24th of January, 2020).

Researcher: School does not have Wi- Fi to update the apps and I have to bring the school iPads home?

Critical Friend:

- Discuss with school i.T. co-ordinator and School I.T. support how much would it cost and what equipment was needed.
- Present Proposal to the Principal and the benefits of having access to Wi – FI (Critical Friend, 31st of January,2020).

Researcher: When I went to collect the iPads from the filing cabinet where they are stored they were not there and could not be found until 1pm that day.

Critical Friend:

- That is a common occurrence and is down to human error, teachers can forget to return them.
- Maybe have a laminated sheet and whiteboard marker.
- The teacher can sign out their name when taking the iPads and tick their name when they are returned (Critical Friend, 4th of February, 2020).

Researcher: I am explaining how to use Book Creator app to the six children but it is too difficult the children are tapping on the wrong settings.

Critical Friend:

- Use interactive whiteboard so that all children can see the settings required.
- Connect the iPad up to it or take photographs of the symbol they are to look for and show these in a powerpoint. (Critical Friend, 6th of February, 2020).

Researcher: Time Management is a difficulty for me at school as my learning support timetable is inflexible.

Critical Friend: Revise timetable: leave a slots available in the afternoon in case there has to be a change to timetable (Critical Friend, 25th of February, 2020).

Researcher: Schools are closed, due to Covid 19 and I did not get to conduct face to face interviews.

Critical Friend: Use the online platform Zoom to conduct your interview (Critical Friend, 16th of March, 2020).

Appendix 15: Action Cycle 3

Time	Content	Materials
Week 1	<ul style="list-style-type: none"> Gather 10 objects from around the school that are cvc words e.g. bin, bag, cup, box, and pen. Name 10 objects that are cvc words that are displayed in the classroom. The pupils will use the camera on the iPad to take a photographs of the objects on the table. 	bin, bag, cup, box, and pen. 6 iPads – labelled with each child’s name.
Week 2	<p>The pupils will:</p> <ul style="list-style-type: none"> Look through the photographs in the gallery. Open the Book creator app. Select 4 photographs for their book and add them to the pages in the book creator app. 	6 iPads – labelled with each child’s name.
Week 3	<ul style="list-style-type: none"> I will add text to each child’s photograph eg. here is a ball, It is a bin. <p>The pupils will</p> <ul style="list-style-type: none"> Read and sound out each word. Use flashcards to make the same sentence as the one in their book. 	6 iPads – labelled with each child’s name. Flashcards of tricky words and cvc words.
Week 4	<ul style="list-style-type: none"> I will demonstrate how to use the microphone on the Bookcreator app for adding speech. <p>The pupils will</p> <ul style="list-style-type: none"> Read and record their voice. Play a recording of them reading their story. 	6 iPads – labelled with each child’s name.
Week 5	<ul style="list-style-type: none"> I will delete the text sentences I wrote on their book. <p>The pupils will</p> <ul style="list-style-type: none"> Write the text and create their own sentences. 	6 iPads – labelled with each child’s name

	<ul style="list-style-type: none"> Record their voice saying the new sentences. 	
Week 6	<ul style="list-style-type: none"> Present their book to the group. Ask questions to the presenter. 	6 iPads – labelled with each child's name

Appendix 16: Minion photograph from the school garden



Appendix 17: Analysis of Drawings

Picture 1: Task draw from memory a picture of the school garden

Picture 2: Task: Choose favourite photograph and create a picture of it.

29/01/20	Main Feature	Background	Used 3 or more colours
Conor	bird house, swamp. Pool, tunnel	house, bird house	No
Maria	spider, house, person	House	Yes
Henry	elephant, bug	love heart	Yes
Anna	tree, bee, bird feeder	garden walls	No
Lisa	Light	None	No
Sophie	Garden	none	Yes
Picture 2			
28/02/20			
Conor	Minion	blue and orange sky and clouds.	Yes
Maria	garden bench	none	Yes
Henry	Minion	blue sky, cloud draw in pencil	Yes
Anna	fairy with a crown	blue sky, red cloud, sun, grass.	Yes
Lisa	Painting on the wall	none	Yes
Sophie	Fairy	pink and green rainbow and sun	Yes

Appendix 18: Child's drawing from memory of the school garden



Appendix 19: Child's drawing from of their favourite photograph on the iPad.



Appendix 20: English fortnightly plan

September Fortnightly Plan Junior Infants	September 2019
Content	
<p><u>Oral Language</u></p> <p><u>Topics</u></p> <ul style="list-style-type: none"> • Introduction to school life , routines and rules • Role play: All About Me • Use language with all things associated with themselves and starting school • Discuss the propositional language associated with Rosie’s Walk • Recount Rosie’s Walk • Circle time: Getting to know one another Sentences: My name is _____. I like _____. • Focus on rhyming through the rhymes, Baa Baa Black Sheep, Hey Diddle Diddle & I’m a little teapot, Little Bo Peep <p><u>Aistear Theme – Myself</u></p> <ul style="list-style-type: none"> • Describe themselves, family, home life etc... • Discuss growing older and getting bigger along with starting school. • Starlight. Theme: All About Me – Read Story, discuss and answer questions based on story <p><u>Jolly Phonics</u></p> <ul style="list-style-type: none"> ▪ Jolly phonics – introduce characters; Inky, Snake, Bee ▪ Phonological awareness games and exercises ▪ Introduce the sounds and letter names –s,a,t,i,, through songs, actions and sound book. ▪ Interactive whiteboard activities ▪ Interactive online activities on above sounds on Starfall.com 	<ul style="list-style-type: none"> • Direct teaching – teach the children vocabulary related to the theme ‘All About Me’ and vocabulary associated with starting school • Story – a selection of stories about family, growing up and starting school • Language games – don’t say/taboo, Simon says • Modelled reading/writing – teacher model reads & demonstrates predicting skills • Shared reading – children engage in different types of reading <p>Resources: Words, Flash Cards Jolly Phonics ,CD, Worksheets News Activity Sheets, Story Books, Starlight programme</p>

Reading:

- Introduce beginner reading skills such as holding a book and turning pages correctly, putting finger under words, left to right orientation etc..
- Reading letters from starfall website and homework sounds book.
- Starlight Story: My First Day at School
- Introduce the characters names on the online poster
- Starlight words: Rocky, Kate, Jack, Mammy, Mark

Writing

- Introduce table top activities to strengthen and improve the children's fine motor skills: marla, straws , lego, threading, pegs, megasketchers. -
- Pencil Control Activity sheets.
- Pre-cursive activities in my first week at school book
- Writing book: Letter s to i
- Colouring pages on letters s,a,t,i,
- Introduction to holding crayons/pencil with the correct pencil grip.
- Sounds Make Words – trace the letters and attempt to form the letter independently.
- Practice writing their name

Stories:

- Storeis related to starting school
- Rosie's Walk
- THE Kissing Hand.
- My First day at school Starlight story.
- Faitytale: The Three Little Pigs

Differentiation:

Teacher modelling
Pair & group work
Extra support with jolly phonic sounds
Pencil grip support

Assessment:

Teacher observation
Teacher designed tasks/tests
Questioning
Work samples
Colour Assessment
Beginning of year assessment

