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Page, Toni

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**UNIVERSITY OF
PLYMOUTH**

**Developing and Embedding a Feasible Digital Health Champion Scheme
into the Nursing Curriculum: A collaborative action research approach**

by

TONI PAGE

A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

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Author's Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee. Work submitted for this research degree at the University of Plymouth has not formed part of any other study and was financed with the aid of a studentship from the University of Plymouth's School of Nursing and Midwifery.

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Abstract

Technology can help meet the health needs of service users and carers. However, both local communities and our future workforce require support in becoming aware of and in using such technologies. Universities must do more to prepare our future nurses but these students can also support local communities in the transition to this digital future. This PhD aimed to develop and embed a feasible model offering nursing students the opportunity to support their local community in health technology, while listening to and learning from people's experiences of healthcare.

This study comprised three collaborative action research cycles with multiple stakeholders using mixed methods.

The first cycle focused on the development of a feasible model and piloted first-year students supporting known beneficiaries to use a health website. Students benefited from supporting beneficiaries. Stakeholders agreed that students could be pioneers supporting local communities but they questioned the form of a feasible and sustainable model.

The second cycle trialled a home-visit model with adult nursing students showing a health website to recruited beneficiaries in their homes. This approach had organisational problems for adult nursing students but further trials were deemed worthwhile.

The third cycle explored two models simultaneously, a home-visit with child nursing students and a general model whereby students could link with local organisations and projects to support others in using digital health. Both models contributed to the development of an ongoing Digital Health Champion scheme.

No other UK university offers large numbers of nursing students this opportunity. The Digital Health Champion scheme is being shared with other University of Plymouth healthcare programmes to explore its introduction. This PhD has helped connect the university with local organisations and projects strengthening the support delivered to local communities. Other universities could adopt and adapt similar approaches for the benefit of students and local communities.

Summary

Introduction

In this chapter, I give an extended summary of the thesis and provide a guide to the thesis structure and content of chapters.

Digital health is of benefit, and complements healthcare services supporting the shared decision-making process amongst service users, carers and healthcare professionals. By listening to a person's wants and needs, healthcare professionals can tailor their support, discussing with them reliable digital health services and the potential benefits and barriers. Technology can help meet the health needs of service users and carers, supporting them in taking more control over their health as well as reducing the cost of healthcare services.

The Topol Review recommended we prepare our healthcare workforce for the digital future. The Royal College of Nursing have been working with Health Education England to improve digital literacy, aiming for 'every nurse to become an e-nurse'. Universities must support nursing students to be able to confidently discuss and demonstrate digital health with service users and carers.

The University of Plymouth's School of Nursing and Midwifery introduced Digital Professionalism into the curriculum in 2014 supporting first-year nursing students in extending their learning of health technology and its professional use. Lecturers identified the need to combine Digital Professionalism with Wider

Patient Engagement and offer large numbers of nursing students the chance to support local communities in becoming aware of and using digital health, while gaining a greater understanding of what matters to a person and their experiences of healthcare. On beginning this PhD I was presented with this challenge and tasked with developing and implementing a feasible model, whereby students are agents of change, supporting local communities to use digital health. A scoping review was then undertaken to gain an understanding of how other universities support undergraduate nursing students in becoming aware of and using health technologies. The literature review concluded that there was a scope for universities to develop a model such as the Digital Health Champion scheme, supporting both students and local communities.

Methods

A collaborative action research mixed methods approach was chosen working with multiple stakeholders (academics, healthcare professionals, students, organisations, projects, and the public). Three cycles were undertaken.

The first cycle commenced developing a feasible model with stakeholders exploring the perceived benefits and concerns. Initially, six workshops were conducted followed by an online survey to further explore stakeholders' thoughts. Subsequently first-year nursing students were invited as part of a module assessment to support family or friend beneficiaries to use a health website. This allowed exploration of benefits and barriers for students in supporting people known to them without addressing the concerns raised by

stakeholders. Reflections of 371 students were analysed followed by two focus groups and two interviews.

The second cycle developed and trialled a 'home-visit model', whereby students visited a citizen's home and introduced a health website. Three second-year adult nursing students and five citizen contacts took part. Citizen contacts were carers or someone living with a long-term condition with access to the internet and recruited via a service user organisation. Reflective logs from students and questionnaires from citizen contacts were collected. All were invited to be interviewed about their experience.

The third cycle explored two models simultaneously, a home-visit model with child nursing students supporting families, as well as a general model for all students. A general model explored students linking with organisations and projects to support local communities to use health technology. Both models contributed to the development of the Digital Health Champion scheme, now implemented within the nursing curriculum.

Findings

The general concept of nursing students acting as agents of change and supporting local communities to use digital health was accepted amongst stakeholders. However, they questioned what shape this feasible and sustainable model would take. A home-visit model was trialled with adult and child nursing students, while a second model explored students linking with local organisations, and projects to support the use of digital health. Both

models were developed alongside the Digital Health Champion scheme, and were initially incorporated into the scheme. A home-visit model was deemed unfeasible within the third cycle due to difficulties surrounding the recruitment of service users and carers, and the volume of resources required. However, students keen to undertake a home-visit model felt the scheme could be undertaken alongside a district nursing placement, which led to the exploration of students supporting service users and carers alongside placements.

The Digital Health Champion scheme is a three tiered award providing students the chance to support local communities to use health technology, and listen to people's healthcare experiences. Students can choose a tier aligned with their confidence, digital and communication skills. The bronze tier encourages students to support people known to them. The findings illustrate the activity to be of benefit to students. With regards to silver and gold tiers, students support local communities via linking with local organisations, projects and alongside placements. The benefits of these tiers require further exploration. Criteria were developed to assist students and staff in understanding what constituted a bronze, silver and gold award. For the scheme to be sustainable, it was embedded into the new curriculum and will continue to be supported by stakeholders. I am not aware of any other UK universities offering large numbers of nursing students the chance to support local communities to become aware of and use digital health.

Conclusion

Collaboration as a philosophy and the principles of action research enabled multiple stakeholders to develop a complex model for digital health champions. This model benefits both students and local communities. This PhD has helped connect the University of Plymouth with local organisations and projects across Devon and Cornwall. Within the newly approved curriculum, the School of Nursing and Midwifery offers all nursing students the chance to become Digital Health Champions applying and developing their knowledge, skills and confidence in digital health while supporting others and considering their needs and wants. Future research must ensure the Digital Health Champion scheme continues within the curriculum, and further investigates the experiences of our Digital Health Champions and the people they support.

The scheme has been shared across national and international conferences, and was awarded runner-up at last year's Patient Experience National Network Awards for Transformer of Tomorrow. At present, the learning from this PhD is being shared with other healthcare programmes within the University of Plymouth. The intention is to explore ways of introducing the Digital Health Champion scheme and further support large numbers of healthcare students in their journeys to become e-professionals. Future work will continue to strengthen and explore new collaborations, further sharing the Digital Health Champion scheme. Other universities may consider adopting and adapting similar approaches to benefit students and local communities.

Thesis Structure

My thesis has eight chapter and follows the below structure:

Chapter One: Background Literature

Firstly, I introduce the topic area and discuss the reasons for undertaking this PhD, before identifying the overall aim and research questions.

Chapter Two: Scoping Review of Digital Health in the Undergraduate Nursing Curriculum

Within the chapter, I discuss a scoping review, exploring how UK universities support undergraduate nursing students to develop their skills, knowledge and confidence of digital health. The scoping review produced a greater understanding of what activities are taking place, and the extent the Digital Health Champion scheme is a novel approach.

Chapter Three: A Collaborative Action Research Approach

Within this chapter, I consider various methodologies before providing a rationale for my chosen approach.

Chapter Four: Research Methods

I describe the research design and methods employed for three collaborative action research cycles.

Chapter Five: Developing a Feasible Model Offering Nursing Students the Chance to Support Local Communities in using Digital Health

The findings are presented across three chapters. Within this first chapter I present the findings from the first cycle identifying how they informed the development of a feasible model.

Chapter Six: Trialling and Amending a Model for Nursing Students to Support Local Communities to Use Digital Health

In this second findings chapter I describe the second and third collaborative action research cycles. The cycle's trialled a home-visit model where students visited citizens and showed a health website, and trialled a general model to support local communities in using health technology. Both fed into the initial development of the Digital Health Champion scheme.

Chapter Seven: Development and Implementation of the Digital Health Champion Scheme

The final findings chapter presents the Digital Health Champion scheme in its current form, and how it was amended in response to stakeholder feedback.

Chapter Eight: Discussion

I address each research question presented in chapter one (Background Literature), before reflecting on strengths and limitations of this PhD.

Conclusions are drawn regarding the scheme's future, as well as recommendations on how to approach the embedding of digital health into the curricula.

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Abbreviations

AR – Action Research

CAR – Collaborative Action Research

CIRF – Complex Intervention Research Framework

DHC – Digital Health Champion

DP – Digital Professionalism

EHC – Electronic Health Record

eOAR – Electronic Online Assessment Record

EPIC – eHealth Productivity and Innovation for Cornwall and the Isles of Scilly

GP – General Practice

HEE – Health Education England

HRA – Health Research Authority

IRAS - Integrated Research Application System

IT – Information Technology

MeSH - Medical Subject Headings

NHS – National Health Service

NICE - National Institute for Health & Care Excellence

NMC – Nursing and Midwifery Council

RCN – Royal College of Nursing

RCT – Randomised Control Trial

REC - Research Ethics Committee

SNaM – School of Nursing and Midwifery

SSM – Soft Systems Methodology

UK – United Kingdom

US – United States

WPE – Wider Patient Engagement

Chapter One: Background Literature

1.1 Introduction

In this chapter, I reflect on the current need for healthcare professionals and local communities to develop their awareness and use of health technology. I present the overall aim and research questions of this PhD, focusing on the prospect of students becoming agents of change.

1.2 Digital Health

Digital technologies are used every day and have become an integral part of modern day life. How best to use these digital technologies within healthcare requires continued exploration. The term digital health has been described as an umbrella term that encompasses a broad range of technologies including ehealth, mhealth, telehealth, virtual reality, genomics, artificial intelligence and more (World Health Organisation, 2019), being used to promote, empower, and facilitate health and wellbeing (Royal College of Nursing, 2019).

Technology has the potential to meet the health needs of service users, and to support them taking more control over their health (Ham & Brown, 2015) as well as reducing the cost of healthcare services (NHS, 2014). I would like to acknowledge there are various terms used to define a person accessing health services (Morris, 2017); however, for consistency, my PhD will use the term service user. In recent years there has been a shift from the traditional paternalistic approach in healthcare, towards shared decision-making,

empowering people and communities to be more proactive and to take more control of their health and lives (Public Health England, 2015). Digital health has been referred to as the cultural transformation of traditional healthcare (Mesko *et al.*, 2017), using technology to support the shared decision-making process amongst service users, carers and healthcare professionals. There is a need to support people in taking more responsibility for their healthcare, and ensuring they have the knowledge and skills to manage their conditions (Coulter & Collins, 2011; Department of Health, 2012; NHS, 2019b).

People search for health information online (Clarke *et al.*, 2016; Kivits, 2006; Stevenson *et al.*, 2007; Takahashi *et al.*, 2011), albeit not always referring to trustworthy websites and resources. Benefits have been identified for service users accessing online health information as part of interventions. Digital health interventions have promoted healthy behaviours (Murray *et al.*, 2014), improved self-management (Moeinedin *et al.*, 2009; Murray *et al.*, 2017), improved awareness of healthcare issues (Baker *et al.*, 2003; des Bordes *et al.*, 2017), improved knowledge (Takahashi *et al.*, 2011), enhanced self-efficacy (Bolle *et al.*, 2015), and empowerment (Shapira, Barak & Gal, 2007). Furthermore, increased social contact, reduced loneliness, improved mental well-being, and reduced use of health services have been identified as benefits to service users using the internet (Moeinedin *et al.*, 2009; Portnoy *et al.*, 2008). Rice (2006) reported that those looking at health information online learnt something new, impacting on the way they cared for their health.

Supporting people to use digital technologies such as the internet for health complements 'traditional' healthcare provision (Clarke *et al.*, 2016; Kivits, 2006; Suziedelyte, 2012). For example, an awareness of the websites and digital resources available can help people to become more informed and to raise questions that they can share and discuss with their healthcare professionals. Tan and Goonawardene (2017) found service users seeking health information online improved their relationship with their health professional, yet this depended on two factors: their existing relationship with the professional, and whether they decided to share the information. Sharing searched information with a healthcare professional is an additional source of information for service users and carers (Stevenson *et al.*, 2007). However, there are concerns with regards to service users and carers using the internet for health, especially as a first point of call, as it may make people feel overwhelmed and provide conflicting information (Clarke *et al.*, 2016; Helft, 2005). Bond (2010a) refers to service users as having a poor awareness of how to identify reliable health websites and the approach the National Health Service (NHS) had taken to kitemark health websites. It could be argued that it is better to train service users in how to identify reliable and quality health websites to share with their healthcare professional, rather than developing a list for them to use.

It is important to be aware of the challenges, strengths and opportunities in using digital health interventions, ensuring they are evaluated and implemented successfully within healthcare. Evaluation methods of technology need to be robust, yet with advancing technologies these need to be actioned in a timely manner. Randomised control trials (RCTs) are considered by many a gold

standard for applying a rigorous methodology, but where experimental studies are not appropriate, other rigorous methodologies can also be used which are more suited to the setting and the subject (Murray *et al.*, 2014).

1.3 Digital Healthcare Workforce

The Topol Review (2019) defines technology within four key areas; digital medicine, genomic, artificial intelligence and robotics. With continually advancing technology, it could be argued that it is difficult for staff, service users and carers to remain up to date and aware of how technology can be used efficiently and effectively to improve health and wellbeing. Nurses may have negative attitudes towards the increased use of health technology (O'Mahony *et al.*, 2014), do not have access to or the time to attend training (Bond, 2009).

The literature has highlighted students as lacking computer skills (McKinney & Page, 2009; Moule, Ward & Lockyer, 2010) or being fearful of technology (Davies, 2014). By supporting students in becoming aware of and using the various technologies, universities can foster positive attitudes towards the future use of technologies for health and wellbeing.

Improving the digital skills of our healthcare workforce is a prevalent topic (Health Education England, 2019; Reed *et al.*, 2019; Royal College of Nursing, 2017). The NHS recognises technology will change the future of healthcare, and aims as part of the long-term plan to enhance the use of data and digital technology (NHS, 2014; NHS, 2019b). For this aim to be achieved healthcare professionals need to be digitally literate. The Topol Review (2019) identified that our healthcare workforce requires training to develop their digital literacy in

preparation for the digital future. Alongside the review, Health Education England (HEE) (2018) produced a digital literacies framework and are working in partnership to build a digital workforce in healthcare, ensuring professionals have the digital skills and knowledge to comfortably use digital resources. In particular, HEE and NHS Digital have set up a programme entitled 'Building a Digital Ready Workforce', where part of their role will be to 'develop digital leadership and to support and develop digital specialists in the health and care workforce' (Health Education England, 2018). Thinking specifically towards the nursing profession, the Royal College of Nursing (RCN) have been working with HEE to improve digital literacy in nursing (Royal College of Nursing and Health Education England, 2017), supporting the RCN's aim for every nurse to become an e-nurse by 2020 (Royal College of Nursing, 2017; Royal College of Nursing, 2018).

The RCN undertook a consultation in 2018 to explore the digital future of nursing. As part of the consultation contributors concentrated on how data, information, knowledge, and technology could empower patients, recognising the importance of booking an appointment online and accessing medical records (Royal College of Nursing, 2018). The NHS have identified numerous benefits to the practice, staff, service users and carers as a result of using online General Practice (GP) services (NHS, n.d.). GP surgeries are continuing to develop their websites (NHS, 2016) and were required to register at least 20% of their service users to access at least one online service (BMA, NHS Employers & NHS England, 2017). NHS England reported 24% of the public to be registered to use online GP services (NHS England, 2018). There is still a

large proportion of the population yet to register (NHS England, 2018).

Furthermore, registering to use the online services does not necessarily mean people are using them. As of January 2019, the NHS commenced the roll out of the NHS App to sit alongside and complement the GP websites (NHS, 2019a).

The intention was to create a digital front door, a way in which people can access digital services via their smart phones, tablets and computers.

Nevertheless, a digital front door does require people to have the digital skills and confidence to access and use the technology.

At present, there is a need to explore with people who are unfamiliar with using health technology, whether they might be interested, and then supported to improve their digital literacy. Digital literacy can be defined as the ability to live, learn, work and partake in a digital world (Royal College of Nursing and Health Education England, 2017). The proportion of people new to the internet is decreasing (Office for National Statistics, 2016b), but people may be novices, lack confidence, or need general support to use the internet to access trustworthy resources. It could be argued that the same can be said for other technologies. With an estimated 15 million adults living with long-term conditions, of which 6.75 million live with multimorbidity (Department of Health, 2012), these people contribute a significant weight on health services in terms of GP appointments and hospital admissions (Baird et al., 2016). Supporting those wanting to use technology to improve their health and wellbeing is therefore a key NHS and government concern. Developing a sustainable approach that supports people (healthcare professionals, service users, and carers) to develop their skills, knowledge and confidence of current and future

health technologies is required, particularly to increase levels of health literacy and engagement with appropriate services and interventions.

Many people have the preconception that older people are not interested in using technology. For some this may be true, yet the literature suggests that others are more positive and will adopt technology if they perceive them to be of benefit (Demiris *et al.*, 2004; Mitzner *et al.*, 2010; Morris *et al.*, 2013; Vaportzis, Clausen & Gow, 2017). Office for National Statistics (2016a) have predicted the number of people aged 65 and over to increase in all regions across England between 2014 and 2024 by on average 20%. Healthcare professionals need to be inclusive, and as part of the shared decision-making process ask the person irrespective of age, about their preferences and to support them in their decision. To do this our present and future healthcare professionals need to be aware of and have the confidence to talk about the benefits and barriers of available technologies.

Ferguson *et al.* (2018) stated that healthcare curricula' need to focus on developing digital health skills. This is supported by the Topol Review (2019) identifying that educational providers must support students in becoming digitally literate preparing them for their future career in healthcare. More specifically, the literature has identified the need for nurse education to further support students in becoming digitally literate (Bond, 2010b; Bond, 2009; Risling, 2017). There is a need for educators to be aware of how sociodemographic factors impact on students' health literacy, digital literacy and ehealth literacy (Holt *et al.*, 2020).

Bond (2010b) illustrated at Bournemouth University that over the years, students starting their pre-registration nursing course used the internet significantly more, with a majority perceiving themselves to have basic internet skills. When thinking about how quickly technologies advance, we cannot wait for our students to develop basic skills. Support and guidance must be provided so that all students can become e-professionals. Risling (2017) identified the need for nurse education to plan for electronic health records, wearable technologies, big data, and increased patient engagement. There is a need to explore novel ways of how to best integrate ever-advancing technologies into nurse education (Terry *et al.*, 2019), supporting students of all abilities to start their journey to becoming an e-professional.

1.4 Students Helping Communities

On a national level, the Good Things Foundation, a social change charity, has put out numerous calls inviting organisations and Online Centres across the UK to collaborate and apply for funding with the aim of improving people's lives by supporting them to use digital technology. Part of the findings from the Library Digital Inclusion project refer to a partner delivery model whereby organisations recruited volunteers such as the public, Halifax and Barclays staff, as well as health and social care students from college and universities to be trained as champions in order to support communities (Tinder Foundation, 2016). In early 2019, Good Things Foundation released another call with the aim of funding Digital Health Hubs across England to help communities or organisations to link with local healthcare services (Good Things Foundation, 2019). The tender again invited organisations to link with a UK Online Centre to apply for funding

to train digital champions and support service users. In recent years the notion of digital champions has been introduced across the UK, encouraging volunteers such as the public (Barclays, 2013; Digital Boomers, 2018; Digital Unite, n.d.; Healthwatch Torbay, 2019; Learn My Way, 2019; OxFed, 2018), healthcare professionals (Warwick-Booth *et al.*, 2013), health and social care students (Tinder Foundation, 2016), and bank staff (Barclays, 2013; Good Things Foundation, n.d.) to support people in communities to use digital technologies.

Health champions are role models sharing their knowledge towards the use of technology in health within their communities (Warwick-Booth *et al.*, 2013). In the past few years the South West of England have recruited and trained community volunteers' to become digital champions via Healthwatch (Healthwatch Torbay, 2018), Digital Inclusion Teams (Cornwall Council, 2019), as well as work based champions in Livewell Southwest. Digital champions is a concept that has expanded nationally over the past few years, alongside the undertaking of this PhD.

In 2014, Francis Maude proposed as part of the Government Digital Inclusion Strategy that by 2020 everyone would be digitally capable (Maude, 2014). The Local Government Association set up the Digital Transformation Programme to support local authorities to develop and use digital technologies (Local Government Association, n.d.). Local authorities have devised digital strategies to help understand the current situation including the challenges and opportunities, as well as reflecting on how to achieve proposed outcomes

(Cornwall and the Isles of Scilly Leadership Board, n.d.; North Devon Council and Torridge District Council, 2018). In 2019, Cornwall County Council developed a digital champion toolkit referring to various types of digital champions, including informal, voluntary, professional, embedded, and work-based, to support others to use digital technology (Cornwall Council, 2019). It is apparent that supporting communities to use digital health is in the forefront of people's minds. There is a need to work collaboratively towards a common goal of supporting those wanting to become more digitally literate to learn about and use digital health.

There is the potential for students to become informal or voluntary champions as part of their education, by supporting local communities in improving their health and wellbeing through the use of technology. Being a champion would further develop; as students qualify they can continue to apply their knowledge and skills as a positive role model for colleagues. The RCN's consultation identified the need to have positive role models to support the use of technology, and help address barriers amongst nurses and midwives (Royal College of Nursing, 2018). By supporting students in commencing their e-journey, the future workforce will have experience of health technology and supporting of others.

The need to work in partnership with service users and the importance of listening to their voices was clear in the Francis Report (2013). This move towards a new model of partnership is echoed in the education and training of nurses. The Nursing and Midwifery Council (NMC) produced standards

requiring universities to illustrate how patients and the public contribute towards the curricula design and delivery, for pre-registered nursing (Nursing and Midwifery Council, 2010). Nursing education has involved patients and the public in activities such as recruitment and selection of students, the production of the curriculum, and delivering sessions (Lathlean *et al.*, 2006; Scammell, Heaslip & Crowley, 2015; Terry, 2012; The Willis Commision, 2012; Tremayne, Russell & Alman, 2014).

Service users' involvement in the delivery of the undergraduate curriculum for healthcare professionals has been reported to be of value to users (McKeown *et al.*, 2012) and of benefit (Haq, Fuller & Dacre, 2006; Jones & Black, 2008; Morgan & Jones, 2009; Stuhlmiller & Tolchard, 2015). For example, research identified that service users' involvement in the mental health curriculum had a positive impact on their mental health, and empowered users as a result of their role as an expert patient (Jones & Black, 2008). A more recent study explored student-led clinics as part of clinical training (Stuhlmiller & Tolchard, 2015). This study reported that students gained practical experience and an insight into a community's needs. This in turn helped the community increase their self-management. A similar finding was reported as a result of service users teaching medical students, leading to an increase in service users' confidence in managing their own conditions (Haq, Fuller & Dacre, 2006).

1.5 Students Learning from Communities

Nursing students appear to value the time spent communicating with service users face-to-face, and perceive their involvement as an important part of the

curriculum (Costello & Horne, 2001; Jones & Black, 2008; Tremayne, Russell & Alman, 2014). Research evidence has identified a number of benefits for students engaging with service users. For example, learning first-hand from service users about their experience and gaining a deeper understanding of how their lives have been impacted upon by their health (Tremayne, Russell & Alman, 2014; Turnbull & Weeley, 2013); using less professional terminology when communicating (Wood & Wilson-Barnett, 1999); and starting to see the service user as a person (Rush, 2009). Rush (2009) also identified service user involvement as a facilitator of transformative learning. Nevertheless, challenges concerning resources and logistics have been reported when implementing service user involvement into nursing education (Speed *et al.*, 2012).

The Willis Commission (2012) referred to patient-centred care as being a thread that is embedded throughout the pre-registration nursing education and in continuing professional development. Various terms are used to signify such an approach, for example patient-centred, person-centred, personalised, and individualised care (McCormack & McCance, 2017; Mead & Bower, 2000). For me the preferred term is person-centred, as I believe this term puts focus on the person as whole, rather than towards their health condition(s). Person-centred coordinated care has recently been defined as 'care that is guided by and organised effectively around the needs and preferences of the individual' (Lloyd *et al.*, 2017). The concept person-centred care is continuing to be developed, with researchers exploring how to implement such care into practice and identifying how to measure outcomes (Lloyd, 2016). Frameworks identifying key components of person-centred care and how it could be implemented have

been proposed (Ekman et al., 2011; McCormack & McCance, 2006; Mead & Bower, 2000; Scholl et al., 2014).

There is also accumulating evidence that person-centred care can improve a range of outcomes (Ekman et al., 2012; Hansson et al., 2017; Olsson et al., 2013). Nevertheless, authors have recognised a number of challenges to implementing person-centred care into practice (Gask & Coventry, 2012; McCormack, Dewing & McCance, 2011; Neitzke, 2013). McCormack, Dewing and McCance (2011) refer to contextual factors as being the greatest challenge facing person-centred care, and the need to move towards person-centred cultures. By shifting towards a more person-centred culture, digital services/interventions must be discussed with and tailored to the service users and carers needs and wants (Huygens *et al.*, 2016). Understandably, this may be more complex when supporting those living with multimorbidity.

According to the Gothenburg Model there are three routines to implementing person-centred care into practice; obtaining service user narratives, establishing a partnership through collaborative or shared decision-making, and documenting the narrative (Ekman et al., 2011). Forming a partnership is a key component within the Gothenburg model, as it provides the opportunity for the healthcare professional and the service user to develop a collaborative partnership (Charon, 2001). However, there is a need for professionals to change their mindset and get to know the person (Britten et al., 2016). The scheme outlined in this PhD provides nursing students with the opportunity to listen to and learn from service users and carers experiences, obtaining their

narratives, and further developing their understanding of person-centred care. This is to complement nursing education in preparing students for their future career in healthcare, as it shifts towards move person-centred approaches.

1.6 Setting the Scene

Universities offering nursing education are required to adhere to standards set by the NMC, and new standards for the pre-registration nursing programmes were released in September 2018 (Nursing and Midwifery Council, 2018). In recent years, Schools or Departments of Nursing across the UK have developed new nursing curricula, which have then been approved by the NMC and delivered to students since September 2019. For me I had expected the new standards to be more explicit towards the need to embed health technologies and promote the development of digital health skills and knowledge within the curriculum. With a lack of emphasis on digital health, I questioned whether there were examples within the UK where universities had published research detailing how they had supported nursing students to develop their digital skills, knowledge, confidence and professionalism in using health technologies. Mapping existing examples could feed into subsequent NMC revalidations. To my knowledge, no other review had explored this for nursing; yet with the need to develop nurse education and embed health technologies there was a requirement to comprehend the literature and identify gaps. The next chapter presents a scoping review focusing on the development of digital skills, knowledge, confidence and professionalism within the UK undergraduate nursing curriculum.

The University of Plymouth's Faculty of Health is a regional health education provider. The School of Nursing and Midwifery (SNaM) is located across three sites, Exeter, Plymouth, and Truro, and delivers undergraduate education for adult, child and mental health nursing in a programme revalidated by the NMC using the new standards (Nursing and Midwifery Council, 2018). Midwifery students are also educated by SNaM, although their programme was not yet on the revised standards. In 2014, SNaM introduced two new elements into Plymouth's nursing curriculum, Digital Professionalism (DP) and Wider Patient Engagement (WPE). DP is taught at the start of the academic year to all first-year undergraduate student nurses. It is a chance for students to commence their learning towards being professional when using technology (Jones *et al.*, 2016), as well as introducing them to the various technologies being used and/or trialled within healthcare (Jones *et al.*, 2017). Through DP, students gain a greater understanding of the benefits of technology in healthcare as well as the potential barriers.

WPE focuses on students having the opportunity to develop wider knowledge of what matters to people, while extending their understanding towards health conditions, experiences of healthcare services, how the person's voice has (or not) been heard as well as subsequent changes within organisations (University of Plymouth, 2019). WPE activities give students a chance to get to know patients as people (Young, Jones & Eardley, 2016). WPE won an award in 2017 from HEE for its novel work in the nursing programme (University of Plymouth, 2017), and shortlisted for the Patient Experience Network National Awards 2018 for Strengthening the Foundation (Patient Experience Network,

2019). Within the University of Plymouth's former nursing curriculum, WPE was not a mandatory component. However, personal tutors were encouraged to support students in identifying and carrying out WPE activities. The nursing curriculum has recently been revalidated and approved by the NMC, whereby DP remains an integral part, and WPE must be undertaken by students, as it is a philosophy that runs through the course.

My PhD focused on combining two novel elements (DP and WPE) already introduced within SNaM's nursing curriculum. The intention was to explore and further develop a feasible model offering large numbers of nursing students, across fields and sites, the chance to become agents of change with stakeholders. Students would extend their own learning of digital health and be able to support their local community, in addition to listening to and learning from peoples experiences of healthcare, as well as getting to know the person.

To provide evidence of a model's feasibility, there were two approaches that could have been taken: 1) develop a model with a large number of students, or 2) develop a model with a smaller group of students as a pilot with the intention of upscaling once deemed feasible by stakeholders. As a model would be developed alongside an existing curriculum as an extra-curricular activity, the second approach was chosen. With the revalidation of the nursing curriculum approaching and if a feasible model were to be developed with stakeholders, there would be an opportunity to investigate the best approach to upscaling and embedding a model within the new curriculum.

As stakeholders, universities need to be socially accountable and have an impact on the wider community (Boelen, 1999; Hosny, Ghaly & Boelen, 2015). There is an opportunity to share my PhD findings with other universities and healthcare disciplines, supporting their exploration towards students in becoming e-professionals, as well as working with local organisations and projects towards supporting local communities.

1.7 Research Questions

This research sought to work collaboratively with stakeholders to develop a feasible model offering student nurses the opportunity to extend their own learning of health technologies prior to supporting local communities. The research questions included:

- Is it feasible to provide all nursing students the opportunity to support service users and carers, in a non-clinical setting, as part of the nursing curriculum?
 - Do stakeholders perceive the approach as feasible and for whom (students, SNaM, service users and carers, the community)?
 - Does the approach adequately address concerns raised by stakeholders?
- Is there any evidence of students, service users and carers benefiting from participating in this model?
 - Are students increasing their knowledge, skills and/or confidence in using and demonstrating digital health while being person-centred?
 - Are students supporting service users and carers in becoming aware of and/or using health technology?

- How could such a model be sustained and further developed overtime?
 - Is there the opportunity to embed a model into the nursing curriculum and if so how?
 - Could a model be adopted and adapted by other UK universities to be of benefit to nursing students and local communities?
 - How are universities supporting nursing students in developing their digital skills, knowledge and/or confidence?

1.8 Summary

In summary, nursing education must explore novel ways of supporting students in becoming e-professionals. My PhD focuses on developing a feasible model combining two novel elements (WPE and DP) within the University of Plymouth's nursing curriculum. My intention was to work with stakeholders to develop a way of supporting all nursing students in developing their knowledge, skills and confidence of health technologies in preparation for their future careers. Students would become agents of change and support local communities to extend their awareness and use of health technologies, tailoring their approach to individual needs. Within the next chapter, I present a scoping review of student nurses developing their digital skills, knowledge, confidence and professionalism in using health technologies as part of the undergraduate curriculum.

Chapter Two: A Scoping Review of Undergraduate Nursing Students Developing their Digital Skills, Knowledge, Confidence and Professionalism in Using Health Technologies

2.1 Introduction

To the best of my knowledge, no recent review has explored the literature to gain an understanding of activities offered by UK universities to support undergraduate nursing students in developing their digital skills, knowledge, confidence and professionalism in using health technologies. A scoping review was deemed suitable to broadly review the available literature; determine whether a systematic review should be undertaken; identify gaps within the available literature, and to disseminate the findings (Arksey & O'Malley, 2005). Arksey and O'Malley (2005) developed a methodological framework, proposing key steps for conducting a scoping review. Efforts have been made to advance this methodology further (Daudt, van Mossel & Scott, 2013; Levac, Colquhoun & O'Brien, 2010; Pham *et al.*, 2014). Through following Arksey and O'Malley's (2005) five step framework, this review has mapped the published examples of UK universities supporting students in developing their digital skills, knowledge, confidence and professionalism in using health technologies, and the ways in which they have approached embedding these initiatives into the curricula. It is hoped this review would be of use to the NMC within the next pre-registration revalidation.

2.2 Method

Arksey and O'Malley's (2005) framework for scoping reviews was employed following five steps: 1) identifying the research question, 2) identifying relevant studies, 3) study selection, (4) charting the data, and (5) collating, summarising and reporting the results. The need to assess the quality of the literature as part of Arksey and O'Malley's framework is an ongoing area of tension. Pham *et al.* (2014) referred to the importance of including all relevant literature if the aim is to provide an overview. This scoping review has not assessed the quality of the literature.

Stage 1: Identifying the Research Question

A scoping review of this sort needs a 'research partner' and I recruited my working colleague to help me in identifying and reviewing the literature. The research question and aims were discussed and refined amongst the research team. The subsequent categories were defined to facilitate the development of the research questions:

- Population: undergraduate nursing students
- Intervention: learning about health technologies
- Comparison: across UK universities' curricula
- Outcome: digital skills, knowledge, confidence and/or professionalism

The review addressed the following research questions:

- What activities are UK universities delivering to support undergraduate nursing students in developing their digital skills, knowledge, confidence, or professionalism in using health technologies?
- Is there any evidence of the support being embedded into the curriculum?

Stage 2: Identifying Relevant Studies

Schools or Departments of Nursing undertake pre-registered curriculum revalidation to comply with newly published standards from the NMC (Nursing and Midwifery Council, 2018). With the most recent revalidations occurring in 2010 and in 2018, this review includes articles between January 2010 and July 2020. As we know technology advances rapidly, it was perceived that a review covering the last 10 years would be a sufficient period to understand how programmes and universities are supporting undergraduate nursing students on their journey to become an e-professional.

The PICO (population, intervention, comparison and outcome) framework was applied to identify relevant search terms (Melnik & Fineout-Overholt, 2005).

The search strategy was developed using an iterative process. Key search terms were identified and further developed by reviewing relevant literature.

Medical Subject Headings (MeSH) were identified for each database leading to four search strategies. It was felt a combination of search and MeSH would reduce errors in retrieving citations. An information specialist based within our university was consulted. MeSH were linked with the corresponding search

terms using 'OR'. Each heading was then conjoined using 'AND'. Truncation symbols were used to improve the quality of the search.

A preliminary search was conducted in Cumulative Index to Nursing and Allied Health Literature (CINAHL) to support the development of both the search strategy and the inclusion criteria. Once finalised an advanced search was undertaken across four online databases CINAHL, Allied and Complementary Medicine Database (AMED), Medline (EBSCO) and PsychInfo. Abstracts were searched using the search strategy in table 2.1.

Table 2. 1: Search terms

<p>Population: nursing student* OR student nurse</p> <p>AND</p> <p>Intervention: technolog* OR video OR digital OR web* OR mhealth OR m-health OR ehealth OR e-health OR "health informatics" OR apps OR wearable* OR "virtual reality" OR robot* OR tele* OR AI OR device OR "social media" OR "VR" OR "AR" OR "augmented reality" OR smart* OR electronic</p> <p>AND</p> <p>Comparison: educat* OR curricul* OR course OR degree OR program* OR module* OR lecture* OR simulation OR placement OR train* OR universit* OR framework OR model* OR scheme*</p> <p>AND</p> <p>Outcomes: digital* OR litera* OR knowledge OR confiden* OR skill* OR benefit* OR improv* OR develop* OR learn* OR enhanc* OR support* OR self-efficacy OR professionalism OR competenc* OR capabilit*</p>
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Stage 3: Study Selection

Only two (CINAHL and PsychInfo) out of the four databases could identify articles by geographical location. A consistent approach was therefore taken not using any geographical restrictions when searching for articles in a database. Instead, the title, abstract, keywords and author address were checked to identify the country of origin.

The review excluded reviews of books, books themselves as well as published literature reviews and protocols. This is because the intention was to identify individual studies developing nursing students' digital skills, knowledge, confidence and/or professionalism in using health technologies. After the removal of duplicates and unwanted studies such as those not based in the UK, citations were reviewed independently by two researchers (myself and my colleague) using Rayyan a software for supporting the screening process (Ouzzani *et al.*, 2016). The title and abstract of all UK based studies were screened against the inclusion criteria (table 2.2). Researchers presented their thoughts and discussed any disagreements before deciding whether articles would be viewed at full text. Where a decision could not be agreed, a supervisor was consulted.

Table 2. 2: Inclusion criteria

Inclusion criteria:
<ul style="list-style-type: none">• Retrieved from January 2010 to present (July 2020).• Full articles in English.• UK based articles.• Undergraduate nursing students.
Exclusion criteria:

- Reviews of books and books themselves.
- Literature reviews and protocols.
- Non-UK based articles.
- Articles not in English.
- Articles not referring to undergraduate nursing students developing their digital skills, knowledge, confidence and/or professionalism in using health technologies.

Figure 2.1 shows a PRISMA flow diagram of the literature. Initially the database search identified 3,943 articles, of which 1,219 were duplicates and 2,529 were excluded as shown in table 2.2. A total of 195 articles were screened using their title and abstract prior to taking 20 articles forward to full text. Five articles met the inclusion criteria.

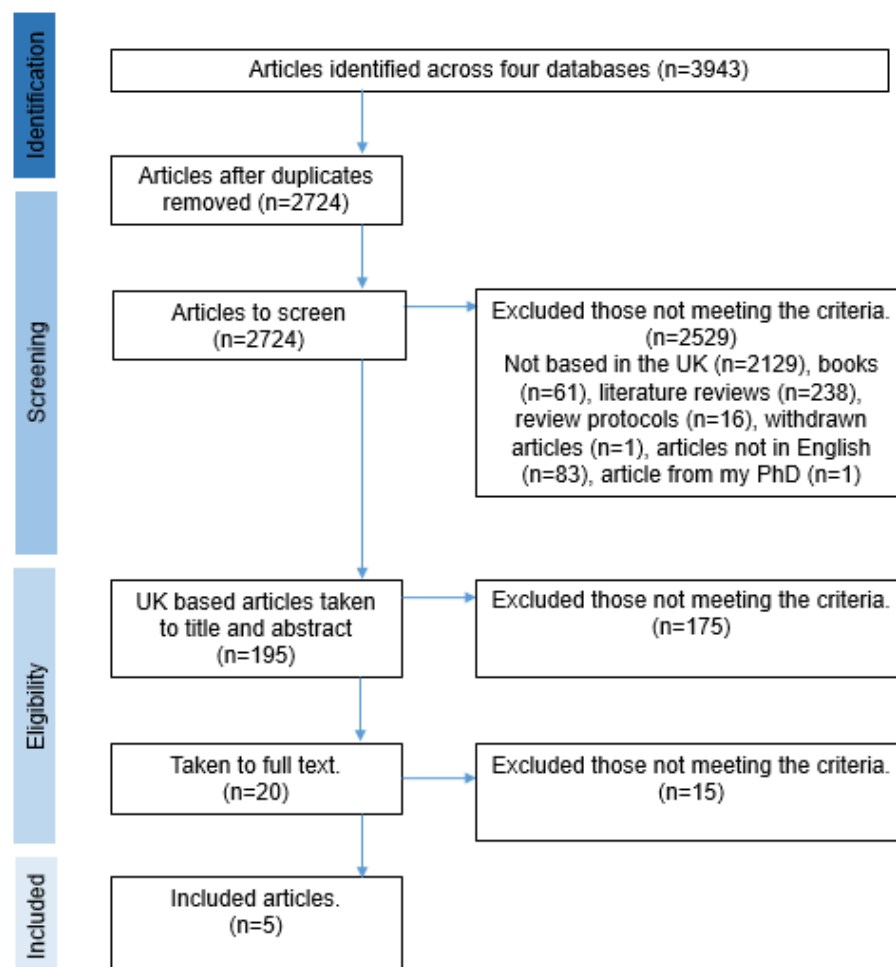


Figure 2. 1: PRISMA flow diagram of database search

Stage 4: Charting the Data

Charts were developed to accurately record extracted data. As recommended by Levac, Colquhoun and O'Brien (2010), I initially extracted data from relevant articles, this was discussed and checked by my colleague to ensure the extracted data met set aims. Any discrepancies were discussed. Data extraction was an iterative process to identify the following categories:

- author, year, and location,
- study aim(s),
- the activity,
- integration of the activity into the curriculum,
- number of students involved,
- findings, and
- research design.

Table 2.3 summarises the five articles meeting the inclusion criteria for this scoping review.

Table 2. 3: Articles meeting the inclusion criteria

Author, year and location	Study aim(s)	Activity	Integrated into the curriculum	Number of students	Findings	Research design
Brown and Bloxside (2019) London South Bank University	To pilot a workshop teaching nursing students about their digital footprint and use of social media.	A one two-hour workshop was delivered exploring with students their digital footprints and provided an introduction to Twitter. Students took part in a live Twitter chat illustrating how social media can be used to share best practice and connected with others in the profession.	Author's reviewed the curriculum to identify where best to trial the activity. Where students received fewer skill sessions the activity was offered as an opportunity. The activities continuation was not discussed.	Students were invited to complete an assessment within their workshop and then to write a reflective piece of 500 words about their learning. Student numbers are not reported.	Written reflections and verbal feedback led to the identification of four themes. Students reported learning about social media settings, privacy, professional profiles, and the ability to link with healthcare professionals.	Qualitative study. No mention of ethical approval.
Jackson, Gettings and Metcalfe (2018)	To describe how undergraduate nursing students developed	Twitter was integrated into a family-centred care conference aimed towards professionalism and continuing professional	The activity took place within a conference and was reported as being integrated within the	It is not clear how many nursing students in adult, mental health, and children's nursing attended the	A total of 53 participants tweeted 215 times using the conference hashtag. A total of 404,241 impressions were	Quantitative study. No mention of ethical approval.

King's College London	their digital competency in using social media via a conference.	development opportunities. Students were provided with information regarding professional social media usage and encouraged to set up Twitter account prior to the conference. The conference began by providing a one hour session on social media use. Students were invited to use Twitter and the conference hashtag. Two roundup sessions were provided to show tweets and to ask questions.	programme. The approach was deemed suitable to support large numbers of students in the future.	conference. 53 participants tweeted during the conference.	made overall. Students' tweets illustrated a feeling of connectedness. Students deemed the conference supporting their use of Twitter to be a feasible and acceptable way. The conference presentations combined with the use of Twitter raised students' awareness of charitable organisations so they could engage with resources and consider ways to signpost to patients to support. There was no inappropriate use of Twitter by students.	
Jones <i>et al.</i> (2016) University of Plymouth	To explore the feasibility of Twitter in the nursing curriculum, and how it	Students received a face-to-face lecture on digital professionalism, two webinars, the chance to use chatrooms, and were invited to create a	The activity formed part of a module and students were assessed. Since the activity was deemed feasible there is	Two first-year cohorts. The first cohort included all nursing students (n=450) whereas the second cohort focused on adult	Students developed an understanding of the benefits and barriers to using social media. From using Twitter students developed an	Mixed methods. Ethical approval was obtained.

	could be assessed.	Twitter account whereby their use was assessed. A pilot was undertaken with second and third-year students.	potential for the assessment to be extended to other technologies.	nursing students (n=97). Students were invited to answer a short questionnaire of which 348 replied (first cohort = 261, second cohort = 87).	awareness of the number of healthcare professionals available online.	
Smith and Cambers (2017) Abertay University	To explore students and mentors use of electronic online assessment records (eOAR) after attending a workshop, as well as exploring recommendations to support the roll out of eOAR.	Attended a workshop on eOAR delivered by the university. The system was used by participants (mentors and students) across placements.	The training workshop was delivered prior to placement. Upscaling of eOAR on placements was of interest, but barriers needed to be addressed.	Five mental health students from a class of 40 were recruited. Students commenced the study, with one withdrawing from the course during the first placement. Each participant completed a pre and post questionnaire after each placement. Two placements were captured. Nine pre-placement	Across the first placement four students reported an improvement to their information technology (IT) skills and three in their confidence to use eOAR. Within the second placement three students reported an improvement to general IT skills, and three specifically in their confidence to using eOAR. Qualitative analysis lead to four main themes: support,	Mixed methods. No mention of ethical approval.

				questionnaires completed and eight post-placement questionnaires. Each questionnaires consisted of closed and open-ended questions. Field notes were also captured.	access to computers, document navigation, and future developments.	
Terry <i>et al.</i> (2019) Swansea University	To understand students' experience of becoming National Institute for Health & Care Excellence (NICE) champions.	NICE student champion scheme. Training of healthcare students to deliver digital literacy sessions on using the NICE Evidence Search engine to peers. 28 sessions delivered by student champions.	Students submitted an expression of interest. It is not clear how the activity was part of the curriculum. Champions had difficulties in managing their workload and being a champion. The model's continuation was reliant upon structures within the university and NICE.	16 students (first, second and third-year nursing and midwifery students) became champions. Two focus groups were undertaken (n=4, n=2).	Students perceived there to be value in learning about the NICE search engine on a personal level, for writing essays and future practice. Students supported the notion of the NICE search engine being used in teaching to help develop students' confidence in adopting the tool in practice.	Qualitative study. Ethical approval was obtained.

Stage 5: Collating, Summarising and Reporting the Results

Five articles met the scoping review's inclusion criteria. There were not enough articles to warrant a systematic review, and indicated there was a gap within the literature. A mixture of qualitative (n=2), quantitative (n=1) and mixed methods (n=2) studies were identified. Low numbers of participants brought into question the transferability or generalisability of the findings for some studies (Smith & Cambers, 2017; Terry *et al.*, 2019). Although Terry *et al.* (2019) used a qualitative method to capture data, the number of focus group participants was much lower than the literature recommends. When reflecting on studies response rates, Smith and Cambers (2017) attained adequate levels (17 out of 17 questionnaires from five students) albeit with a very small sample, while Jones *et al.* (2016) attained 64% response rate from 547 students. It would be of interest to explore why students did not take part in an activity as well as why they took part but then declined to participate in the data collection. Furthermore, it was not possible to determine Brown and Bloxsidge (2019) response rate, as the article did not report any participant numbers bringing into question the findings reliability let alone transferability.

Four themes have been identified aligning with the review's research questions. These included the explored technologies and activities undertaken; the influence the activity may or may not have had on student's digital skills, knowledge, confidence and professionalism; how studies evidenced and measured the outcomes, as well as how studies approached integrating the activity into the curriculum.

Explored Technologies and Activities Undertaken

Review articles referred to introducing and/or supporting the use of Twitter (Brown & Bloxsidge, 2019; Jackson, Gettings & Metcalfe, 2018; Jones *et al.*, 2016); NICE search engine (Terry *et al.*, 2019), and eOAR (Smith & Cambers, 2017) to improve students' digital skills, knowledge, confidence and/or professionalism.

Within this review, we have identified that in the past ten years five UK based studies have shared activities supporting students in developing their digital skills, knowledge, confidence and/or professionalism using one of three technologies. Additional research is required to firstly develop activities aligned with preparing students for the digital future of healthcare, and secondly how best to integrate them within the curriculum.

Students' Digital Skills, Knowledge, Confidence and Professionalism

The studies explored whether an activity prepared undergraduate nursing students in using a particular piece of technology (Brown & Bloxsidge, 2019; Jackson, Gettings & Metcalfe, 2018; Jones *et al.*, 2016; Smith & Cambers, 2017), and in one case to also support their peers (Terry *et al.*, 2019).

Three articles focused on preparing students to use social media. Studies explored with students their digital footprints, awareness of privacy, Twitter live chats and connecting with others for professional learning. The findings across all three studies illustrate the curriculum can support students in understanding how to use social media, its applicability and ability to use it in a professional

manner (Brown & Bloxsidge, 2019; Jackson, Gettings & Metcalfe, 2018; Jones *et al.*, 2016).

Smith and Cambers (2017) offered students the chance of attending a 30-minute workshop on eOAR, providing specific support and training prior to using the system on placement. Training was provided by the university. Five students took part. Across their first placement, four students reported an improvement to their IT skills and three specifically to their confidence in using eOAR. The second placement led to three students improving their IT skills and three reporting an increase in confidence to using eOAR. Support in using eOAR prior to a placement was recognised as a need by students and mentors.

Terry *et al.* (2019) recruited 16 nursing and midwifery students across the undergraduate programme to become NICE evidence champions, delivering 28 sessions to support peers in using the NICE evidence search engine.

Champions participating in focus groups reported a greater understanding of the NICE search engine and the resources available (Terry *et al.*, 2019). One participant commented that they wanted to share their knowledge and to help others. It is essential to bear in mind that one of the focus groups did not have a sufficient number of participants.

Evidencing and Measuring Digital Outcomes

Jones *et al.* (2016) and Smith and Cambers (2017) captured data via questionnaires. No validated measures were used. Students were invited to self-report their confidence (Smith & Cambers, 2017), the extent the activity was

worthwhile and whether they had learnt 'something' (Jones *et al.*, 2016) using either a four or ten point scale. Additional closed questions captured students' use of Twitter and demographics (Jones *et al.*, 2016). Both Jones *et al.* (2016) and Jackson, Gettings and Metcalfe (2018) extracted data from Twitter to present students' interaction levels calculating the number of tweets, retweets, followers and/or impressions. Alongside the quantitative data, Jackson, Gettings and Metcalfe (2018) reviewed students' Twitter comments and Jones *et al.* (2016) analysed students' opinion of digital professionalism. Qualitative data methods such as focus groups (Smith & Cambers, 2017; Terry *et al.*, 2019), and written reflections (Brown & Bloxsidge, 2019; Smith & Cambers, 2017) have been used to explore students' experiences. Terry *et al.* (2019) refers to their thematic analysis as focusing on the development of students' digital competency as well as peer teaching.

Integrating Activities in the Curricula

Articles referred to integrating the activity within a programmes module (Jones *et al.*, 2016), conference (Jackson, Gettings & Metcalfe, 2018), or by identifying a gap within the timetable (Brown & Bloxsidge, 2019). Brown and Bloxsidge (2019) discussed a need to review the curriculum in order to identify a suitable time to offer students the chance to become involved in the study. Due to heavy workloads, students were invited to participate during weeks where skill sessions consisted of fewer hours. It is not clear how many students were invited or how many participated.

Jones *et al.* (2016) explored the embedding of Twitter into a curriculum assessment. Although it is unclear how the assessment criteria were created, the article is transparent in presenting the assessment methods. Students were given a choice to use Twitter or to write an essay about the benefits and limitations of social media. The author's (Jones *et al.*, 2016) conclude it is feasible to introduce Twitter as part of an assessed component, as well as the potential for the assessment to be extended to other technologies. This activity was undertaken by large numbers of nursing students and was deemed worthwhile by the students. The approach supported students in enhancing their understanding of Twitter and its applicability to them as future healthcare professionals.

Jackson, Gettings and Metcalfe (2018) introduced nursing students to Twitter by integrating an hour workshop and Twitter live chats within a family-centred care conference, as part of the curriculum for first-year nursing students. Students reported the approach as being feasible and acceptable. It is not clear how many students attended the conference but 53 participants were reported sharing at least one tweet. Jackson, Gettings and Metcalfe (2018) reported the use of Twitter as being a positive approach to having discussions among large numbers of educators and students. Both Jackson, Gettings and Metcalfe (2018) and Jones *et al.* (2016) integrated an activity supporting students use of social media into the curriculum.

Interestingly Jones *et al.* (2016) quotes nursing staff prior to their study saying 'avoid social media'. There is general consensus social media must not be

avoided, but students must be supported in learning how to use the platforms in a professional capacity and providing them with the knowledge to make their own decision as to whether to use social media. Possible negative attitudes towards technology among academic staff are likely to influence the activities introduced to students.

Terry *et al.* (2019) does not explicitly share how the activity was delivered within the curriculum. However, author's (Terry *et al.*, 2019) recognise that the continuation of their model is reliant upon structures provided by the university and NICE, emphasising the findings are not transferable and will differ across universities depending on their own structures. Even though there were a number of positives for students, there were also difficulties experienced for example, managing their workload while being a champion. The model needs adapting so students do not feel additional time constraints in an already busy curriculum. For me involving students in the development of a model could help avoid this constraint.

Finally, Smith and Cambers (2017) discussed the integration and upscaling of eOAR on placements, and the barriers needing to be addressed. There is a need for financial investment in the hardware to enable the upscaling of eOARs to entire cohorts, in addition to supporting mentors, and organisations to adopt IT. Training of the system and guidance was reported as essential, with support required from universities, practice education facilitators and mentors (Smith & Cambers, 2017). Universities have a role to play in supporting students in becoming prepared in using technologies on placements.

2.3 Discussion

Educators and universities face a challenge in developing new ways to support students in developing their digital skills and knowledge (Terry *et al.*, 2019), especially as health technology advances. Both Jackson, Gettings and Metcalfe (2018) and Jones *et al.* (2016) explored integrating feasible approaches into their nursing curriculum for large numbers of students. These studies could be of interest to those Schools or Departments of Nursing with large cohorts who have not yet introduced digital professionalism and social media usage into their curricula.

Terry *et al.* (2019) supported students in developing their understanding of a health resource before sharing their learning with their peers and supporting them in their use. Since there is a need for the healthcare workforce to support service users in improving their health and wellbeing through the use of technology (Health Education England, 2019), nurse education must consider providing all students the chance to practice supporting others (peers and service users). This study is comparable with local and national organisations working with volunteers (Barclays, 2013; Digital Boomers, 2018; Digital Unite, n.d.; Healthwatch Torbay, 2019; Learn My Way, 2019; OxFed, 2018), healthcare professionals (Warwick-Booth *et al.*, 2013), health and social care students (Tinder Foundation, 2016), and bank staff (Barclays, 2013; Good Things Foundation, n.d.) to become champions and supporting communities to use online resources. Future research could lead to collaborative working with other universities to explore how the study could be replicated, with the

understanding that students becoming champions could be applied to other aspects of digital health, not just in terms of using the NICE search engine.

For me the review highlights some of the challenges I was yet to face, firstly I had to create a model that would not contribute towards time constraints felt by students. Involving students in the models development would provide the opportunity for them to raise concerns and inform the structure. Terry *et al.* (2019) and Brown and Bloxsidge (2019) specified the need to understand the curriculum and the structure within the university. Working collaboratively with stakeholders to understand the structure and processes would help develop and integrate a feasible model, offering student nurses the opportunity to extent their own learning of health technologies within an already compact curriculum.

2.3.1 Research Gap

There is limited research towards UK universities supporting nursing students in developing their digital skills, knowledge, confidence and/or professionalism in using health technologies. This gap could be for a number of reasons, for example, academics may not have had time to publish their studies and focused on curriculum development, the programme or university may wish to remain competitive and not share their work, and/or additional research is required to develop this topic area. However, the gap in the UK literature is aligned with a lack of guidance on digital health levels within the NMC's pre-registration standards. If we are to prepare our future workforce, nurse education must support students in understanding technologies and their

applicability within healthcare, as well as providing opportunities to practice supporting others in learning about and in using health technologies.

Included articles have indicated their findings as hard to generalise or transfer to other settings. Nevertheless, sharing examples of learning and best practice would be of use to other universities, and the NMC in developing future pre-registration standards. As universities amend their curricula and further support students in developing their digital skills, knowledge, confidence and professionalism in using health technologies, they may want to consider undertaking a longitudinal or cross sectional study to investigate the extent digital outcomes are developed over the programme.

2.4 Summary

This scoping review aimed to identify examples of how UK universities are supporting undergraduate nursing students in developing their digital skills, knowledge, confidence and/or professionalism to use health technologies. It is apparent there is a gap within the literature and additional research is required to explore what activities UK universities can deliver to support students, in addition to ways these activities can be integrated into the curriculum and sustained. Within the next chapter, I discuss my rationale for choosing collaborative action research (CAR), acknowledging similar methodologies prior to reflecting on my positionality within the research.

Chapter Three: A Collaborative Action Research Approach

3.1 Introduction

In this chapter I present my methodological approach. First, I share my rationale for choosing action research (AR), followed by the origins and principles of AR, and reflecting on a handful of AR typologies. Following this, literature covering insider-outsider teams will be discussed prior to reflecting on my initial positioning within the research. Finally, I discuss how to undertake credible AR mixed methods and identify strategies to strengthen the quality of this research.

3.2 Methodological Underpinning

A paradigm is a framework guiding how we view and engage with the world around us. Each paradigm takes a different stance towards axiology, ontology, epistemology and methodology. Axiology is our values towards the research process, this was not acknowledged by Guba and Lincoln (1994) but has been identified as being a fundamental component within a paradigm (Heron & Reason, 1997; Morgan, 2014). Ontology is our beliefs and assumptions towards reality, questioning how reality exists (Guba & Lincoln, 1994). Epistemology refers to the nature of knowledge and how we know what reality is, this is influenced by our ontological beliefs (Guba & Lincoln, 1994). Methodology relates to the approach taken to produce data and inquire. These components (table 3.1) guide our strategies or approaches to inquiry, our decision to use qualitative, quantitative or mixed method designs (Creswell, 2003).

Table 3. 1: Components of qualitative, quantitative and mixed methods

	Qualitative	Quantitative	Mixed methods
Axiology	Values are included (the researcher is part of the research)	Values are excluded (the researcher is independent from the data)	Multiple stances
Ontology	Subjective	Objective	Subjective-objective
Epistemology	Interpretivism	Positivism, post-positivism	Pragmatism
Methods	Texts	Numerical data	Combining of texts and numerical data

Quantitative research methods falls within the realms of positivism or post-positivism, while qualitative methods are at the other end of the continuum aligned with interpretivism. Pragmatism and participatory approaches create a quandary as they fall within multiple paradigms. In particular, pragmatism values equally both qualitative and quantitative methods facilitating a mixed methods approach (Onwuegbuzie, Johnson & Collins, 2009), whereby the researcher can draw upon techniques and procedures so long as there is a purpose (Creswell, 2003). The mixing of methods within a singular project is questioned by some who perceive them to have distinct paradigms. Without combining different methods it could be argued that the knowledge would be incomplete (Williamson, Bellman & Webster, 2012). Through mixed methods the researcher views and makes sense of the world in multiple ways (Creswell, 2011), leading to a greater understanding through valuing and combining quantitative and qualitative approaches. The approach has been described as a third strategy to inquiry, or a third methodology equivalent to quantitative and qualitative approaches (Johnson & Onwuegbuzie, 2004). A participatory approach is a collaborative form of inquiry placing people at the centre,

resonating with action research (Reason & Bradbury, 2001). This tends to be aligned with qualitative research but can take a quantitative stance (Creswell, 2003). For me there is value in undertaking mixed methods, as I perceive subjectivity and objectivity to add to the depth of knowledge. There is also value in placing people at the centre of inquiry and working with them to make a change.

3.2.1 Pragmatism

Pragmatism deems knowledge to be based on experience, gained from actions and consequences (Creswell, 2003). The continuing debate around research paradigms and epistemology are pushed aside placing an emphasis on how best to undertake the research and answer set questions (Cherryholmes, 1992; Creswell, 2003; Hoshmand, 2003; Johnson & Onwuegbuzie, 2004). Not all researchers accept pragmatism as a philosophy, as it is considered a way in which researchers avoid other research paradigms (Johnson & Onwuegbuzie, 2004). However, pragmatists would argue that purists are restricting their research (Onwuegbuzie & Leech, 2005). It is important as a pragmatic researcher that I carefully consider my stance, fully understanding the strengths, weaknesses, similarities and differences of quantitative and qualitative research, in order to decide on the best approach (Onwuegbuzie & Leech, 2005). Pragmatism should not be an afterthought but carefully considered as its own research paradigm referring to literature for guidance.

3.2.2 Rationale for Action Research

Quantitative studies include RCTs and survey based approaches, qualitative studies comprise of ethnography and grounded theory, case studies are predominately qualitative but on occasion can involve quantitative approaches, and lastly action research. The preferred research strategy must reflect the general aim of the study. For example if I were measuring the outcomes of an existing intervention and wanted to explore its effectiveness with participants, the gold standard RCT would be a method worth considering. If I were keen to gain an insight into a group of participants either within their own environment and/or towards a social phenomenon I would consider ethnography.

This PhD aimed to develop new knowledge creating a feasible and sustainable model with stakeholders, intending to solve a problem and make a change within the curriculum. Quantitative studies such as a RCT was not perceived to be an appropriate approach, as there was a substantial number of unknown factors and it was impossible to form a hypothesis. Undertaking research alongside an existing curriculum would require a flexible approach. To create a feasible model my PhD needed to explore the thoughts and experiences of stakeholders, which leaned towards a qualitative stance. A survey-based study was also deemed unsuitable, as it would not provide an opportunity to explore the phenomena in-depth leading to the creation of new knowledge. Although there is value in undertaking quantitative studies, an overarching quantitative approach was not considered appropriate for this PhD. Instead, quantitative methods were applied in a pragmatic way, used as and when required to answer a research question.

Qualitative studies were contemplated. Since I valued working collaboratively with stakeholders to create a feasible model, there was a need to acknowledge my values and explore stakeholders' thoughts. When considering the different types of qualitative studies ethnography was quickly determined as unfitting. My PhD aimed to work with stakeholders to make a change rather than observing participants in their environment whereby better understanding the problem. There was a need for my chosen strategy to be responsive and enable a model to develop and evolve overtime. Qualitative studies would provide the required depth, but it was difficult to foresee the direction of the research and I began to question whether a singular approach would limit the research design. AR enables the research to be driven by stakeholders' feedback, choosing a research design that best answers the research question. Since the direction of the research was unknown, a flexible and pragmatic approach to the research design was preferred.

3.3 Origins of Action Research

The origin of AR is disputed. A number of authors refer to Kurt Lewin (Lewin, 1946) as developing AR to practically solve social problems and to evaluate the changes; planning, action and fact finding (the action is evaluated) (Adelman, 1993; Hart & Bond, 1995; Holter & Schwartz-Barcott, 1993). Nevertheless, Altrichter and Gstettner (1993) challenge this notion and suggest J.L Moreno devised the approach (Altrichter & Gstettner, 1993), which has been subjected to modification (Coghlan & Brannick, 2014; Stringer, 2007). AR is a pragmatic approach, enabling the researcher to be responsive and bridge the gap between theory, research and practice (Coghlan & Brannick, 2014; Waterman

et al., 2001). Together the researcher and stakeholders drive the research forward, refining the approach democratically to solve an identified problem (Coghlan & Brannick, 2014). There is no hierarchy, but a partnership where the research is done ‘for, with or by’ stakeholders (Reason & Bradbury, 2001).

AR can be considered an overarching methodology. Researchers have identified and applied different typologies (Dick, 2002). Essentially different methodologies follow a similar cycle. Within this research project, the below model has been applied: **a) constructing and planning**; exploring how to develop and implement a feasible student-led model into the nursing curriculum, **b) implementation**; recruiting participants, trialling a model and acting on feedback, **c) evaluation**; exploring the outcomes and **d) reflecting** on the findings with stakeholders to inform the next cycle (figure 3.1).

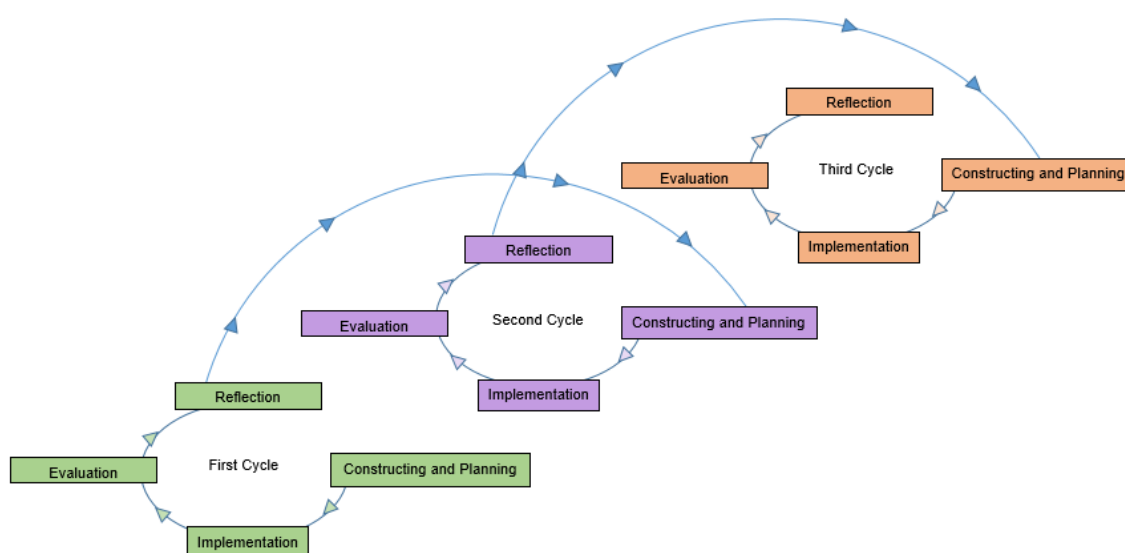


Figure 3. 1: Action research model adapted from Coghlan and Brannick (2014)

3.4 Typologies of Action Research

Authors have identified different typologies within AR referring to different paradigms or approaches (Reason & Bradbury, 2001). A number of authors discuss AR incorporating three voices, the first, second and third person (Chandler & Torbert, 2003; Reason & Bradbury, 2001). These voices enable the integration of research and practice (Chandler & Torbert, 2003).

The first person refers to the researcher thinking carefully about their assumptions, intentions, philosophical thinking, as well as taking the time to reflect on how their own thoughts and behaviours influence the research. Reflexivity supports the researcher in increasing their self-awareness within the research, identifying and understanding their positioning, any biases, anxieties, misunderstandings and ensure conclusions have correctly been reached (Argyris, 1995; Coghlan & Brannick, 2014; Finlay, 2002). The second person is where the researcher works collaboratively, and as a team question the research process, findings and discuss the next steps. The team reflects on their experiences and actions, analysing them in detail by asking questions such as what did the project achieve and do well, what were the challenges, and how could the research project be managed better in the future (Atkins & Murphy, 1994; Boud, Keogh & Walker, 1994). Finally, the third person refers to the research being disseminated to a broader audience. Authors have suggested 'the most compelling and enduring kind of AR will engage all three strategies' (Reason & Bradbury, 2001). This reiterates the AR principles reflection and reflexivity. It has been proposed that the second person is crucial to AR (Coghlan & Brannick, 2014).

Hart and Bond (1995) refer to AR as being able to shift between four typologies (experimental, organisational, professionalising and empowering) as part of the cycles or phases. Hart and Bond (1995) proposes that the AR criteria includes seven aspects: to be educative, for individuals to work within groups, problem focused, change focused, to be of benefit and work towards agreed improvements, to have iterative cycles, and collaboration. This research project values the criteria as well as the three voices.

3.4.1 Appreciative Inquiry

While AR focuses on solving a problem, which could be considered a negative perspective, appreciative inquiry concentrates on the positives aiming to enhance a projects strengths and successes (Boyd & Bright, 2007; Bushe, 2011; Coghlan & Brannick, 2014; Copperrider & Srivastva, 1987; Egan & Lancaster, 2005).

Appreciative inquiry has four stages; discovery, dream, design and destiny (Boyd & Bright, 2007; Bright, Cooperrider & Galloway, 2006; Egan & Lancaster, 2005; Ludema *et al.*, 2003) and deemed to be a form of AR or a method that complements AR (Copperrider & Srivastva, 1987; Ludema *et al.*, 2003). The successes, resources, and other assets within a project or organisation need to be considered. I acknowledge that I am building upon existing successes of WPE and DP. In this case, AR was undertaken to create new knowledge, integrating research and practice to explore ways of combining WPE and DP alongside an existing and complex curriculum.

3.4.2 Complex Intervention Research Framework

The Medical Research Council's Complex Intervention Research Framework (CIRF) (Richards & Hallberg, 2015) for health is closely aligned with AR and could have been chosen to deliver this PhD. CIRF consists of four components; development, feasibility and piloting, evaluation, and implementation. The intention is to develop a complex intervention by moving between components and not necessarily following either a cycle or linear process (Craig *et al.*, 2008; Richards & Hallberg, 2015). This is comparable to AR. McCormack (2015) suggests that the AR method can be used specifically within the implementation component of CIRF; however, the literature does not mention the use of AR within the other three components. CIRF recommends a number of questions to be considered within each of the four components, with the intention of supporting researchers in the design, development and evaluation (Craig *et al.*, 2008).

Since the aim of this PhD was to develop a model collaboratively with stakeholders, a CAR approach would better facilitate this. Furthermore, AR literature discusses the premise of insider-outsider teams, this was deemed appropriate considering the importance of collaboration as a philosophy, myself as an outsider to the research and the need to move towards the role as a facilitator.

3.4.3 Soft Systems Methodology

Soft systems methodology (SSM) could have been applied to this research. The methodology was developed by Checkland and colleagues in 1970s, and has

been referred to as a form of AR (Mehregan, Hosseinzadeh & Kazemi, 2012; Sánchez & Mejía, 2008; Tajino, James & Kijima, 2005). The approach is flexible (Augustsson, Churruca & Braithwaite, 2019), focusing on the system in its entirety rather than its parts (Tajino, James & Kijima, 2005), in order to gain a greater understanding of the system or situation. The methodology consists of two activities, the real world and system thinking, which spans across seven steps (Mehregan, Hosseinzadeh & Kazemi, 2012). The steps identify and explore a situation prior to taking action, which falls within the remit of AR; however, the language used to describe these steps is more complex. SSM refers to change being more likely to occur if worldviews are taken into account regarding a situation.

Previous reviews have referred to the use of SSM within healthcare (Powell & Mustafee, 2017; Van de Water, Schinkel & Rozier, 2017). With Augustsson, Churruca and Braithwaite (2019) publishing a scoping review protocol to map SSM for change in management within healthcare. SSM is a pragmatic and flexible approach towards real world problems and would be of benefit within healthcare research to solve an identified problem and in making a change. I acknowledge I could have chosen this methodology for my PhD, however, CAR was better suited to my values towards collaboration, not only as a principle but as a philosophy.

3.5 Key Principles of Action Research

AR is a process focused on solving an identified problem (Coghlan & Brannick, 2014; Waterman *et al.*, 2001; Williamson, Bellman & Webster, 2012). AR does

not focus on the extent change has happened, rather how the approach contributes to knowledge, advances understanding and making improvements with the intention of solving a problem. Literature has discussed and proposed various characteristics of AR (Adelman, 1993; Coghlan & Brannick, 2014; Hart & Bond, 1995; Holter & Schwartz-Barcott, 1993; Lathlean *et al.*, 2006). The key principles include: cycles with action, problem-solving, reflecting and reflexivity as well as collaboration.

3.5.1 Cycles with Action Taking Place

AR is an iterative process. It is underpinned by responsiveness and reflection throughout each cycle, subsequently leading to a greater understanding of the project, and actionable knowledge (Dick, 2002). Simply following the cycles does not mean AR has been established; there is a need to identify problems and explore ways to resolve them (McTaggart, 1994). Heron (1996) discusses how AR cycles can be applied using an Apollonian or Dionysian approach. Apollonian uses a structured and linear process following each of the phases, whereas Dionysian is spontaneous as it allows learning to emerge creatively responding to the situation (Oates, 2002). The phases can, but do not have to be followed rigidly (Williamson, Bellman & Webster, 2012). It could be argued that the priority for AR is learning from the phases and cycles rather than choosing which approach to follow. The cycles as shown in figure 3.1 can be difficult to clearly present in reports as the phases can be hard to distinguish (Waterman *et al.*, 2001). For this project, I refer to each cycle as having phases rather than steps or stages, recognising overlaps.

3.5.2 Problem Solving

AR focuses on improving a situation through cycles, seeking to identify and explore a problem with the intention of developing new knowledge (Coghlan & Brannick, 2014). Action is undertaken in the present with the intention of making a change in the future.

3.5.3 Reflecting and Reflexivity

Reflection has been described as the ‘activity which integrates action and research’ (Coghlan & Brannick, 2014), whereby reflection promotes learning from both expected and unexpected outcomes. Dick (2002) identified two aspects of reflection, firstly to review the findings from a previous action, and secondly to plan for the next action. I continually questioned and reflected on the research methods, process and findings to ensure the research was trustworthy (Raelin & Coghlan, 2006). As a collaborative approach, stakeholders must continuously reflect on the research, putting forward their thoughts and understandings (Finlay, 2002). Feedback is balanced, together deciding on the next steps and understanding how it informs future cycles and research (Atkins & Murphy, 1994).

3.5.4 Collaboration

Stakeholders (academics, healthcare professionals, students, local organisations, local projects, and the public) were invited to collaborate and to work as a team to develop a feasible model. Within this PhD I refer to stakeholders as collaborators and/or participants. For instance, stakeholders have collaborated and are part of the insider-outsider team developing a model

by providing informal feedback. On occasion, they have shifted to the position of being a participant providing formal feedback through data collection methods. The opposite has also occurred whereby stakeholders have begun as participants and later become collaborators. Informal feedback refers to discussions that have taken place at meetings, via presentations, and School Away Days. Figure 3.2 illustrates the connotation behind these terms.

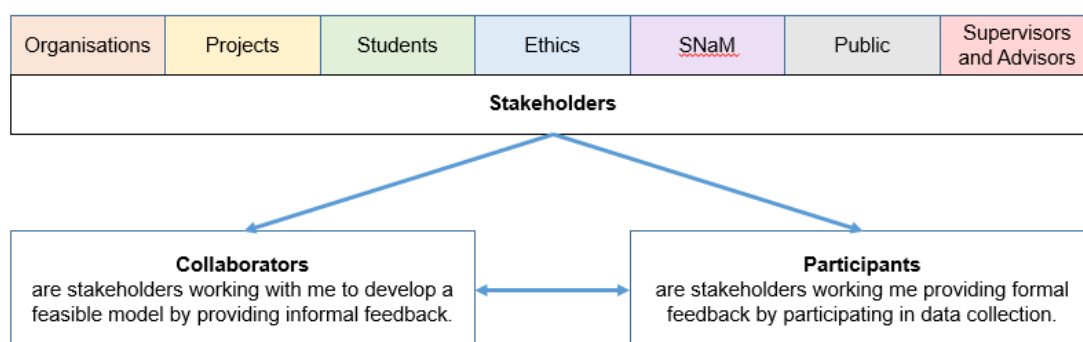


Figure 3. 2: Terms used to describe stakeholders

For me collaboration was not just a principle but a philosophy, and I truly believed a feasible model for all could be developed working with multiple stakeholders towards a common goal. Without working with insiders, outsiders and those with dual roles, this research would not have been undertaken. Although collaboration is a principle of AR, I would argue that this is on a continuum. AR with a high-level of collaboration would be considered as participatory action research or collaborative action research (CAR) whereby stakeholders participate in the research process, supporting the creation of the research question, undertaking the data collection, analysis, write up and/or deciding the next steps (Baum, MacDougall & Smith, 2006). Low-level collaboration does not truly involve stakeholders in deciding the next steps.

3.6 Insider-Outsider Teams

Collaboration is essential within this study, where insiders, outsiders and those with dual roles work with each other creating an insider-outsider team (Bartunek & Louis, 1996; Coghlan & MacIntosh, 2007). Together the insider-outsider team take action to overcome an identified challenge with the intention of making a change (Holter & Schwartz-Barcott, 1993). Louis and Bartunek (1992) reference Evered and Louis as originally suggesting the idea of researchers being insiders and outsiders in 1981; this idea has been further developed. Insiders have had a similar experience or characteristics to potential participants, possibly based within a comparable setting. Outsiders tend to have different characteristics to insiders and potential participants, or may not have experienced working within the research setting. This allows them to be objective in their work and bring their own expertise (Kerstetter, 2012; Thomas, Blacksmith & Reno, 2000).

An insider-outsider positionality continuum emphasises that an individual's position can alter during a research project. However, it can be difficult to define a researcher as being either an insider or outsider (Mercer, 2007; Merriam *et al.*, 2001). Mercer (2007) in particular referred to participants, topics, location, and time as factors within the research influencing positionality. In addition to moving along the continuum, there is the possibility of individuals having dual roles, where they may hold more than one role within the research, resulting in them being both an insider and an outsider. The continuum allows for all of the research team to shift fluidly between positions over the duration of the research.

Both insiders and outsiders will bring different perspectives, experiences and knowledge to the project. Research has stipulated outsiders working in collaboration with insiders to improve or critique practice (Herr & Anderson, 2005). A version of ‘the four squares of knowledge’ is shown below in figure 3.3 (Herr & Anderson, 2005). Over the duration of a project, the insider-outsider team can minimise the ‘unknown’ window regarding the strengths, weaknesses, and opportunities towards a project (Bartunek & Louis, 1996). The intention is for quadrant 1 the ‘arena’, to expand, reflecting the increased shared knowledge and understanding of one another’s viewpoints, in addition to learning and having an increased understanding towards the project and new knowledge.

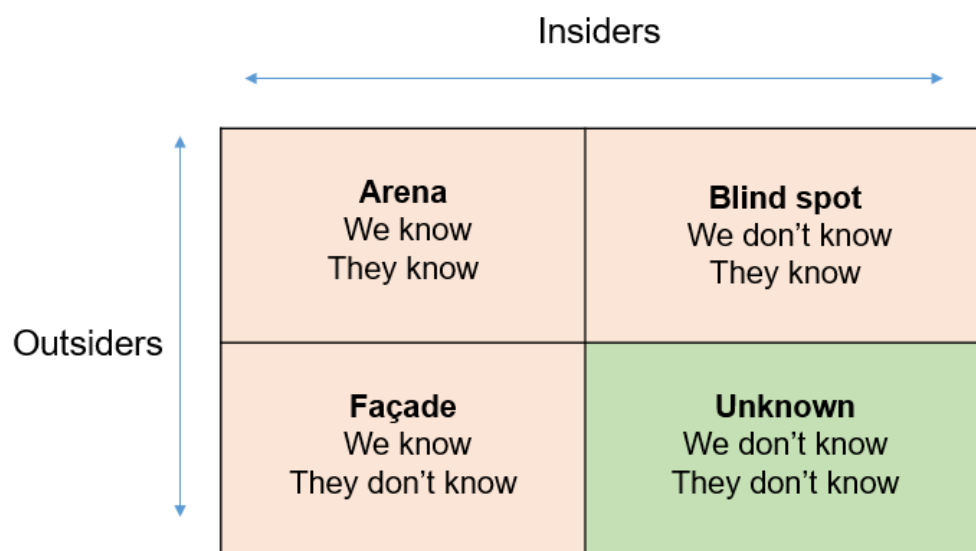


Figure 3. 3: Four squares of knowledge adapted from Herr and Anderson (2005)

Collaboration can range from simple participation to in-depth partnerships (Holter & Schwartz-Barcott, 1993). Dick (2002) refers to action being ‘more likely to be achieved if there are high levels of participation by the people involved in the research’, highlighting the importance of working collaboratively

and forming a team with people who are willing to engage and participate.

There is a need for the insider-outsider team to develop a close relationship through an organic collaboration (Oja & Smulyan, 1990), as well as establishing a research site in order to develop new knowledge (Lyngsnes 2016).

Nevertheless working in collaboration can be challenging (Goldstein, 2000).

Successful collaboration may take years as there is a need for stakeholders to meet, negotiate and build trust overtime in order to undertake AR (Herr & Anderson, 2005).

As a team, insiders and outsiders bring together their strengths to enhance a research project. For example, it was reported that outsiders experience difficulty in accessing participants (Chawla-Duggan, 2007), yet this problem can be alleviated by collaborating with an insider who is able to support the recruitment process. Through working collaboratively, everyone within the insider-outsider team can take ownership of the research. Thomas, Blacksmith and Reno (2000) have suggested that insiders experience difficulty when critically writing about their organisation, the insider-outsider team, and their own work. It could be argued that it would also be a challenge for an outsider who has moved along the continuum to become a facilitator to also critic the research, as they have developed relationships, built trust, balanced feedback and worked with stakeholders towards a common goal.

Another consideration would be the amount of time taken for quality AR projects to be undertaken (Kock, McQueen & Scott, 1997) as well as for an insider-outsider team to develop (Herr & Anderson, 2005; Thomas, Blacksmith & Reno,

2000). Undertaking AR is a lengthy process and requires effort from all involved. Herr and Anderson (2005) states that a doctoral student may be able to form an insider-outsider team if they were undertaking a pilot, but might not have the time to develop a 'full partnership'.

3.6.1 Rationale for Using Collaborative Action Research

A pragmatic approach needed to be undertaken, gradually developing a model with stakeholders alongside an existing and complex curriculum. This reflected a need to adhere to the predetermined and busy curriculum schedule, to be mindful of student and staff workloads, and be appreciative of the time it takes to collaboratively develop a feasible model. CAR was deemed a suitable methodology due to its emphasis on being a collective form of inquiry seeking to make a change as well as permitting the use of mixed methods. My values towards the research process were incorporated through CAR.

3.6.2 The PhD Insider-Outsider Team

Within this PhD, insiders refer to academics from SNaM as well as our nursing students across Exeter, Plymouth and Truro. Outsiders include myself, academics within other schools, ethic committees, the public, local projects, healthcare professionals and local organisations across Devon and Cornwall. I was fortunate to have three supervisors and two advisors to offer guidance. One supervisor would be considered an outsider as they were based within a different School offering support and expertise, while four had dual roles. For those with dual roles, as an insider they have applied and shared their knowledge of the nursing programme, with the intention of enhancing the

curriculum to further support students in their learning. However, as a supervisor or advisor they have supported me in undertaking the project. I acknowledge that it would be difficult for me to distinguish whether those with dual roles were providing feedback as an outsider or insider. Considering I would be balancing all stakeholder feedback, this was not expected to be a problem.

3.6.3 Researcher Positioning

It can be difficult for researchers to explain their position within AR (Herr & Anderson, 2005). A lack of understanding may lead to questions about the trustworthiness of the research (Gair, 2012; Herr & Anderson, 2005). Before commencing this project, I ensured I was aware of my position as a researcher, and mindful of how this could change through the duration of the project.

I have a BSc in Psychology and over four years of experience undertaking research across a range of subject areas, education, health, employment and business. Subsequently, my interest and passion for supporting people and families in using digital health, and the delivery of person-centred care has evolved. As a researcher, I am pragmatic in my approach, appreciating both quantitative and qualitative approaches to data collection and analysis. I would argue the importance of identifying and using a method(s) that best answer set research questions (Patton, 1988 as cited in *Rocco et al.*, 2003; Creswell & Plano Clark, 2011).

I acknowledge that in this piece of research, on the continuum of positionality, I was initially an outsider. Firstly, I am not from a healthcare background, and secondly, I commenced my PhD with a limited knowledge of the nursing curriculum's processes and standards. However, I brought with me my own experience of being an undergraduate, albeit a different discipline, experience of being a mixed methods researcher, enthusiasm to develop an understanding of the nursing curriculum, and an appreciation of an insider-outsider team answering set research questions.

In conjunction to initially being an outsider within the team, I also assumed the role of researcher facilitating partnerships and taking a lead in balancing feedback from stakeholders. At times, this included balancing conflicting feedback. Where this occurred, I explored comments in further detail, referred back to set research questions and discussed the next steps with stakeholders. As shown in figure 3.4, I worked with multiple stakeholders valuing all of their thoughts and suggestions. I was aware that over time my positionality would shift along the continuum towards the role of a facilitator or critical friend. However, becoming a facilitator would inevitably depend upon the rapport built with stakeholders.

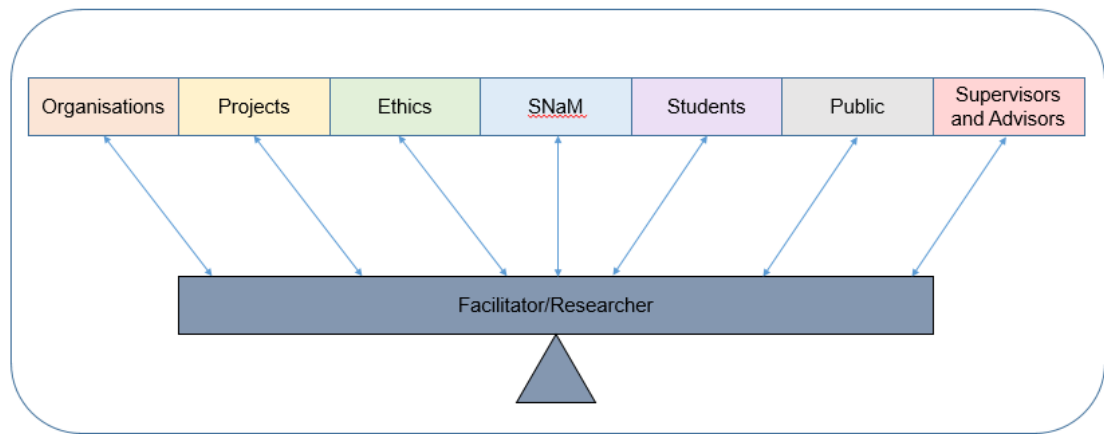


Figure 3. 4: Balancing feedback from stakeholders

3.7 Ethics in Action Research

Ethics is an integral part of research. Various codes of conduct and policies have been created to ensure researchers reflect upon the underpinning principles and conduct research in an ethical manner. The University of Plymouth's (2018) Research Ethics Policy refers to four key principles; autonomous, informed consent; openness and honesty; protection from harm; as well as confidentiality and data protection. Researchers must be au fait with the principles and obtain ethical approval. For health research, approval may be sought from a University Faculty or Health Research Authority ethics committee. This ensures the chosen approach is deemed ethical, but also authorised to take place. Researchers must adhere to the approved ethics and submit amendments if the approach were to change. This can result in ethical issues for those studies applying AR, since AR is a responsive approach.

Action researchers may decide to invite participants to take part in an entire project. This brings into question whether participants would be fully informed of

their participation and the direction of the research, especially since it is not always possible to foresee how the project will proceed cycle to cycle (Gelling & Munn-Giddings, 2011). Roles are often blurred within AR adding confusion to who is required to provide consent (Gelling & Munn-Giddings, 2011). For my PhD ethics, the applications were separated out to ensure time was allowed for reflection but also in an attempt to ensure participants were fully informed of their involvement in the study.

3.8 Mixed Methods in Action Research

AR has been negatively described as ‘consultancy’, not an approach which delivers quality research, (Atkinson, 1996 as cited in McKay & Marshall, 2000). While AR falls within various philosophical paradigms, it is disputed as a rigorous approach (McKay & Marshall, 2000; Tekin & Kotaman, 2013). Authors however have agreed that AR should not use typical and common criteria to judge the rigour of its research (Herr & Anderson, 2005; Reason & Bradbury, 2001; Waterman *et al.*, 2001). This is because AR is about creating new knowledge leading to a change, rather than focusing on the research being accepted by the scientific community.

AR guidance on how to ensure credibility has been explored (Coghlan & Brannick, 2014; Reason & Bradbury, 2001; Waterman *et al.*, 2001; Williamson, Bellman & Webster, 2012) identifying questions and strategies that can be used to ensure the research design and implementation is rigorous (Coghlan & Brannick, 2014; Reason & Bradbury, 2001). Coghlan and Brannick (2014) reflect on four strategies. This includes accurately recording the multiple cycles

to ensure transparency and auditability; reflection on the undertaking of the research and how it has challenged the thinking of both the researcher and stakeholders; contemplating how different views have been retrieved, as well as how philosophical thinking and theory underpins the research. Rather than strategies, Reason and Bradbury (2001) and Waterman *et al.* (2001) have identified questions for the researcher to answer in an attempt to guide researchers, to ensure quality in AR. Although questions can be used to assess completed projects, they can also be used to guide the implementation of research. This is comparable to CIRF, whereby Craig *et al.* (2008) summarises key components and questions for the researcher to consider in the design, development and evaluation.

3.8.1 Quality in Using Mixed Methods Research

Mixed method researchers must be cautious negotiating between different approaches (Lingard, Albert & Levinson, 2008). Authors have explored the purpose of undertaking a mixed methods approach (Greene, Caracelli & Graham, 1989; Venkatesh, Brown & Bala, 2013). It can provide a deeper understanding of a research area, which may not be fully understood using a single approach. A researcher can take an interpretative stance towards their data collection and still appreciate the value of quantitative data to enhance the findings. The integration of mixed methods can take place at any point during the research process (Fetters, Curry & Creswell, 2013), whether as part of the research design, analysis, and/or interpretation phases. However, researchers are required to resolve particular problems when using mixed methods, such as how to interpret conflicting findings (Johnson & Onnwuegbuzie, 2004).

Richards and Hallberg (2015) described mixed methods as being more than an 'ad hoc' combination of quantitative and qualitative data. Integrating two methods can provide rich and abundant data. Authors have proposed that by combining qualitative and quantitative research the necessary knowledge can be produced informing both theory and practice (Johnson & Onnwuegbuzie, 2004). Creswell and Plano Clark (2011) proposed timing (the order methods are used whether sequential or concurrently), weight (which method has a greater priority or emphasis), and how the methods are combined as key factors in designing and undertaking mixed methods. Authors have taken various approaches to mixed methods design. For example Tashakkori and Teddlie (2003) propose six designs: sequential explanatory, sequential exploratory, sequential transformative, concurrent triangulation, concurrent nest and concurrent transformative.

A recent article refers to researchers having to consider seven primary factors and a further ten secondary factors within a mixed methods research design, while reflecting on validity (Schoonenboom & Johnson, 2017). Although the factors differ between Creswell and Plano Clark (2011) and Schoonenboom and Johnson (2017) there is agreement that a mixed methods design requires the researcher to be vigilant if rigor is to be achieved. O'Cathain, Murphy and Nicholl (2008) and Creswell *et al.* (2011) suggest guidelines for researchers in reporting the quality of a mixed methods study. The guidance requires the researcher to justify the use of mixed methods, describe the purpose, priority and sequence of methods used; identify the sampling, data collection and analysis methods; detail the integration of the methods, the limitation of

methods as well as the insights from integrating the chosen methods. However, there is no standard for evaluating the rigour of mixed methods research (Eckhardt & Devon, 2017).

With regards to the concepts being used to describe rigour, quantitative approaches refer to validity (accurately measuring the concept), and reliability (consistently measuring the concept) (Heale & Twycross, 2015), with much discussion regarding the concepts being used in qualitative research. For example, Leung *et al.* (2017) argues that quantitative concepts are relevant to qualitative research; Stenbacka (2001) refers to reliability as being irrelevant as it is concerned with measurements, and Lincoln and Guba (1985) introduced the notion of trustworthiness through four key principles. Principles included: **a) credibility**, confidence in the interpretation and presentation of the findings, **b) dependability**, providing an auditable trail that is then open to scrutiny, **c) transferability**, trust in conveying outcomes to other studies, practices, or organisations, and **d) confirmability**, objectively describing the events leading to transparency. Korstjens and Moser (2018) refer to **e) reflexivity** as a final principle for qualitative research. Authors (Bryman, Becker & Sempik, 2008; Onwuegbuzie, Johnson & Collins, 2009) have suggested mixed methods research using both qualitative and quantitative concepts, with Bryman, Becker and Sempik (2008) questioning the use of Lincoln and Guba (1985) qualitative principles in particular for social policy research. O'Cathain (2010) proposed a mixed methods framework covering 44 appraisal criteria and eight domains, but this has been regarded as too lengthy. At this stage, there is no consensus as to what criteria should be used within mixed methods. For this PhD, I have

referred to criteria judging the quality of AR (Williamson, Bellman & Webster, 2012). The most important factor is how to sustain rigour within a pragmatic, AR, mixed methods approach.

Creswell and Miller (2000) have proposed strategies in which rigour can be achieved across paradigms. Ultimately, I identified strategies in order to assure quality and rigour as discussed below (Creswell & Plano Clark, 2011). The strategies are entwined for example, to successfully implement triangulation I would require knowledge of research methods and the ability to document clearly the employed approaches.

3.8.2 Researcher Knowledge

Mixed method researchers must have sufficient knowledge of both qualitative and quantitative methods thereby carefully deciding which approach to use and how the two can be suitably combined (Johnson & Onnwuegbuzie, 2004).

Without an understanding of the various designs and methods it would have been difficult for me to know how best to combine the methods and strengthen this research. A lack of understanding would have brought into question the quality. How can a researcher ensure validity, reliability, generalisability, credibility, dependability, confirmability and transferability without an understanding of the concepts and the various approaches and strategies used to enhance rigour? Although I had previous experience of undertaking mixed methods, I had to take the time to enhance my understanding and knowledge through private study and courses, as I wanted to have confidence in my ability to deliver the approach.

3.8.3 Transparent and Auditable

It is essential to provide a rich and detailed description of the processes followed within the research, leaving an auditable trail for readers to understand (Korstjens & Moser, 2018). Researchers applying a mixed methods approach must justify their choices. Within an AR mixed methods approach, transparency is vital to illustrate to readers how the methods have been integrated so they can judge the quality. O'Cathain, Murphy and Nicholl (2008) reviewed the quality of mixed methods in health services research, identifying that not all studies explained their reasons for undertaking such an approach or detailing the design, leading to a lack of transparency. This brings into question how the reader then judges the integrity of the research without being fully informed about the design and implementation. Providing a thick description enables transferability (Korstjens & Moser, 2018), as the findings can be traced back to its source.

3.8.4 Triangulation

Within social science research the word triangulation implies the use of multiple methods, whether the mixing of methods within singular or multiple paradigms (Williamson, Bellman & Webster, 2012). There are four forms of triangulation (Denzin, 1978 as cited in Creswell & Miller, 2000). Firstly, theoretical triangulation, is the use of more than one theoretical framework; methodological triangulation, is a combination of different research methods; investigator triangulation, the involvement of more than one researcher in the research process using the same technique; and data triangulation, collecting data using the same methods but from different sources, times, or participants. There are

two forms of methodological triangulation 'within' refers to data collected from within a single paradigm, and 'between' involves quantitative and qualitative approaches towards a distinct research problem (Williamson, Bellman & Webster, 2012). It is not expected that identical findings will emerge from methodological triangulation, as aspects may materialise from one data method and not in another. Triangulation is a strategy used to enhance the rigour of research (Heale & Forbes, 2013), to create a more complete picture (Williamson, Bellman & Webster, 2012), to develop the data's richness and to check the findings. Patton (2002) states that triangulation as a single method, source, or investigator does not adequately solve the problem, as multiple methods of data collection and analysis are required.

The advantages and disadvantages of using the various triangulation methods have been discussed, whereby Thurmond (2001) concludes if triangulation is used correctly the findings entirety and confirmation can be enhanced. I carefully selected triangulation strategies to ensure I had not misunderstood the data, increasing confidence in its credibility and validity (Patton, 2002).

Triangulation is not about two approaches confirming the findings but to identify inconsistencies and explore them further to create a more balanced set of findings (Patton, 2002). If a researcher identifies inconsistencies, it may be difficult to decipher what is the truth and justify which set of findings is more reliable. A limitation of triangulation is that it is time consuming, and relies on the researchers' knowledge and confidence to implement the strategy. This emphasises the importance of researchers' having the required knowledge to

ensure strategies such as triangulation are well-documented providing transparency and auditability.

3.8.5 Pilot Studies

Pilot studies provide the ideal opportunity for stakeholders to feedback on research materials and procedures, as well as enabling the researcher to reflect on the approach. Understanding the facilitators and barriers can lead to amendments to a main study with the intention of increasing its overall quality. Within this PhD, I piloted whole studies as well as particular aspects with stakeholders to enhance reliability and validity (specifically face and content validity) prior to undertaking the main study.

3.8.6 Rationale for Choosing Mixed Methods

To facilitate the successful delivery of this PhD, a mixed methods CAR approach was applied. I contemplated the best way of answering set research questions, and reflected on the most suited approaches to data collection from a participants' perspective. A synergistic approach to mixed methods uses the strengths of the different designs adding completeness to the findings. Although I needed to be cautious when integrating different methods in order to achieve rigour, the mixing of methods attained rich data and the CAR cycles lead to a greater depth of knowledge.

3.9 Data Collection Methods

This section will begin by outlining the methods theoretically, including issues and debates on their usage. In common with other AR studies, a number of

data collection methods were used within this PhD. Each method was selected after reviewing literature around their strengths and limitations. It was necessary to have a detailed understanding of the various methods prior to employing them to collect data. This next section reflects on five data collection methods, questionnaires, reflective logs, interviews, focus groups and a world café approach.

3.9.1 Questionnaires

A number of factors were considered when deciding to use questionnaires as a data collection method. For example, how will the questionnaire be distributed, how many times will respondents be invited to complete the questionnaire, how to encourage a good response rate as well as the validity of collected data.

Questionnaires can be distributed to potential respondents via email, post, face-to-face, over the phone, or using a combination of approaches. A 2008 study found response rates to online questionnaires (33%) tended to be lower than paper-based (56%) (Nulty, 2008). Visser *et al.* (1996) suggested that low response rates does not necessarily imply low validity.

Response rates may be influenced by the nature of the sample, length of the questionnaires (Galesic & Bosnjak, 2009; Saleh & Bista, 2017), the use of incentives, tailored reminders, and extending the submission date (Fan & Yan, 2010; Saleh & Bista, 2017; Van Mol, 2017). Piloting a questionnaire is necessary to estimate how long it takes to complete in addition to gaining general feedback about its language and presentation.

A mixture of open and closed questions can be used to collect quantitative and qualitative data using questionnaires. The readability and design of the questions (multiple or single choice, type of data, inclusion of positive and negative statements), and whether to use existing tools to measure impact, whether validated or not, must be carefully considered. A limitation to using a questionnaire with closed questions is that the pre-coded responses may not represent respondents' thoughts. By including a code such as 'other' within closed questions, this can provide the respondent the option of expressing their thoughts in a text box.

As part of the data collection method, it is important to consider whether participants are going to be invited to undertake a questionnaire on one occasion or multiple times. Inviting participants to participate in any research across a period of time can lead to attrition and threaten internal validity. Finally the size of the sample as well as whether the identified sample will produce representative or non-representative data needs to be carefully considered, remembering that non-representative data cannot be generalised or transferred.

3.9.2 Reflective Logs

Evidence suggests that reflections support individuals understanding and learning of practice as well as supporting the development of their critical thinking (Boud, Keogh & Walker, 1985; Coward, 2011; Jasper, 2005; Moon, 2008; Schön, 1987). There are a number of different reflection models available to support reflective writing, as it is a skill (Genor, 2015; Gibbs, 1988; Hatton & Smith, 1995). For example, Gibbs (1988) reflective cycle includes six stages

that guide individuals in their reflective writing. The stages include, description, feelings, evaluation, analysis, conclusion and action plan. Whereas Hatton and Smith (Hatton & Smith, 1995; Roja, 2016) took a different approach identifying four levels of reflective writing, descriptive writing, descriptive reflection, dialogic reflection, and critical. It could be argued that having levels of reflective writing is less important than the aim of exploring people's insights.

Reflective logs are used as an assessment method within higher education across a range of subject areas. Students studying a healthcare discipline are asked to write reflections and upload them in order to create a portfolio of work. Hatton and Smith (1995) reported that student participants can easily achieve a level of descriptive writing in comparison to dialogic or critical reflection. For reflective logs to be used as qualitative data, it is important to be aware that reflective writing is a skill. Some individuals, such as students who are new to the reflective process, may find it difficult to critically reflect (Mann, Gordon & MacLeod, 2009). It is a skill that is developed overtime (Duke & Appleton, 2000).

Advantages to using reflective logs as a research method include the researcher having the opportunity to read participants' experiences and learning; ability to analyse logs in parallel with each other; as well as data being collected overtime (Friesner & Hart 2005). On the other hand, there are limitations to using reflective logs within research, it may be hard to replicate the findings (Friesner & Hart 2005), and the context in which the reflective logs are collected must be carefully considered. For example, if the reflections were part

of a course requirement or continuing professional development it may be that the individual frames their thoughts and experience more positively, embellishing their reflection. If reflections are to be used as a data collection method, the researcher must be aware of this as a limitation.

3.9.3 Interviews

Interviews can be used as a quantitative (structured) or qualitative (unstructured) approach to data collection (Britten, 1995). There are three different types of interviews; structured, following a pre-planned topic guide; semi-structured, using a pre-planned topic guide whereby the researcher can deviate and incorporate questions to pursue an area of interest; and unstructured/in-depth, which are again less structured, allowing the researcher to explore one or two topic areas in greater detail. Qualitative interviews provide an approach to explore with participants their thoughts and experiences. They are typically described as unstructured; however, this is deceptive, as all topic guides have some form of structure (Britten, 1995). Bernard (2000) identifies seven probing techniques that can be used during interviews; these include silence, repeating, verbal agreement, expanding, lengthier questions, leading, and baiting.

Researchers must contemplate how they will conduct interviews (face-to-face, telephone, or online). Such a decision must reflect what works best for participants. For example, this project is about supporting people to use health technology, it was better to avoid online interviews as participants may lack confidence or knowledge. Davis *et al.* (2004) discussed the quality of

discussions conducted online, stating that an online interview lasted 120 minutes produced seven pages of data, while a 90 minute face-to-face interview produced 30-40 pages of data. It was important to weigh up the benefits and barriers before deciding on a how to conduct an interview.

The interviewer must consider how trust can be built between them and the participant. Creating a non-judgemental and trusting environment encourages the participant to share their thoughts and experiences, providing richer data (Watson *et al.*, 2008). Approaches can be used to build a rapport between the interviewer and the participant, for example an icebreaker whereby starting interviews with easier questions. The interviewer must consider the possibility of participants asking them questions during the interview as this could be problematic. Since a rapport is built with participants, the interviewer sharing their thoughts and experiences could influence the collected data, yet not answering may affect their rapport (Britten, 1995). This is something I was aware of prior to my data collection, but decided I would not know what approach to take until I was asked.

Morse and Field (1996) identified the potential pitfalls of interviewing, from the researcher being unable to manage their own nerves to moving around the topic areas too quickly and therefore not drawing out as much detail or depth from the participant. I was aware of the various pitfalls prior to the interviews. After each interview I took time to reflect on what I did well and how I might improve my technique.

3.9.4 Focus Groups

Focus groups are a qualitative data collection method used to explore the thoughts and experiences of a group of people towards a particular topic. They can be undertaken face-to-face or virtually. The emphasis is placed on the interaction and discussion between participants, rather than between the participants and the researcher (Bender & Ewbank, 1994; Walton, Childs & Blenkinsop, 2005). There is a need for the researcher to consider the participants' individual differences, as well as group and environmental factors (Stewart & Shamdasani, 2015) while planning and undertaking the research. The researcher must have the skills and ability to manage the group dynamics and to facilitate in-depth discussions by asking open-ended questions (Watson *et al.*, 2008). It is good practice for the researcher to reflect on their approach after every focus group.

The literature has identified the strengths and weaknesses of undertaking focus groups (Bloor *et al.*, 2001; Morgan, 1997; Stewart & Shamdasani, 2015). This data collection method allowed me to collect numerous viewpoints within a short space of time about a selected topic. Participants had the opportunity to comment on one another's thoughts and experiences, whether they were in agreement or not, prompting each other and building richer responses. In focus groups we preferably want participants to interact just as they would outside of a research setting. This is more likely if participants are familiar with one another prior to the focus group.

However, focus groups can be difficult to organise. Hague and Jackson (1987) emphasised the importance of focus groups being convenient for participants. This is not easily organised as participants may have busy schedules, making it difficult for a convenient time and location to be arranged.

Researchers undertaking focus groups have less control than individual interviews (Jackson, 1998). Choosing focus groups as a research method requires careful consideration towards individual differences and group dynamics. Researchers must encourage quieter participants to voice their thoughts if willing, manage disruptive participants, and ensure the conversation is not dominated by one individual so that all participants contribute as much as they want within the discussion. Well-managed group dynamics can lead to unexpected directions, enhancing the findings (Webb & Kevern, 2001). Watson *et al.* (2008) states that through careful planning weaknesses of focus groups can be avoided.

The size of a focus groups has been discussed at length in the literature stating that focus groups can be anything between 3 and 14 persons who have been gathered together to discuss a topic (Bloor *et al.*, 2001; Gill *et al.*, 2008; Krueger & Casey, 2009; Stewart & Shamdasani, 2015). Fundamentally, the size of focus groups impacts on the data collected. Too large a group may cause difficulties for the researcher in facilitating the group as well as not providing adequate time for all participants to discuss their thoughts (Bloor *et al.*, 2001). Small focus groups have been deemed to be successful in particular circumstances; however they may lead to limited discussions and risk being cancelled if only

two participants attend (Bloor *et al.*, 2001). The size and the number of focus groups can very much depend on the initial recruitment and the number of persons attending.

3.9.5 World Café Approach

The world café approach is a method used to explore and generate new ideas and connections, to problem solve, as well as share learning and experiences amongst a large group of stakeholders towards a common goal (The World Café Community, 2015). There are seven principles to follow including: setting the context; creating a welcoming space; exploring questions that matter; encouraging contribution from all stakeholders; cross-pollinating and connecting diverse perspectives; listening together for patterns and insights, and harvesting discoveries (Brown & Isaacs, 2005). The intention is for a large group of stakeholders to hear and/or read about a particular topic, as well as be introduced to the concept of world café before breaking off into smaller groups for further discussions. Each group is tasked with exploring their thoughts towards a set of questions around the introduced topic. The questions can either be the same or different across the groups.

Discussions within the smaller groups are captured verbally and through attendees writing on the provided paper tablecloths. This approach intends to gain participation from all stakeholders (The World Café Community, 2015), giving those with less confidence the chance to have their voice heard. After a short duration, stakeholders are given the chance to move to a new table whereby they can read and contribute to written comments, as well as continue

to share their thoughts verbally. Prior to ending the discussions, stakeholders are asked if they would like to share any insights from their conversations and are encouraged to make any final notes on the tablecloths.

The approach can be adapted depending on the number of attendees, number of facilitators, purpose, topic, and venue. The world café approach is comparable to a knowledge café, the key difference being that a knowledge café has no facilitator. As part of the world café approach a certain level of facilitation is required (The World Café Community, 2015), for example a facilitator at each group or a facilitator that moves across groups to ensure set questions are explored.

3.10 Data Analysis Methods

Both quantitative and qualitative analysis approaches were used to analyse data within this PhD. Quantitative analysis approaches were applied to analyse quantitative data and thematic analysis for qualitative data.

3.10.1 Quantitative Analysis

Quantitative data either falls within the realms of being categorical or numerical. For this PhD I have used categorical variables, which included collecting nominal and ordinal data. The data was cleaned prior to undertaking a univariate analysis. Basic descriptives were calculated within SPSS, followed by tables and figures in Excel to present the findings.

Nominal data originated from questions where labels did not have a quantitative value for example 'yes, I like that as an idea'. In these cases the frequencies and the distribution of percentages in each category were calculated. A combination of tables and bar charts were created in Excel to present the data and support the analysis. Bar charts present percentages; this is where I calculated proportions as percentages on a question-by-question basis. Ordinal data included the use of Likert scales. Basic descriptives were calculated to show central tendencies (mode, mean). Four or five point Likert scales were typically presented using stacked bar charts; this was of benefit as it facilitated the visualisation of the data. Shades of green symbolise agreement levels, shades of orange signifies disagreement and yellow represents 'don't know'.

3.10.2 Thematic Analysis

Qualitative data can be analysed rigorously using qualitative or quantitative analysis methods. Qualitative analysis approaches include but are not limited to thematic analysis, discourse analysis, and interpretative phenomenology, whereas content analysis can be used as a quantitative approach and is comparable to thematic analysis. Within my PhD qualitative data was collected from participants to explore their thoughts towards a particular idea or experience. Subsequently thematic analysis was considered an appropriate approach, as I was not intending to analyse the language and the context of which comments were made, nor was I exploring a persons lived experience.

In 2006, Braun and Clarke (2006) developed a researcher guide to using thematic analysis. The guide described thematic analysis, the advantages and pitfalls as well as how to undertake the process ensuring it remains a flexible

approach. Braun and Clarke (2006) refer to two pathways, an inductive thematic approach being driven by the data, and a deductive thematic approach whereby data fits into pre-conceived themes or a coding frame (Boyatzis, 1998).

An inductive thematic analysis was used to analyse qualitative data collected via workshops, reflective logs, interviews and focus groups, ensuring I was led by the data (Braun & Clarke, 2006). Braun and Clarke's six phases were followed. Firstly I familiarised myself with the data captured by repeatedly listening to or reading over the transcripts to immerse myself in the data. I constantly referred back to the research questions as part of this process. I created memos to record my initial thoughts as well as to reflect on the similarities and disparities. I ensured I immersed myself in the data, prior to generating codes as part of the second phase. Each set of data was coded and double checked to make certain each code truthfully reflected the captured data. Key themes were identified, defined and refined. The themes were also continuously reviewed to ensure they accurately represented the coded data. I predominately undertook my analysis within NVivo, a data management tool which supported the sorting and organising of my data. Investigator triangulation was applied, whereby a second researcher would independently code either all or a proportion of the collected data. This was to ensure the data was not misinterpreted and free more researcher bias. We reached an agreement on any discrepancies.

I was aware of the pitfalls in undertaking a thematic analysis prior to my analysis (Braun & Clarke, 2006). Pitfalls include the researcher not making

sense of the data, using the initial research questions as the themes, allowing too much of an overlap between themes, the themes not representing the collected data and a mismatch between the research questions and analysis.

3.11 Summary

A CAR mixed methods approach was applied, valuing both qualitative and quantitative methods. I appreciate there are strengths and limitations to my chosen approach and have employed strategies to ensure rigour of the research. Chapter four outlines the employed research methods, whereby I describe the research methods (recruitment, procedure, data collection, analysis) for each of the cycles, including any used strategies to provide readers with a transparent overview.

Chapter Four: Research Methods

4.1 Introduction

In this chapter, I outline the various data collection methods used within three CAR cycles. The first cycle focused on the development of a feasible model with stakeholders and piloted first-year nursing students supporting beneficiaries to use a health website. The second cycle developed and trialled a home-visit model with adult nursing students supporting citizens' to use a health website. While a third cycle explored two models simultaneously, a home-visit with child nursing students and a general model where students linked with local organisations and projects to support others in using digital health. Both models contributed to the development of the Digital Health Champion (DHC) scheme.

4.2 Collaborative Action Research Method

A CAR approach has been applied. A total of three cycles were undertaken (figure 4.1). Each cycle consisted of four phases, constructing and planning, implementation, evaluation, and reflection. Stakeholders were encouraged to reflect and share their thoughts with me throughout the phases and cycles, working together to develop a feasible and sustainable model for all involved.

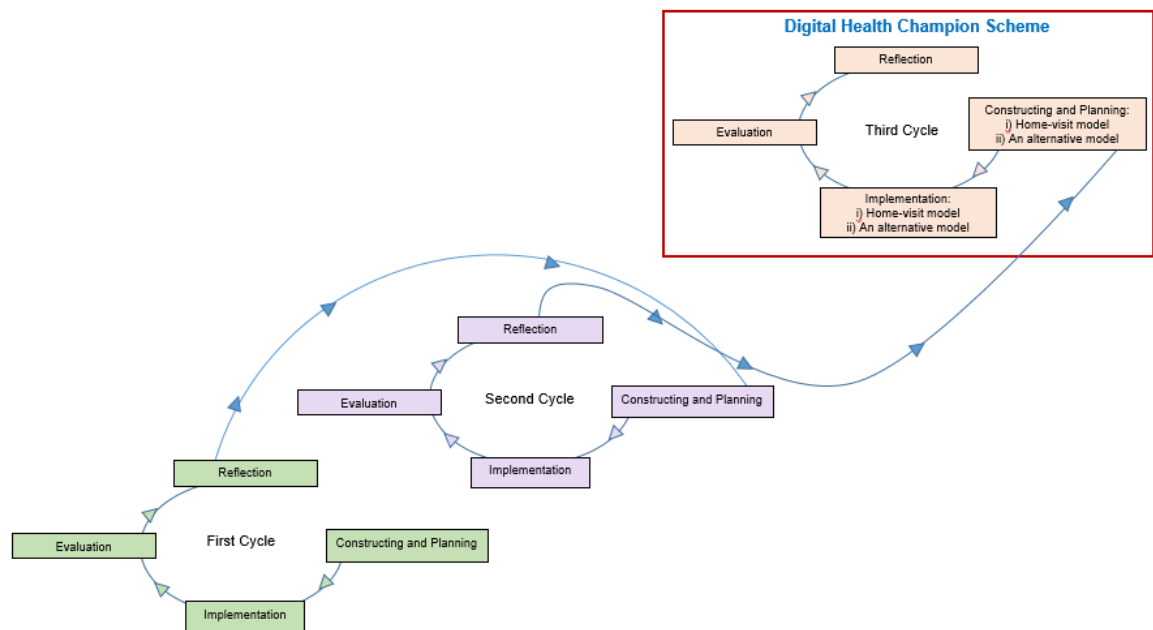


Figure 4. 1: Three collaborative action research cycles

Within this PhD stakeholders could become participants and/or collaborators. Participant responses were collected via ethically approved data collection methods and classified as data. Over the duration of the project five ethic applications were approved, four via the University of Plymouth's Faculty of Health and Human Sciences Ethics Committee and one via the NHS Research Ethics Committee (REC). Separating out the ethic applications provided sufficient time for me to analyse collected data and to reflect on the findings with collaborators. Collaborators were stakeholders working with me to support the creation of training and data collection tools, as well as reflecting on collected findings and informally discussing the development of a feasible model. No ethical approval was obtained as no data was collected. Discussions with collaborators were captured in meeting notes.

There were occasions within my PhD where stakeholders would move between the realms of being a participant and a collaborator. Not all participants would become collaborators, although all were welcomed. This required me to be explicit in how feedback would inform the research. It could be argued that those participants raising concerns towards my approach may not have wanted to become collaborators, causing a bias. This is why it was important to formally capture data from stakeholders as participants giving them the opportunity to share their thoughts, in addition to working with them as collaborators. Data collected from participants, and discussions with collaborators drove the research forward.

One group of stakeholders shifted from being collaborators to participants. In this case students were invited to feed into a models development before taking part in the trial as a participant. It could be argued that the collected data from student participants is bias as they may have wanted a model to succeed influencing their feedback. Although the move from a collaborator to a participant did occur this was infrequent.

The following figure (4.2) illustrates the timeline for the three CAR cycles. The first cycle is presented in green, the second cycle in purple and the third in orange. It was typical for a cycle to commence before the completion of a previous cycle. This was partly due to aligning the research within the existing curriculum and the students' timetable. For example, within the first cycle a pilot study was undertaken with first-year nursing students to support beneficiaries in using a health website. This took place in November 2016 as it fell within a

particular module. To undertake the full study I had to wait for the following year, of which the second cycle had already commenced.

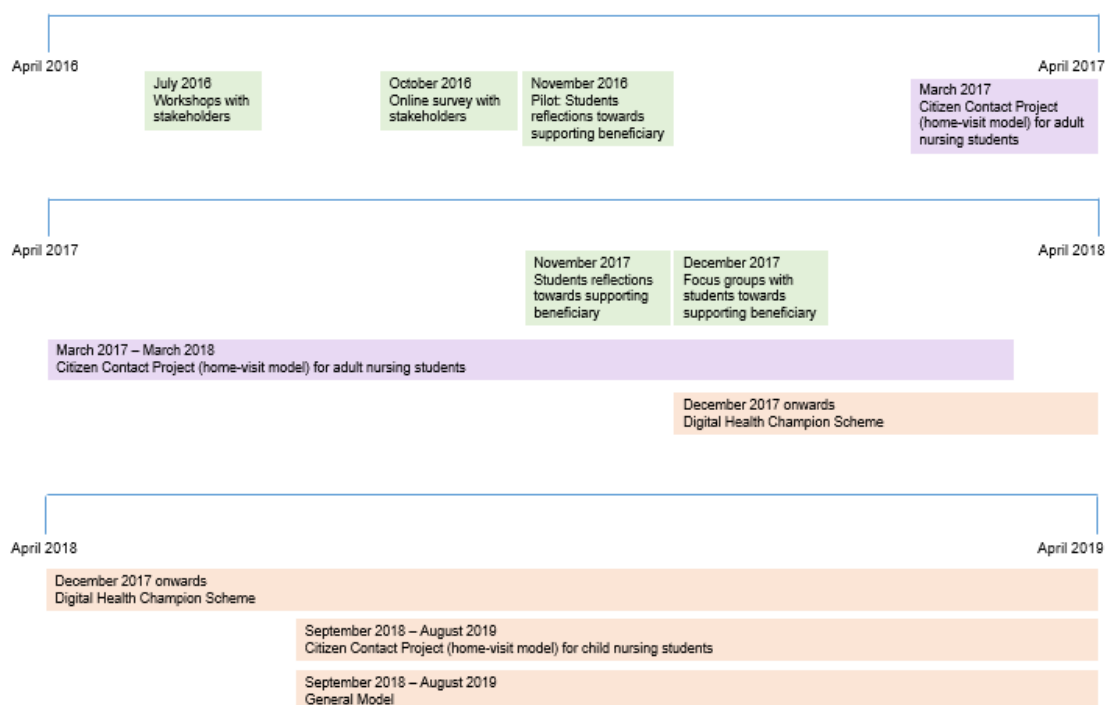


Figure 4. 2: Collaborative action research timeline

4.3 First Cycle

4.3.1 Introduction

This first cycle focused on developing a feasible model with stakeholders to enable large numbers of nursing students the chance to become agents of change and support their local community as part of the nursing curriculum. The cycle aimed to explore with stakeholders their thoughts towards the proposed idea, before constructing and trialling a model, identifying ways to overcome potential methodological issues including recruitment, retention, and data collection. This cycle mainly feeds into my first research question, commencing our exploration towards the structure of a feasible model. The benefits of this

model were briefly investigated as part of this cycle contributing knowledge towards the second research question.

4.3.2 Constructing and Planning Phase

There are two key aims:

- To explore stakeholders' views towards the proposed approach, thinking specifically about the potential benefits, concerns and any recommendations they might have.
- To work with stakeholders to develop a proposal that overcomes raised concerns and is feasible.

4.3.2.1 Participants

A total of 157 individuals registered to attend the 'Patients and Students Working Together Conference' held in July 2016. Attendees were allocated to one of six workshops. Workshops had representation from all types of stakeholders (students, health professionals, academics with and outside of SNaM, and the public). Every workshop was assigned an experienced facilitator and a scribe to record verbal comments.

After the conference, an online questionnaire was developed and piloted with selected stakeholders (insider-outsider team). The questionnaire was distributed via email to 134 registered conference attendees and 103 members of staff in SNaM (nursing academics, midwifery academics and administrators).

4.3.2.2 Procedure

Adverts for the conference were distributed via email by the conference lead and the Patients Association. The public, students, health professionals and academics were invited to attend the conference and were asked to register via Eventbrite (a ticket management website). The conference was a collaboration between the University of Plymouth, the Patients Association and NHS England to discuss how students across healthcare disciplines, based at the University of Plymouth have engaged with service users. An hour of the conference was dedicated to exploring the idea of nursing students supporting local communities to use digital health as part of the nursing curriculum's WPE. All attendees were provided with conference packs upon arrival. The pack included a participant information sheet and draft leaflets, which informed attendees of the study.

Following the conference, those who registered to attend and SNaM staff were invited to take part in an online questionnaire. The decision was taken to forward the questionnaire via email to all SNaM staff as it was important to invite all to feed into a models development if they so wished. Although midwifery staff and administrators may not have found the questionnaire of relevance, it was important for them to be aware of the research as I would be presenting findings and continuing to discuss a model with them as part of School Away Days. Survey Monkey was used to create the questionnaire, it was emailed to stakeholders and was live for one month. Reminder emails were sent out to improve response rates (McPeake, Bateson & O'Neill, 2014; Nulty, 2008).

4.3.2.3 Ethics

Ethical approval was obtained from the University of Plymouth's Faculty of Health and Human Sciences Ethics Committee to deliver workshops as part of a conference event, followed by an online questionnaire with stakeholders to explore the idea of students supporting local communities (see appendix 1 for the approval letter). Key ethic research principles were addressed ensuring good research practice.

Inviting conference attendees to take part in research was considered carefully. Conference attendees were informed of the study via email prior to attending the conference as this may have influenced their decision to attend the event. On arrival, attendees were provided with a conference pack, which contained the study's participant information sheet providing details around the key ethical principles. The study was introduced to all attendees verbally as part of the conference drawing everyone's attention to the information sheet and asking them to read the details prior to deciding whether they would like to participate in the breakout groups. Attendees were given the opportunity to ask me any questions about the study in the mid-morning coffee break before taking part in the breakout groups in the afternoon. Those not wishing to participate were invited to have an extended coffee break. Written consent was obtained from participants as the beginning of each breakout group. Participants were informed that an online survey was likely to follow to further explore themes identified within the breakout groups.

Those taking part in the online survey were provided details about the study. Implied consent was captured whereby participants were asked to tick a statement to confirm they had read the required information and were willing to take part. Participants were informed that by submitting their survey responses they were consenting for their data to be used within my PhD. Submitted surveys could not be withdrawn as no identifiable data was collected. This was made clear to participants and was meant to encourage stakeholders to be sincere in their responses.

4.3.2.4 Data Collection

A ‘world café’ approach (Fouche & Light, 2010) was used to collect data from conference workshops. A convenience sampling was employed. Half way through the workshop participants were invited to move to a new seat next to individuals they had not yet spoken to. Each workshop was presented with the following questions.

Table 4. 1: Workshop questions

Timings	Guide
10 minutes	Show a short video on the proposed community attachments.
10 minutes	From listening to the video on the proposed community attachments and from reading the draft recruitment leaflets, what do you understand from the proposed project?
10 minutes	What if any, are the benefits for those taking part?
Participants will be asked to change seats and to sit next to individuals they have not yet spoken to.	
10 minutes	What concerns might students/volunteers/University/School have about the project?
5 minutes	Would the intervention be perceived as worthwhile by students/volunteers/University/School?
5 minutes	How should we assess outcomes?
Finish	To bring discussions to a close. Thank attendees for their participation and valued comments.

Two months after the conference an online questionnaire was disseminated using convenience sampling. The questionnaire was split into four sections; 1) information about the participant (three closed questions), 2) how to address raised concerns (eight closed and six open-ended questions), 3) benefits of nursing students supporting local communities to use digital health (three closed questions listing 13 statements and one open-ended question) and 4) final comments (one open ended). The questionnaire lasted no longer than 20 minutes with potential participants being informed at the offset. Not all questions were deemed as relevant for all participants, therefore routing was employed in the questionnaire (see appendix 2).

4.3.2.5 Creation of Data Collection Tools

The workshop topic guides and questions were developed through discussions with collaborators. It was agreed a short video would be shown to introduce participants to the topic, followed by a series of questions exploring perceived concerns and benefits.

Through a sequential exploratory design the workshop themes were presented back to stakeholders via an online questionnaire that was split into two key sections. The first part of the online questionnaire explored in more detail via a mixture of quantitative and qualitative questions, stakeholders' thoughts towards raised concerns. The workshop findings identified eight concerns of which five were further explored within the online questionnaire (table 4.2). It was not possible to explore all eight concerns. Proposed solutions had been developed with collaborators towards five of the concerns. These were presented to

participants through the questionnaire. Participants were asked to identify a statement that most aligned with their thinking as to whether the proposed solution addressed a raised concern, as well as being invited to suggest any alternative approaches via open-ended questions. The findings from this phase were constantly referred to, ensuring our model was always attempting to address raised concerns.

Table 4. 2: Raised concerns presented as questions

Workshop theme: Raised concerns	Proposed Solution	Questions
1) Increased workload for students	Not explored within the questionnaire.	Not explored within the questionnaire.
2) Increased workload for staff	Not explored within the questionnaire.	Not explored within the questionnaire.
3a) Safeguarding issues for both citizen contacts and students: home-visits	<p>Stakeholders have mixed views towards the prospect of students visiting a citizen contact in their home. We propose:</p> <ul style="list-style-type: none"> • Students to work in groups of five. Each student would pair up with a different member of their group and visit a citizen contact together. • Two students would visit a citizen contact either in their home or another non-clinical setting (depending on the contact's preference). • Students to be provided with guidelines and a checklist to remind them of safety procedures (for themselves and for the citizen) every time they go to visit a citizen contact. • Students to log in and out to record their visit. If students fail to log in or at an appropriate time after initiating a visit, the system will send them (a) a text reminder, (b) a phone call with a recorded message, (c) will phone the other students in their group to investigate, (d) will phone the volunteer SNaM coordinator. 	<p>Which of the following statements best describes your thoughts towards the above suggestion?</p> <ul style="list-style-type: none"> • I think students' safety would be adequately addressed with the above suggestions. • I have some concerns about students' safety but despite this I do not think these are reasons to stop the proposed inclusion of citizen contacts. • I have major concerns about student safety and I do not think introducing citizen contacts as an approach should proceed unless changes are made to address them. • I have major concerns about student safety that I think are impossible to deal with. <p>Do you have any comments you would like to make about the proposed approach? (open-ended)</p>

<p>3b) Safeguarding issues for both citizen contacts and students: structure of the home-visits</p>	<p>The project proposes that the students visit with a citizen contact would include:</p> <ul style="list-style-type: none"> • 20 minutes - Initial greetings and exchange of names. Students would remind the citizen contact about the expectations of the meeting and check that they have seen and read the further information leaflet. Students would also remind them that they, as students, cannot give any clinical advice. • 30 minutes - Students would ask the citizen contact if they have a long-term condition, how that affects their life and what contacts they have with the health and social services. The citizen contact would tell students about their condition. The students are expected to take turns in asking or prompting the volunteer. While one student talks/listens the other can make notes. The main point of this contact would be for students to hear the volunteers 'story' and learn from it, giving them the chance to ask questions about things they do not understand. • 30 minutes - Students would signpost citizen contacts to reliable information and good quality information. Additional details were provided in the previous question. • 10 minutes - Students remind the citizen contact that they have 90 minutes and bring the conversation to a polite and logical conclusion. The students would remind the citizen contact about the confidentiality of the data collected and that they will be in contact again in about 5-6 months. 	<p>Which of the following statements best describes your thoughts?</p> <ul style="list-style-type: none"> • I think the content and structure of the visit is appropriate. • I have some concerns about the content and structure of the visit but despite this I do not think these are reasons to stop the proposed inclusion of citizen contacts in the new curriculum. • I have major concerns about the content and structure of the visit and I do not think the proposed inclusion of citizen contacts in the new curriculum should proceed unless changes are made to address them. • I have major concerns about the content and structure of the visit and think that they are impossible to deal with and the approach should be abandoned <p>Do you have any comments you would like to make? (open-ended)</p>
<p>3c) Safeguarding issues for both citizen</p>	<p>Stakeholders have raised concerns about how students would manage in a traumatic situation such as a citizen contact requiring urgent medical care or students being held in the</p>	<p>Which of the following statements best describe your thoughts towards this proposal?</p>

contacts and students: traumatic situations	volunteers home against their will. The project is considering the possibility of students having a device that can be used quickly and discreetly to raise the alarm in the case of an emergency, as well as guidance on how to manage these situations within their role and how to access support.	<ul style="list-style-type: none"> • I think students would be able to manage in a traumatic situation if the above suggestions were in place. • I have some concerns about how students would manage in a traumatic situation but despite this I do not think these are reasons to stop the proposed inclusion of citizen contacts. • I have major concerns about how students would manage in a traumatic situation and do not think the proposed approach should proceed unless changes have been made. • I have major concerns about how students would manage in a traumatic situation that I think are impossible to overcome. <p>Do you have any comments you would like to make about the proposed approach? (open-ended)</p>
3d) Safeguarding issues for both citizen contacts and students: students ability to signpost websites	<p>The project proposes that two students visit a citizen contact taking approximately 90 minutes. The next couple of questions will explore your thoughts towards the proposed content and structure of this visit. As part of the visit students would tell the citizen contact about the following aspects, all of which have been taught in their course through Digital Professionalism and Wider Patient Engagement:</p> <ul style="list-style-type: none"> • Patient Participation Groups and the contact details of the citizen contacts group; 	<p>To what extent do you think students' signposting a citizen contact to the above information is useful for the citizen contact (very useful, quite useful, not very useful, not at all useful).</p> <p>Which of the following statements best describes your thoughts towards students' signposting volunteers to information?</p>

	<ul style="list-style-type: none"> • Show the citizen contact their GP website and its functionality. For example, look at their practice website to see if they can get repeat prescriptions, and if they have the right to see their medical records; • Tell the citizen contact about the Patients Association and Healthwatch and show the websites; • - Show websites for Patient Opinion (which is a patient feedback website), Healthtalk Online (where people talk about their long-term conditions), NHS Choices (which gives a wide range of approved information), NICE (which gives guidelines for approved treatments), and one relevant good quality charity website for their long-term condition. 	<ul style="list-style-type: none"> • I think students should be able to signpost citizen contacts to relevant health services, support groups and information on reliable websites as part of their role. • I have some concerns about students' signposting citizen contacts to information but despite this I do not think these are reasons to stop the proposed inclusion of citizen contacts in the new curriculum. • I have major concerns about students' signposting citizen contacts to information and I do not think the proposed inclusion of citizen contacts in the new curriculum should proceed unless changes are made to address them. • I have major concerns about students' signposting citizen contacts to information that I think are impossible to deal with and the approach should be abandoned. <p>Do you have any comments you would like to make about the visit? (open-ended)</p>
4) Not having sufficient time for students and citizen contacts to build a rapport	Concerns have been raised about students and citizen contacts having sufficient time within the project to build a rapport, but at the same time avoiding citizen contacts from becoming dependent on students. The project proposes students working in groups of five, and each student would pair up with a different member of their group and visit a citizen contact together. Each student	<p>To what extent do you agree or disagree with the following statements about the above approach (Strongly agree, agree, disagree, strongly disagree).</p> <ul style="list-style-type: none"> • There is not enough time for students to build a rapport with each citizen contact.

	<p>would visit four citizen contacts. The project would take each student a total of 30 hours. This will include two 90-minute visits (i.e. a total of 3 hours) with each of the four citizen contacts (a total of 12 hours). The remaining 18 hours comprises of travel (8 hours) and writing up reflective logs (10 hours).</p>	<ul style="list-style-type: none"> • Four contacts per student would be too many. • Citizen contacts will develop an unhealthy dependence on the students. • A sufficient amount of time is dedicated to writing a reflective log. <p>How could the approach be built into the new adult nursing curriculum?</p> <ul style="list-style-type: none"> • Deduct 30 hours from placements and use this time to deliver the approach. • Build the approach in as an obligatory element of an existing module. • Have approach 'free float' as part of the Wider Patient Engagement. • Create a new module, which would include the proposed citizen contacts and Widening Patient Engagement. <p>Do you have any comments you would like to make about this suggested approach? (open-ended)</p>
5) Difficulty recruiting sufficient numbers of citizen contacts and students.	<p>The School of Nursing and Midwifery teaches approximately 400 second-year adult nursing students each year; if the project were to introduce community involvement into the curriculum, a total of 800 citizen contacts would be required to meet demand. Stakeholders were concerned that the project would not be able to recruit a sufficient number of citizen contacts. The project proposes to recruit citizen contacts via social media, TV, the</p>	<p>Which of the following statements best describe your thoughts the proposed recruitment method?</p> <ul style="list-style-type: none"> • I think recruiting citizen contacts via mass media would be an appropriate recruitment method.

	<p>wider community in Devon and Cornwall via the press, and leaflets through service user organisations such as Patients Association, Patient Participation Groups, Healthwatch and other charities. This recruitment method would reach a large audience quickly and recruit sufficient numbers of citizen contacts. Although this approach would not screen citizen contacts; other procedures would be in place to safeguard students and citizen contact. The University would have responsibility for safety and safeguarding.</p>	<ul style="list-style-type: none"> • I have some concerns about citizen contacts being recruited via mass media but despite this I do not think these are reasons to stop this proposed approach. • I have major concerns about citizen contacts being recruited via mass media and I do not think the proposed inclusion of citizen contacts in the new curriculum should proceed unless changes have been made. • I have major concerns about citizen contacts being recruited via mass media that I think are impossible to overcome. <p>Do you have any comments you would like to make about the above recruitment methods? (open-ended)</p>
6) Maintaining confidentiality and being able to share information	Not explored within the questionnaire.	Not explored within the questionnaire.
7) Payment of travel expenses	Not explored within the questionnaire.	Not explored within the questionnaire.
8) Ensuring citizen contacts and students benefit from the activity	Not explored within the questionnaire.	Not explored within the questionnaire.

The second section of the questionnaire presented to stakeholders perceived benefits in a series of 13 statements. Participants were invited to rate the extent they agreed or disagreed with each statement. The aim was to share with participants the perceived benefits raised within the workshops, and quantify the extent participants felt a model would be of benefit to students, service users, the university and the local community. The workshops identified that stakeholders believed there were potential benefits whereas the online questionnaire was able to confirm the extent.

Table 4. 3: Identified benefits presented as questions

Workshop theme: Perceived benefits	Question: To what extent do you agree or disagree that introducing community involvement into the new adult nursing curriculum would have the following benefits to: (strongly agree, agree, disagree, strongly disagree)
Nursing students:	
Improve students' communication skills.	The approach could improve students' communication skills.
Improve students' confidence.	The approach could improve students' confidence.
Understand the thoughts and experiences of citizen contacts.	Students could better understand the thoughts and experiences of people living with long-term conditions.
Learn how people live and manage with long-term physical conditions.	Students could learn how people live and manage with their long-term conditions.
Develop students' person centred skills.	Students could develop person centred skills.
Citizen contacts:	
Therapeutic for the citizen contact.	It would be therapeutic for citizen contacts to talk to students about their conditions and life experiences.
Supports citizen contacts unable to leave their home.	The approach engages with 'patients' who might not be able to leave their homes.
Learn about online health services.	Citizen contacts could learn about available health services.

Opportunity for citizen contacts to share their lived experience.	The approach gives people who are often 'receivers' of services the opportunity to contribute as experts by lived experience to the education of nursing students.
The university and the community:	
Minimise stereotypes.	The approach could minimise stereotypes.
Students spend more time in the community.	The approach could increase the amount of time students spend in the community.
Strengthen the link between the university and the community.	The approach could bring the university and the community closer together.
The activity is a unique selling point for the university.	This could be a unique selling point for the university.

4.3.2.6 Data Analysis

An inductive thematic analysis was used to analyse the six workshops (Braun & Clarke, 2006). Firstly, I coded the data across the six tablecloths, followed by the scribes' notes. I then reviewed the coding and identified key themes overarching the data collection methods (see appendix 3 for NVivo analysis). Subsequently the identified themes were viewed concurrently using 'within' methodological triangulation to verify the themes (figure 4.3). This approach was used to increase validity of the findings and reduce researcher bias (Watson *et al.*, 2008). Identified themes were used to create an online questionnaire.

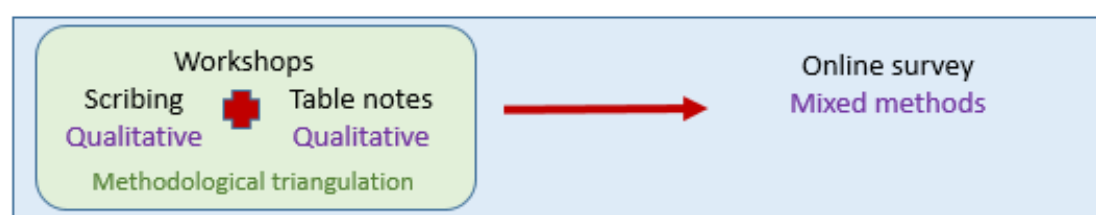


Figure 4. 3: A sequential exploratory design used within the first cycle's constructing and planning phase

The online questionnaire consisted of 14 closed questions, both ordinal and nominal data was collected. The data was downloaded into SPSS whereby the data was cleaned. For nominal data, frequencies and percentage distributions were calculated. Tables and figures were created to help visualise the data. Percentages for each category of response were presented on a question by question basis. Percentages were rounded to the closest integer, which may have led to rounding errors. With regards to the analysis of ordinal data captured through Likert type questions, basic descriptives were calculated to understand central tendencies. Four point Likert response scales were used. Participants were invited to answer eight open-ended questions, commenting on the five proposed solutions, to identify any further benefits as well as capturing final comments. Open-ended questions were initially coded in Excel prior to the identification of themes. This was an iterative process. The themes were then viewed alongside the findings from the quantitative analysis leading to a greater understanding of the results.

Findings from the constructing and planning phase were presented back to SNaM staff in December 2016 at a School Away Day, to further explore their thoughts, encourage reflection and identify the next steps. A combination of tables, figures and comments were presented. I ensured comments reflected a range of views, for example where participants rated a statement to varying agreement levels I chose comments to represent each rating.

4.3.3 Implementation Phase

This phase focused on exploring the benefits and barriers of students supporting beneficiaries (people known to the students) to use a health website. This approach removed any concerns raised identified in the constructing and planning phase allowing an exploration of the benefits and barriers experienced by students.

This phase aimed to:

- Pilot the idea of students supporting a beneficiary to use a health website, without addressing raised concerns from the constructing and planning phase.
- Identify approaches used by students to discuss and demonstrate a health website.
- Explore the benefits experienced, if any, by students.
- Explore the barriers experienced, if any, by students.

4.3.3.1 Pilot Study

First-year nursing students from the 2016 September cohort were invited to choose between one of three assessments to undertake as part of their 'Ways of Knowing Module' (which included lectures in DP). One of the assessments, invited students to discuss and demonstrate a health website to an older relative, friend, or neighbour. The chosen websites were identified as quality and reliable health and wellbeing websites, which were introduced as part of a Digital Professionalism lecture. The question was brief providing students the chance to make their own decisions of how to demonstrate and discuss a health

website. The question was; discuss and demonstrate digital health to an older relative, friend, or neighbour. Write 400 words reflecting on your experience of showing someone how to:

1. find and use their GP website,
2. look at and add their own comments on Care Opinion (formerly known as Patient Opinion),
3. use the NHS Choices website,
4. use the Healthtalk Online website,
5. use Skype to see and talk to family or friends, or
6. use FaceTime to see and talk to family or friends.

Subsequent to the assessment, students were contacted and asked for their permission for me to use and analyse their reflective logs, as well as inviting them to participate in a focus group. The reflective logs were analysed using an inductive thematic analysis (Braun & Clarke, 2006).

This pilot informed the undertaking of a full study with first-year nursing students in November 2017. The next section provides details of the activity, as there were slight changes to the approach.

4.3.3.2 Participants

For the full study a convenience sample of all first-year nursing students (n=473) from the September 2017 cohort demonstrated a health website to a beneficiary. This was part of their 'Ways of Knowing Module' assessment.

Students could have chosen to complete an alternative assessment if they so wished.

4.3.3.3 Procedure

Following on from the pilot, all first-year nursing students were invited to introduce one of six websites to a beneficiary. Websites remained the same as in the pilot study. As part of the assessment, students were asked to take a picture from behind the beneficiary's head, with their consent, and to share the photo with the Digital Professionalism lead. The photo with their written reflection provided evidence of students undertaking the activity. The photo was not used for research purposes, but was intended to encourage students to be sincere.

4.3.3.4 Ethics

Ethical approval was obtained via the University of Plymouth's Faculty Ethics Committee to analyse first-year nursing students' reflective logs, and to undertake focus groups to explore their experience of supporting beneficiaries in using the internet for health (see appendix 4 for the approval letter).

Students were invited to answer a short online questionnaire to share their learning. The questionnaire was disseminated by the module lead, and as part of the questionnaire students were reminded of my PhD and how I hoped to use their reflections as data, if they gave permission. The questionnaire asked students whether they would consent to their lecturer anonymising their reflections and having them shared with me to be analysed. The lecturer only

forwarded reflective logs where a student had given permission within the questionnaire. A further question was asked to explore whether any students would be interested in taking part in a focus group to share their experience. It was made clear that the name and email address of those willing to take part in a focus group would be shared with me. However, I would not be able to link an individual to their reflection. Written consent was obtained from students on the day of the focus group.

Obtaining consent from students was approached carefully. This was so students understood that this was their choice and not a compulsory part of the module. It was made clear that not providing consent and withdrawing would not affect their studies or relationship with the University of Plymouth.

4.3.3.5 Data Collection

At the end of the module, students were invited to complete an online questionnaire via Survey Monkey to reflect on their experience. Students were given four weeks to reflect on the module and to submit their responses. The questionnaire was predominantly designed by the Digital Professionalism lead. Reflective questions relating to this study were designed by myself. Within the online questionnaire, a small section explored students' thoughts towards discussing and demonstrating a health website with a beneficiary. To support students in writing their reflection, six questions were provided to aid first-year students:

1. Who did you talk to?

2. Which of the six websites did you choose to demonstrate to a beneficiary?
3. Please explain why this website (up to 100 words).
4. On reflection, what do you think worked well or not so well in demonstrating and discussing your chosen health website (up to 200 words)?
5. If any, what knowledge and skills have you used or developed as part of this 'Citizen Interaction' task (up to 200 words)?
6. Would you be interested in attending a focus group to further explore your thoughts and experience of discussing and demonstrating a health website?

Word counts were incorporated to encourage students to write more than one sentence, and to prevent students from writing lengthy essays.

After the online questionnaire, five semi-structured focus groups were organised inviting students across fields (child, adult, mental health) and locations (Exeter, Truro, Plymouth) to share their thoughts and experiences of introducing a health website, as well as to evoke their thoughts towards supporting local communities in using health websites as part of WPE. Liaising with academics across the sites ensured the focus groups were organised at a convenient time for students to participate. A total of two focus groups and two face-to-face interviews were undertaken (see appendix 5 for the topic guide).

4.3.3.6 Creation of Data Collection Tools

Both the reflective logs and the follow-up (focus group and interview) topic guides were created with an aim of exploring whether students learnt and/or benefited from taking part in the activity. Questions were comparable across both data collection methods. The main difference was the focus group and interview topic guides also explored students' thoughts towards the notion of nursing students supporting local communities to use the internet for health. As this idea had been explored with stakeholders within the constructing and planning phase, I presented an amended model to students before asking them to think about and discuss the perceived benefits and potential concerns. Suggestions on how to improve the proposed approach were welcomed.

4.3.3.7 Data Analysis

Initially 37 reflections were identified using a stratified sampling method taking into consideration two variables, the students' programme and study location. Reflections were assigned identification numbers. Using a formula within Excel, I was able to identify reflections abiding by the sampling breakdown (table 4.4). I paid particular attention to the length of the reflections, as some students wrote a few sentences while others wrote paragraphs.

Table 4. 4: Stratified sampling of student reflections

Programme and Location	Number of reflections	Number for sampling
Adult Nursing Exeter	71	7
Adult Nursing Truro	130	13
Adult Nursing Plymouth	67	7

Child Nursing Plymouth	48	5
Mental Health Nursing Plymouth	55	5
Total	371	37

Thirty-seven reflective logs were initially analysed using inductive thematic analysis. Investigator triangulation was applied whereby two researchers independently coded the sample and identified themes before sharing their findings with each other. As we agreed with the themes identified, I continued to code the remaining reflections applying the same approach.

Subsequently face-to-face focus groups and interviews took place to encourage students to reflect on their learning as well as any perceived benefits and limitations. This provided students the chance to discuss their experience in further detail. Students were also invited to share their thoughts towards the notion of supporting local communities in using a health website. An inductive approach ensured I was guided by the data (Braun & Clarke, 2006). Investigator triangulation was again applied whereby two researchers independently coded the focus groups and interviews identifying key themes. Discussions were then had to ensure we were in agreement and led by the data.

Following both sets of data collection a 'within' methodological triangulation was applied (figure 4.4). This is where I reviewed the themes across the reflective logs and the follow-ups (focus groups and interviews) to explore any commonalities and contradictions. It was expected that new themes would be

identified in the follow-up as questions explored the idea of students supporting communities.

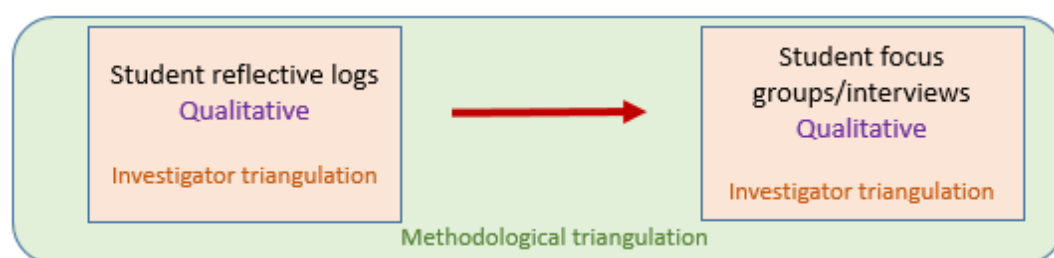


Figure 4. 4: Research design for the first cycle's implementation phase

4.3.4 Evaluation Phase

For this phase, I reflected on the recruitment of participants, the use of data collection and analysis methods, as well as my own positioning within the research. I wanted to learn from the phases, and understand what worked well as well as what factors influenced the findings.

4.3.5 Reflection Phase

Discussions towards the development of a feasible model were held via School Away Days, presentations and meetings with various stakeholders. I reflected on and balanced stakeholders' feedback, amending the model accordingly.

4.3.6 Summary

This first cycle explored with multiple stakeholders the notion of nursing students supporting others to use health websites. This took the form of workshops and an online survey within the constructing and planning phase. Workshops were an appropriate starting point as it provided large numbers of

stakeholders the chance to openly share their thoughts and discuss the idea of students supporting local communities to use digital health. A sequential exploratory design was applied to add depth and to enhance the rigour of the research. The workshop findings informed the creation of an online survey used to verify the findings and further explore stakeholder feedback.

As there was general consensus from the constructing and planning phase that the idea of nursing students supporting others to use the internet for health was a good idea, the findings were used to develop a pilot activity whereby students supported a family member, friend or neighbour within the implementation phase as part of a module activity. The activity was developed removing any raised concerns and focused on the extent students benefited from supporting others. Within the implementation phase I took a qualitative position whereby I collected data sequentially via reflective logs and then focus groups. This is because the reflective logs would provide an insight to the students learning, and the focus groups would provide an opportunity for 'within triangulation' whereby creating a more complete picture (Williamson, Bellman & Webster, 2012).

The evaluation and reflection phases enabled collaborators to reflect on the findings across the cycle and develop a home-visit model that would address raised concerns ready to be trialled within the next cycle. As a collaborative approach, stakeholder feedback was balanced in order to understand how future cycles would take place (Atkins & Murphy, 1994). Even after completing this cycle, together we continuously referred back to the findings to ensure

future cycles addressed raised concerns, and to explore whether any recommendations could be incorporated. The next cycle trialled a home-visit model with adult nursing students exploring its feasibility and the benefits to participants. A second cycle would build upon the findings from this cycle leading to a greater understanding of the project and actionable knowledge (Dick, 2002).

4.4 Second Cycle

4.4.1 Introduction

This cycle trialled and developed a home-visit model for adult nursing students, titled the 'Citizen Contact Project'. This title was chosen as recruited service users and carers participating in the project were known as citizen contacts. A home-visit model was continuously reviewed and amended as part of the CAR approach. This cycle builds upon the findings from the first cycle, continuing to develop a feasible model with stakeholders as well as exploring the benefits to both students and citizen contacts. The intention was to advance our understanding and ability to answer the first and second research questions.

4.4.2 Constructing and Planning Phase

The constructing and planning phase intended to:

- Develop materials and data collection tools for a home-visit model with stakeholders.
- For my colleagues and I to trial the developed home-visit model and amend accordingly.

4.4.2.1 Collaborators

I worked collaboratively with a range of stakeholders (insiders, outsiders and those with dual roles) to develop needed materials and data collection tools. Stakeholders continued to feed into the development of a home-visit model informing the recruitment methods, and safeguarding procedures.

4.4.2.2 Procedure

As shown in figure 4.5, collaborators' fed back their thoughts towards the project materials (training scenarios, training presentation for students, information sheets for students and citizen contacts) and data collection tools (the citizen contact questionnaires).

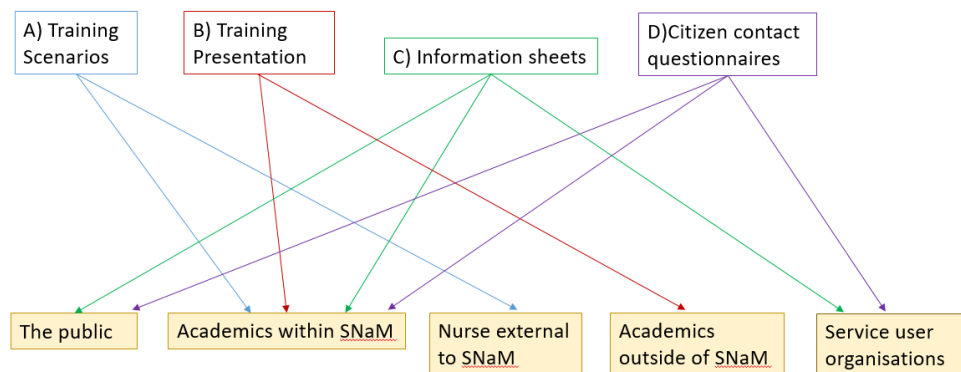


Figure 4. 5: Collaborators' informing the development of project materials and tools

A) There was a need to develop a number of scenarios to support students in thinking about how they would manage certain situations, if they arose on their visits. Proposed scenarios were emailed to selected academics within SNaM (insiders and those with dual roles) as well as a paper version to a nurse external to SNaM (outsider) asking for feedback. A total of seven scenarios

were developed and included as part of the students training. Scenarios covered what to do and/or say:

1. in a medical situation,
2. if no one answered the door,
3. if students felt trapped,
4. if students needed to raise a concern,
5. if students were asked for medical advice,
6. if there was an aggressive situation, and
7. if students were asked personal questions and/or offered food and drink.

B) The training reinforced taught modules within the nursing programme, topics included first aid, digital professionalism, person-centredness as well as covering additional content concerning a home-visit model. Additional content included learning about their roles and responsibilities as well as others, risk assessment, understanding the safeguarding procedures, and how to access support. The presentation was developed with selected academics within SNaM (both insiders and those with dual roles), and an academic from the Marine School (outsider) who shared their experience of organising off-site visits.

Active learning was embedded into the training session, rather than having a passive lecture where I would talk at the students, I used role-play techniques and group discussions to encourage student participation and increase their engagement (Leicester Learning Institute, n.d.; University College London, n.d.). I incorporated four role-play activities within the training to ensure students were actively involved and given the opportunity to reflect on the

presentation. Biggs and Tang (2007) discuss teaching methods and levels of engagement, whereby learning activities support students in working towards and achieving intended learning outcomes without discrimination to their level. The learning activities I created not only intended to support students in reaching set outcomes but also to maintain their engagement.

C) Information sheets for both students and citizen contacts were created to inform them about the project. The documents were printed and given out to five members of the public to read and feedback their thoughts. In addition to this, Age UK Plymouth received copies of the citizen contacts information sheets to review, while selected academics within SNaM (insiders and those with dual roles) were asked to comment on the student information sheets.

D) A total of three citizen contact questionnaires were created. Each of the questionnaires were printed and given out to five members of the public to read and to feedback their thoughts. Copies of the questionnaires were emailed to the Assistant Director of Age UK Plymouth as well as those with dual roles for feedback. This ensured the language used was appropriate and understandable. Questionnaires were amended to reflect stakeholder feedback.

In addition to the development of project materials and data collection tools. I invited two PhD colleagues with healthcare backgrounds to support the trialling of this model, ensuring the procedures and structure worked. Both colleagues completed the same training provided to students. My colleagues and I reflected on the process identifying what worked well and what could be improved, amending this model in advance of student visits.

4.4.3 Implementation Phase

Within this phase, students and citizen contacts were recruited as pioneers to trial the Citizen Contact Project's home-visit model. As agents of change, participants fed into the development of a feasible model for students to support local communities to use digital health.

This phase intended to:

- Explore whether the proposed home-visit model was feasible and to whom (students, citizen contacts, SNaM, organisations).
- Explore how this model could continue after the completion of my PhD. As part of this, explore whether this model could be embedded into the nursing curriculum.
- Explore the benefits, if any, experienced by students and citizen contacts participating in a home-visit model.
- Explore the barriers, if any, experienced by students and citizen contacts participating in a home-visit model.

4.4.3.1 Participants and Collaborators

A partnership with Age UK Plymouth was developed. The Executive Board of Age UK Plymouth agreed to the project after seeing the proposal, as it was in line with their aims and objectives. I then presented to Age UK Plymouth staff (two home support worker team leaders and two administrators) to inform them of the project, its aims, data collection methods and how they could support the project. Age UK Plymouth screened potential citizen contacts and ensured the home had been risked assessed prior to the organisation of student visits. I

worked with Age UK Plymouth staff to formalise a suitable recruitment method, and agreed that I would update the organisation about organised visits. The plan was to start-off small working with Age UK Plymouth and to work with additional organisations if a model was perceived to be feasible.

The idea of developing a home-visit model was also discussed with Plymouth Libraries who are part of UK Online Centres. If citizen contacts had not had their home risk assessed, or if they preferred, the student could support them in using the internet for health in their local library. This was agreed by myself and a lead at Plymouth Libraries.

Participants included service users accessing Age UK Plymouth's homes care support service (n=270) and second-year adult nursing students from the 2015 February cohort (n=93). This cohort of students were chosen after in-depth discussions with insiders and those with dual roles.

4.4.3.2 Procedure

The recruitment of students and citizen contacts happened simultaneously to ensure there was an adequate number of students to support citizen contacts and vice versa. There were contingency plans in place in case too few students or citizen contacts were recruited. For example, if a situation arose where there were not enough students to support the recruited citizen contacts, my colleagues and I would then take on the role. If too many students were recruited, I would attempt to identify and recruit additional citizen contacts, or reduce the number of citizen contact students would support.

Recruitment of Students

A presentation was given as part of a course lecture to second-year adult nursing students (cohort February 2015). Following this, an email was sent on my behalf to remind students of the project. A pdf file of a leaflet and the presentation was attached to the email, identifying the potential benefits and inviting them to attend a three hour training session with a free lunch. A convenience sampling was applied, whereby those interested in taking part were invited to contact me. A number of sessions were made available to students to ensure everyone had the opportunity to take part if they wished. Through consultation with academic staff, dates and times were identified. Students had to undertake the training in order to volunteer and support citizen contacts. All students had valid and current disclosure barring service checks in place.

As part of the training, students were invited to verbalise their thoughts towards the approach, as well as given the opportunity to anonymously feedback on the proposed home-visit model and training session. Each student was provided with a training pack to support them in their role. This included a copy of the training presentation, a safety checklist, a prompt sheet with a list of potential questions for the student to ask the citizen contact, a feedback form, a student consent form as well as questionnaires and pre-paid envelopes for their citizen contacts.

Recruitment of Citizen Contacts

A convenience sample was identified by Age UK Plymouth. Age UK Plymouth invited all 270 service users who accessed their home care support to participate. A cover letter and leaflet were posted to service users as part of the organisations April monthly invoicing. The leaflets readability level was 59.3, calculated using the Flesch Reading Ease. Those interested completed a short questionnaire (on the back page of the received leaflet) and forwarded their responses to Age UK Plymouth in a pre-paid envelope. Potential participants could return their response either by post or through their Age UK Plymouth homecare support worker.

The homecare support workers asked service users as part of their visits whether they were aware of the project and if they were interested in being involved. Homecare staff were provided with paper copies of the cover letter and leaflet to give to residents if needed. If service users were interested, home support staff supported them to complete and forward the short questionnaire to ensure they met set criteria (had internet access, lived with at least one long-term physical condition). As part of the questionnaire, service users had to provide Age UK Plymouth permission to forward me their contact details, as I would contact them to organise the student visits.

Structure of a Home-Visit Model

The citizen contact decided on the location of the visit. They were given a choice of three non-clinical settings, a local library, local café or in their home. It was envisaged that students would visit their citizen contacts twice, once in the

first few months of starting the second-year of their degree and again five-six months later. It was proposed that students would work in groups of three. Each student would pair up with a different member of their group to visit an allocated citizen contact. Every student would have a maximum of two citizen contacts to visit. Students living in close proximity would be partnered together to help reduce travel. The time taken to be involved in the project came from the students WPE days; this was confirmed and agreed by field leads. Students were able to use their written reflections as evidence towards their WPE. The first visit provided students with the opportunity to hear citizen narratives and learn from them, providing them the chance to ask questions. This was followed by students' signposting citizen contacts to reliable good quality websites, all of which had been taught in their course or training session. In the second visit, students summarised the previous visit and explored what had happened or changed since, concerning the individual's health and use of websites.

Kitestring was explored as a safeguarding approach to provide students the chance to sign in and out of the home-visits. This was a personal safety service, which was offered via text messaging. All interaction with Kitestring was encrypted over 'https', using the same encryption technology used by banks. Kitestring securely stores personal details. Students were asked to sign up to the service, the only details that were required was their name and mobile number. If a student did not log out in time, I was contacted by Kitestring whereby I then contacted the students. If the student was uncontactable, I had

the emergency services and the university security number ready. The approached was agreed by students as part of the training.

Students and citizen contacts were encouraged throughout the project to forward their feedback to me. The project was not 'done to' participants but 'done with' participants. I provided the following opportunities for participants to feedback their thoughts:

- A summative evaluation was created to enable students the chance to feedback their comments towards a home-visit model and the provided training session. Their comments led to the development of this model (for this cycle) and the training session (in preparation for the next CAR cycle).
- I contacted students after every visit to ensure they had the opportunity to feedback any concerns or suggestions.
- I had regular contact with Age UK Plymouth to ensure any concerns or comments raised by citizen contacts were acknowledged and amendments were made accordingly.

4.4.3.3 Ethics

Ethical approval was obtained via the University of Plymouth's Faculty of Health and Human Sciences Ethics Committee (see appendix 6 for the approval letter). The study aimed to pilot adult nursing students supporting citizen contacts in using the internet for health. A training session was delivered to students informing them of the study, their involvement and the different forms of data collection. The training session verbally inform students how the research would

adhere to ethical principles. Students were invited to ask questions and were encouraged to read the provided information in their own time before deciding whether they would like to take part. Those students willing to take part in the study were asked to complete a consent form provided to them in their training packs and to return it to me using a pre-paid envelope. It was made clear that students' decision to not participate or later withdraw would not influence their studies or relationship with the university. Following the home-visits, students were invited to take part in an interview to share their experiences. Consent was captured in advance of the interview as well as asking students to confirm their willingness on audio.

With regards to citizen contacts, a cover letter and an information leaflet was forwarded to potential participants via Age UK Plymouth. It was made clear that deciding not to participate or later withdrawing would not impact on their level of care, or relationship with either Age UK Plymouth or the university. Those interested in participating were invited to read the information sheet, and asked to consent to participating in a home-visit activity as well as for collected data to be analysed and used as part of my PhD. When organising each home-visit I would confirm over the phone with the citizen contact their interest to take part, and ensured they had the opportunity to ask any questions. Although citizens were informed at the start of the study that they would be invited to participate in an interview following the home-visits, consent was obtained closer to the interview date and reaffirmed at the start of the recording.

4.4.3.4 Data Collection

Data was collected across two groups of participants (n=5 citizen contacts, and n=2 students) using various data collection methods (figure 4.6).

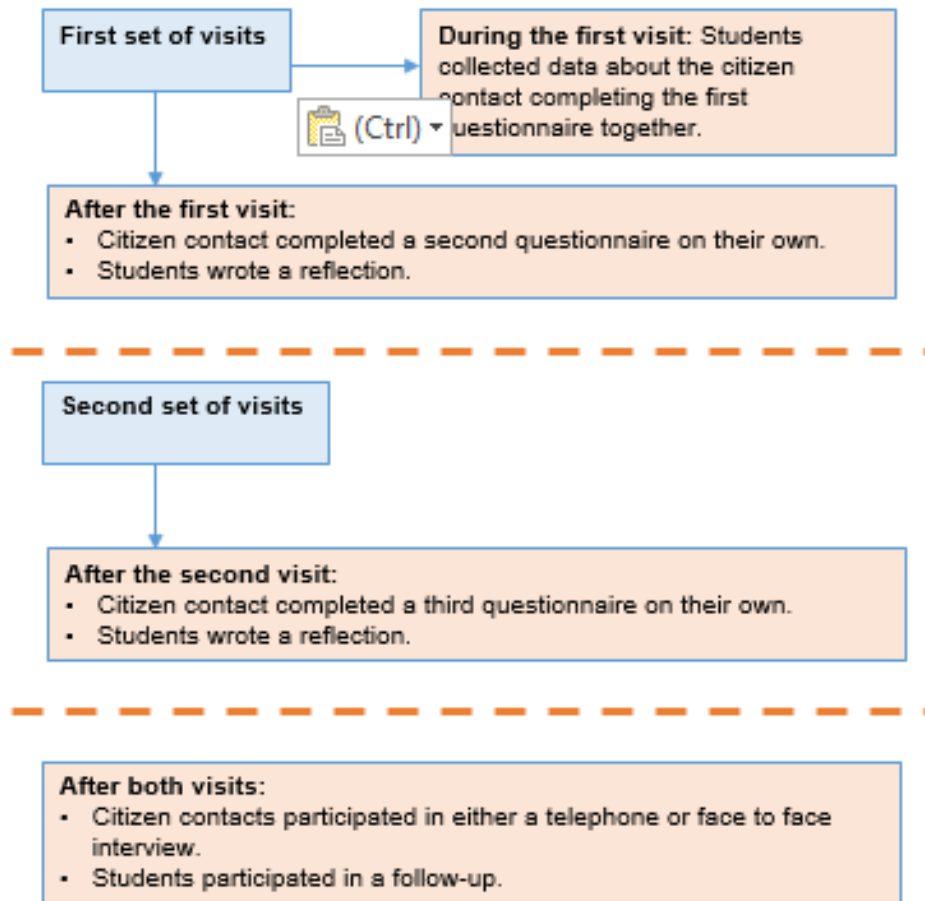


Figure 4. 6: Data collection methods used within a home-visit model

Citizen contact's first questionnaire completed during first visit (see appendix 7): During the first visit, students completed with their citizen contact a short questionnaire to assess their use of the internet for health. The questionnaire consisted of two open-ended and three closed questions. Questions explored whether the citizen contact were aware of, used and/or been in contact with seven different health websites. Comment boxes were used as a means to record the person's long-terms conditions and to capture

any other health websites, such as national charities that they may have been in contact with. The intention was for students to use the questionnaire as a tool to be able to tailor their support. After the visit, the completed questionnaire was forwarded in a pre-paid envelope to me by the visiting students. Questions included:

- What long-term physical condition(s) do you live with? (open ended)
- Have you ever heard of the following? (Yes I have, No I have not)
 - GP 'Patient Participation Groups'
 - The Patients Association
 - Healthwatch
 - National Institute for Clinical Excellence (NICE)
 - Care Opinion
 - NHS website
 - Healthtalk Online
- Have you ever used or been in contact with any of the following (Yes I have, No I have not)?
 - GP 'Patient Participation Groups'
 - The Patients Association
 - Healthwatch
 - National Institute for Clinical Excellence (NICE)
 - Care Opinion
 - NHS website
 - Healthtalk Online
- Have you ever used your GP website for the following (Yes I have, No I have not, My GP doesn't offer this)?

- To access general information
- To access your GP prescription
- To access your medical record
- What health charity websites, if any, have you visited or been in contact with? (open ended)

Citizen contact questionnaires completed after each visit (see appendix

7): After the first visit, students left the citizen contact with a questionnaire to complete in their own time. The questionnaire consisted of two closed and four open-ended questions about their experience. The completed questionnaire was sealed and posted to me in a pre-paid envelope.

- What, if anything, have you learnt from today's visit? (open-ended)
- How did you find talking with our two nursing students? (open-ended)
- Do you have any comments you would like to share? (open-ended)

After the second visit, citizen contacts completed a third and final questionnaire. A total of four closed and four open-ended questions were asked. The questionnaire was predominately made up of questions from previous questionnaires. Two additional questions were asked. One captured whether an individual would like to continue being a citizen contact, the other asked whether citizen contacts were willing to take part in an interview to explore their thoughts towards the project. It was made clear that all citizen contacts were invited to take part in an interview to share their experiences, and were informed that by deciding not to participate, this would not affect their

relationship with either Age UK Plymouth or the University of Plymouth. The questions included:

- Since your first visit from our nursing students have you used or visited any of the following (Yes I have, No I have not)?
 - GP 'Patient Participation Groups'
 - The Patients Association
 - Healthwatch
 - National Institute for Clinical Excellence (NICE)
 - Care Opinion
 - NHS website
 - Healthtalk Online
- Since your first visit from our nursing students have you used your GP website for (Yes I have, No I have not, My GP doesn't offer this)?
 - Accessing general information
 - Accessing your GP prescription
 - Accessing your medical record
- Since your first visit from our nursing students, have you visited any charity websites relating to your long-term condition(s)? (open-ended)
- What, if anything, have you learnt from today's visit? (open-ended)
- How did you find talking with our two nursing students? (open-ended)
- Do you have any comments you would like to share? (open-ended)
- Would you be happy to be contacted by Toni Page (by telephone) about your experience, and explore how the project could be improved? (Yes, No)
- Would you be interested in continuing to be a citizen contact? (Yes, No)

Student reflections: Students were invited to write a reflection, answering two questions. The first question encouraged students to reflect on the citizen contacts narrative while the second asked students to reflect on their own experience and learning. A word limit was attached to each question to guide students on how much to write. I wanted to prevent students from writing an essay about their experience but encourage them to write more than a couple of sentences. I was flexible regarding students word limit, reminding them that this was not an assessment. If students wanted their reflections to be included as part of their online portfolio for WPE, they were asked to include references, although this was not essential requirement for this research. Asking students to write a reflection about their experience was felt to be an appropriate data collection method. Not only would I be able to collect and analyse the reflections as data, but also students are familiar with the format of writing reflections and it would provide students the opportunity to develop their portfolio. Reflections were written by students after each visit.

Interviews with citizen contacts after both visits: Semi-structured interviews were completed with willing citizen contacts in order to understand what they perceived to be the benefits and challenges, as well as ways in which they believed the approach could be improved (see appendix 8 for topic guide). I had originally hoped to undertake a minimum of seven interviews but understood that this depended on the number of recruited citizen contacts. The interviews were audio recorded with the citizen contacts permission. The following questions were included:

Learning and benefits

- Would you say that you have benefited at all from taking part in this study? If so how?
- Thinking about your experiences, what would you say were your key learning points if any?

Feasibility and improvements

- As a citizen contact what do you think has worked well (please think about the recruitment process, completing of questionnaires, the visits)?
- Have you experienced any problems taking part in this study? This includes any difficulties experienced during the recruitment process, the visits, and/or completing the questionnaires.
- How, if at all, do you think the project could be improved?

Worthwhile

- Did you find the experience worthwhile? What part of the experience did you find worthwhile? Why do you think that?
- Would you recommend a friend, neighbour or family member to become a citizen contact? Why do you think that?

Closing

- Do you have any final comments you would like to make about your role as a citizen contact or any of the questions I have asked today?

Student follow-up: Once undertaking the visits, students were invited to take part in a follow-up with me to discuss their experiences, and to explore whether they perceived the pilot as being feasible for all second-year nursing students. I audio recorded the follow-up with the students' permission. It was hoped that a focus group would be conducted but understood that this depended on the number of recruited students. If focus groups were not possible, interviews were undertaken (see appendix 9 for topic guide). The following questions were asked:

Learning points and benefits

- Thinking about your experiences in visiting your citizen contacts, what would you say are your key learning points?
- In what ways if any, have you benefited from taking part in this study? Why do you think that?
- How, if at all, do you think citizen contacts have benefited from this study? Why do you think that?

Feasibility and improvements

- Thinking about your overall experience in taking part in this study (this includes the recruitment process, training, completing reflective logs, visiting citizen contacts) what do think has worked well?
- Have you experienced any difficulties in taking part in this study, this includes any difficulties during the recruitment process, training, completing reflective logs, and/or visiting citizen contacts?
- In what ways if any, could the pilot be improved?

Worthwhile

- Thinking about your experiences in visiting citizen contacts, would you recommend other second-year adult nursing students to take part? Why do you think that?
- We are thinking of introducing this study to all second-year adult nursing students. What are your thoughts towards this?

4.4.3.5 Creation of Data Collection Tools

Citizen contact data collection:

Questionnaires were made up of a combination of closed and open-ended questions. Closed questions explored the citizen contacts' use of particular health websites. The websites had been carefully chosen by reflecting back to the first cycle's constructing and planning phase. Stakeholders wanted students to signpost citizen contacts using a set list of websites to avoid them recommending unreliable health websites. The list was created by identifying websites introduced as part of an existing DP lecture and had already informed the activity in the first cycle's implementation phase.

Open-ended questions focused on the citizen contacts' experience and learning from the home-visits. The questions were shared with collaborators to check the structure and language used. The interview topic guide also explored with citizen contacts their experience, gaining their thoughts to towards the recruitment process, the home-visits, data collection methods and to discuss the next steps.

Student data collection: A similar approach to the first cycle's implementation phase was taken; this is because previous qualitative data collection methods worked sufficiently. The reflective logs and the interview topic guide both focused on the students learning, any perceived benefits to themselves and to the citizen contact. The face-to-face interviews also explored what worked well and not so well, in addition to how the project could be improved for future students.

4.4.3.6 Data Analysis

Citizen contact data collection: Closed questions used categorical variables to collect nominal data. Since the questionnaires were paper-based, the data was inputted into Excel and questionnaires safely stored in a locked cabinet. Each set of questionnaires were analysed as they were collected. The frequencies were calculated and then used to create tables and figures within Excel to assist in visualising the results. With regards to open-ended questions, the responses were inputted into Excel and coded. Themes were then identified. Once all three questionnaires were analysed, the data was viewed together to explore whether responses had changed overtime.

Following this, all citizen contacts were invited to take part in an interview whether by phone or face-to-face. The audio recordings were transcribed and analysed in NVivo using inductive thematic analysis. I analysed citizen contacts' questionnaires prior to commencing the interview to ensure I was able to ask questions that would confirm my understanding of their feedback, as well as further explore their thoughts and experiences of being a citizen contact.

Methodological triangulation was employed to strengthen the quality of the findings for data collected from citizen contacts. Figure 4.7 shows the chosen research approach.

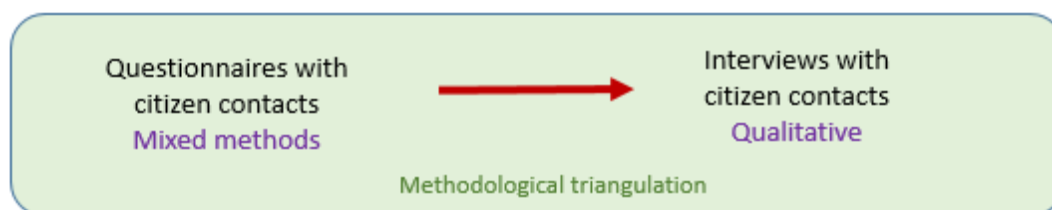


Figure 4. 7: Research design for the second cycle's implementation phase for citizen contacts

Student data collection: The reflective logs and interviews were analysed using an inductive thematic analysis to ensure I was guided by the participants' thoughts (Braun & Clarke, 2006). A similar approach to the analysis had been used within the first cycle's implementation phase. However, a key difference was that within this phase I did not apply investigator triangulation. The data was collected sequentially, I first collected and analysed the reflective logs identifying key themes. Following the completion of the face-to-face interviews, I transcribed the audio recordings and analysed them to ascertain their themes. A 'within' methodological triangulation was then applied (figure 4.8), this is where I reviewed the themes across both data collection methods to explore any commonalities and to identify any contradictions.

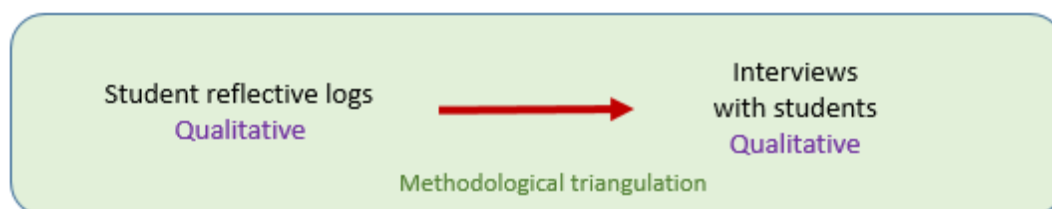


Figure 4. 8: Research design for the second cycle's implementation phase for students

4.4.4 Evaluation Phase

Within this phase, I reviewed how the research was undertaken. Not only did I develop an understanding of what worked well but also how the research could be improved, reflecting on the recruitment of participants, the structure of a home-visit model, data collection methods and the analysis. Furthermore, I reflected on how the insider-outsider team had developed, and whether their positioning and/or mine had changed within the research.

4.4.5 Reflection Phase

Discussions were held with key stakeholders regarding the findings. We explored how a home-visit model could be adapted to ensure it was feasible and sustainable for all involved. This phase took place both informally and formally. Following discussions, I reflected on and balanced stakeholders' feedback before amending our model, driving the research forward in an agreed direction.

4.4.6 Summary

The second cycle focused on developing and trialling a feasible model, whereby nursing students could support local communities to use the internet for health. The findings from the first cycle were reflected on as part of this cycle's constructing and planning phase, and used to inform the development of a home-visit model. This model was trialled as part of the cycle's implementation phase, responding to stakeholder feedback. Following this, the evaluation and reflection phases provided collaborators the chance to discuss the findings, informing the next cycle. The data collection methods and analysis applied

within this cycle would remain the same for the third cycle's home-visit model. This is because the data collection methods were deemed suitable by participants, but also the use of mixed methods strengthened the findings not only identifying commonalities but also new knowledge.

A third cycle would continue to explore the feasibility of a home-visit model with third-year child nursing students supporting families. The approach to recruitment would slightly alter in an attempt to encourage more students to participate. In addition to a home-visit model, the third cycle would explore the development of a second model (a general model) offering students the chance to support local communities via local projects and organisations. This conclusion was drawn after reviewing the findings. Developing a second model would offer students multiple opportunities to become involved.

4.5 Third Cycle

4.5.1 Introduction

This cycle continued to explore the feasibility of implementing a home-visit model, providing child nursing students the chance to support and understand families in a social context. I simultaneously explored a general model whereby students link with local organisations and projects to provide support in a wide range of settings. In addition to developing a feasible model, this third cycle focused on the sustainability and integration of a model into the nursing curriculum, contributing towards my third research question.

Figure 4.9 shows that alongside the development of two models, I developed the DHC scheme, in an attempt to encompass all findings and feedback.

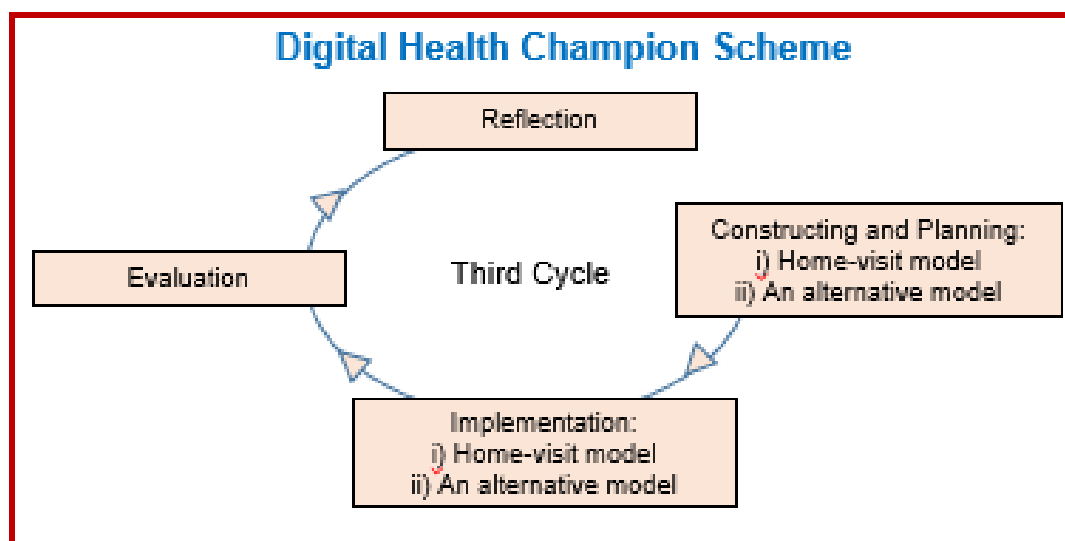


Figure 4. 9: Two models delivered simultaneously leading to the development of the Digital Health Champion scheme

4.5.2 Constructing and Planning Phase

The constructing and planning phase was intended to:

- Develop with stakeholders' required materials and data collection tools for the child nursing students' home-visit model.
- Explore feasible and sustainable ways that large numbers of nursing students could support local communities to use health websites.

4.5.2.1 Collaborators

I worked closely with a child nursing lecturer in the recruitment of students and families, as well as the development of project materials and data collection tools for a home-visit model. We explored how such a model could be introduced into the nursing curriculum for child nursing students.

Alongside developing a home-visit model, I continued to network and explore collaborations with organisations and projects (outsiders) across Devon and Cornwall. In particular, I worked closely with Healthwatch Torbay to help develop a model whereby different types of organisations (whether voluntary, community, government) could offer students opportunities to support local communities in using digital health.

4.5.2.2 Procedure

A home-visit model and a general model offered nursing students the chance to support local communities to use digital health. Each model was planned with stakeholders (insiders, outsiders and those with dual roles).

The project materials and data collections tools used in the implementation phase for cycle two were modified to suit child nursing students visiting families in their home. I worked with child nursing lecturers to tailor the training scenarios, training presentation, information sheets, the citizen contact questionnaires and invited them to feed into the recruitment methods.

A general model was explored with Healthwatch Torbay, intending to develop a feasible model whereby students could link with organisations to support local communities in learning about and using digital health. Healthwatch is an independent national organisation that operates on a local level. Their purpose is to understand the needs and experiences of local people and advocate for services that meet their needs. There are four Healthwatch organisations within the South West; Devon, Cornwall, Torbay and Plymouth.

4.5.3 Implementation Phase

The implementation phase aimed to:

- Explore whether a home-visit model was feasible and to whom (students, citizen contacts, SNaM, organisations).
- Develop an alternative model whereby students could link with local organisations and projects to support local communities in learning about and using digital health.
- If a model were deemed feasible, how could a model continue after the completion of my PhD. Could a model be embedded into the new nursing curriculum?

4.5.3.1 Participants and Collaborators

Second-year child nursing students were recruited to participate in a home-visit model prior to the recruitment of families. This approach allowed the research team to better understand how many families needed to be recruited, and across how many sites. The child nursing lecturer then contacted key individuals (community nurses) working closely with the University of Plymouth. We spoke to two Trusts inviting them to become involved in the project. This led to a collaboration with the University Hospitals Plymouth NHS Trust to recruit families to become citizen contacts. A presentation was delivered to community nurses informing them about the projects purpose, recruitment methods, eligibility criteria, and data collection methods.

Furthermore, I worked closely with collaborators, in particular Healthwatch Torbay to develop a general model. We intended to develop a feasible yet

sustainable approach whereby students and volunteers could support local communities in using digital health.

4.5.3.2 Procedure

Two models were explored concurrently: a) a home-visit model and b) a general model. Alongside the development of these two models, I began developing the DHC scheme to encompass both models, so long as they were deemed feasible and could be sustained within the new curriculum.

a) Home-Visit Model

Recruitment of Students

Second-year child nursing students were first approached by a child nursing lecturer. An email was sent on my behalf to inform students of the study and inviting them to take part. Those interested in taking part contacted the lecturer, who coordinated a training date with myself. Students attending the training session did not have to take part in the study. However, students had to undertake the two and a half hour training session to take part in the project. Each student was provided with a training pack to support them in their role. This included a copy of the presentation, a safety checklist, a prompt sheet with a list of potential questions for the student to ask their citizen contacts, a training feedback form, a student consent form as well as questionnaires and pre-paid envelopes for their citizen contacts. All students had valid and current disclosure barring service checks in place. We aimed to recruit 12 child nursing students, creating six pairs.

Recruitment of Citizen Contacts

Citizen contacts could have been a parent or carer with a child (0-12 years of age), or young person (13-17 years) living with a long-term health condition.

The young person's parent or carer would also become a citizen contact. Those agreeing to become citizen contacts had to have access to the internet, whether in their home, at a local library or café, as well as having a device to access the internet.

Community nurses identified and talked with families about the projects purpose and their potential involvement, identifying those who might like to take part.

Those interested were given a cover letter, leaflet, pre-paid envelope and consent form by their community nurse. Individuals interested in taking part were asked to read the information before deciding to complete and return their consent form using the provided pre-paid envelope. The leaflets readability level was 63.7, calculated using the Flesch Reading Ease. The leaflet was suitable for those aged 13 and above. If interested, the family completed and returned their consent form to me. They were asked to consent to the community nurse knowing of their involvement, and sharing with me whether their home had been risk assessed. If the family did not consent to me telling their community nurse, they were not eligible to take part. Families could contact me if they had any additional questions about the study. I contacted the families to confirm their eligibility to take part by asking the parent or carer to confirm they had access to the internet, and a device to access the internet. The study aimed to recruit a maximum of 12 families.

Structure of a Home-Visit Model

The citizen contact would decide on the location of the visit. They were given a choice of three non-clinical settings, a local library, local café or in their home. Students would visit the citizen contact twice in pairs. As a pair, students decided how many families they thought they could visit. The first visit would last approximately one and a half hours and the second visit an hour. Students living in close proximity were partnered together to help reduce travel. It was agreed with an academic lead that students' involvement contributed towards their teaching practice hours.

The first visit provided students with the opportunity to hear the citizen contacts narrative, providing them the chance to ask questions and develop their understanding. This was followed by students' signposting citizen contacts to reliable and good quality websites. The second visit summarised the previous visit and explored what had happened or changed since, concerning the individual's health and use of websites. Students logged in and out of every visit. If students fail to log out at an appropriate time after initiating a visit, I would send a text reminder to both students, followed by a phone call with a recorded message. I would then call the emergency services and inform the university, either by contacting the university's security. The approach was agreed with students in advance of the visits.

Participants were encouraged throughout the project to forward me their feedback. I provided the following opportunities for participants to feedback their thoughts:

- A summative evaluation was created to enable students the chance to feedback their comments towards a home-visit model and the provided training session.
- I contacted students after every visit to ensure they had the opportunity to feedback any concerns or suggestions.
- I contacted the families to ensure they were happy with the visits and to continue with the project.

b) General Model

The first and second cycles led to the idea of developing a general model to offer a number of opportunities in which students could support local communities in using digital health by linking with local projects and organisations. In particular, I collaborated with Healthwatch Torbay to develop an alternative model. They had recently delivered the 'Digital Inclusion Project' to support people in developing digital skills in order to access the internet as well as online healthcare information. It became apparent that both Healthwatch Torbay and other stakeholders were working towards a common goal of supporting local communities to better use digital health. This was an ideal opportunity to collaborate and work in partnership, linking nursing students to Healthwatch drop-in sessions and their online training, together developing a feasible and sustainable approach. We met on a number of occasions to develop our ideas. In December 2018, Healthwatch Torbay submitted a bid for funding to develop their website and to roll out their training to other areas of the South West. I was included on the bid as a collaborator, linking the organisation with the University of Plymouth's nursing students.

Alongside working with Healthwatch Torbay, I identified local projects and organisations (across Devon and Cornwall) to introduce the idea of nursing students supporting local communities to learn about and use digital health, referring to Healthwatch Torbay as an exemplar.

c) The Digital Health Champion Scheme

The development of both a home-visit and a general model led me to explore and develop the DHC scheme, as part of the third cycle. I shared the scheme with a large number of stakeholders informally and formally to disseminate the findings, and explore if and how the approach could be sustained after my PhD.

4.5.3.3 Ethics

Ethical approval was obtained from both the NHS REC as a proportionate review and the University's Faculty Ethics Committee (see appendix 10 for the approval letters). The intention was to provide child nursing students the chance to support families in using the internet for health, further developing a home-visit model. The approach is comparable to the ethics in the second cycle, but NHS REC was required for this cycle as community nurses were supporting the recruitment of families. Families were verbally informed of the study by their community nurse and provided with a cover letter, leaflet, pre-paid envelope and consent form by their community nurse. Following the discussions with their community nurse, families were asked to read the provided information and to contact me if they had any questions. This was to ensure they were fully informed of the study prior to making a decision to participate. The families were

informed that their decision to take part or withdraw from the study would not impact on their level of care, or relationship with either their community nurse or the university. If they were interested and willing to take part they were asked to complete and return their consent form using the provided pre-paid envelope. Families were asked to consent to the community nurse knowing of their involvement, and sharing with me whether their home has been risk assessed. If they did not consent, they were not allowed to take part. Consent was obtained from a parent or carer, if the young person was aged 13 or above they were also asked to provide consent. I had intended to seek reaffirmation of consent prior to any follow-up telephone interviews but this form of data collection did not take place.

Since the cycle was being undertaken alongside the curriculum, it was ethical to ensure students were aware that their participation would contribute towards their practice hours but this was not a compulsory part of their studies. Written consent was obtained from students after being introduced to the project as part of their training session. It was made clear that their decision to take part or to later withdraw would not impact on their studies or relationship with the university. Written consent would also have been obtained for the interviews, however this aspect of the data collection did not take place.

4.5.3.4 Data collection and analysis

The data collection and analysis methods followed those discussed as part of the second cycles implementation phase, sections 4.4.3.4 and 4.4.3.6.

4.5.4 Evaluation Phase

Within this phase, I reviewed how the research was undertaken. I developed an understanding of what worked well, and reflected on how the research could have been undertaken differently. Furthermore, I reflected on how the insider-outsider team had developed, and whether their positioning and/or mine had changed within the research.

4.5.5 Reflection Phase

The feasibility and sustainability of embedding either a home-visit and/or a general model into the new nursing curriculum was discussed formally and informally with stakeholders (insiders, outsiders and those with dual roles). We reviewed the findings and explored together the idea of introducing a DHC scheme to offer both students and the public the chance to develop their digital skills supporting others in the community.

4.5.5.1 Participants and Collaborators

First-year nursing students across all fields of nursing as part of a DP lecture in 2018 (one in Truro, one in Exeter, two in Plymouth) were invited to participate in a research study and feedback towards a DHC scheme. It is unknown how many students attended the lectures.

I continued to work closely with multiple collaborators to confirm the sustainability of the DHC scheme within the nursing curriculum and explore its continuation after the completion of my PhD. Collaborators were mainly staff based within SNaM, but also nursing students, local projects and organisations.

4.5.5.2 Procedure

As part of the lecture, I introduced the idea of Digital Health Champions (DHCs), highlighted the range of digital health activities students could participate in, proposed how we intended to recognise students' achievements, and explored their interest towards the proposed scheme. Students were invited to log into TurningPoint using their mobile, tablet or laptop and answer eight questions.

Findings were presented back to students in December 2018. The intention was to highlight changes to the scheme showing students that their voice had been heard, and to remind students of the opportunity of becoming a DHC. The scheme was presented to SNaM at a School Away Day, to potential collaborators (local organisations), and at a Research Festival Event (organised by myself) to share the developed scheme. I continued to work with key members of SNaM to embed the scheme into the new nursing curriculum as part of WPE.

4.5.5.3 Ethics

Ethical approval was obtained via the University of Plymouth's Ethics Committee to explore as part of a DP lecture with first-year nursing students, the idea of students becoming DHCs (see appendix 11 for the approval letter). The lecture slides were available for students to see in advance of the session. Slides included details around my PhD and the proposed data collection. All students were required to listen to the lecture as this formed part of their module and may benefit them in the future; however, voting was voluntary as the collected data would inform my PhD. It was essential to prevent students from making the assumption that taking part in the voting was obligatory, just

because the lecture was compulsory. How this study adhered to key ethical principles were presented in the lecture slides. As this was a voluntary activity students were assured their decision to take part in the voting would not impact on their studies or relationship with the university. The collected data was not linked to an individual; students were informed that once submitting their vote their response could not be withdrawn from the data set. Implied consent was obtained whereby a students' action, choosing to vote confirmed that they were happy for their responses to be analysed and used as part of my PhD.

4.5.5.4 Data collection and analysis

The lecture was delivered face-to-face. TurningPoint was embedded within the PowerPoint presentation and used as a tool to collect and amalgamate student responses. Questions included:

1. Which of the following activities would you be interested in, if any (showing at least two people to use the internet for health, attending at least one workshop or roadshow, work with organisations/teams to develop ideas and e-health solutions, Citizen Contact Project (home-visits), Citizen Contact Project (working with Healthwatch), Citizen Contact Project (with GPs), none)?
2. Are there any other digital health activities or events you think would be of benefit to you (open-ended questions)?
3. Are you happy with how we propose to recognise your achievement (happy, quite happy, slightly happy, not happy, don't know)?
4. In what other ways could we recognise your achievement (open-ended question)?

5. Do you like the idea of Toni Page identifying via Twitter opportunities for you to become a DHC (yes, I like the idea; no, I don't like the idea; don't know)?
6. Would you be interested in becoming a DHC (very interested, somewhat interested, slightly interested, not at all interested, don't know)?
7. In a few words, please describe why you would or would not be interested in becoming a DHC (open-ended question)?
8. How if at all, do you think we could improve the idea of students becoming DHC (open-ended question)?

The data was saved and analysed using Excel. A combination of nominal and ordinal data was collected. Descriptives were calculated and used to create tables and figures to present the findings. Valid percentages have been presented within my findings' chapters. Responses from four open-ended questions were imported into Excel and themes identified. Where an open-ended question succeeded a closed question, the findings were then viewed concurrently to explore why a respondent answered in a particular way. For example, where a participant was asked to indicate the extent they were interested in becoming a DHC (closed question), this was then viewed alongside their open-ended response to understand their reasoning. This mixed approach added depth to the findings.

4.5.6 Summary

To summarise, this cycle's constructing and planning phase required collaborators to reflect upon previous cycles, and discuss the approach this

cycle would take in trialling two models within the implementation phase. The learning from the implementation phase led to the creation of the DHC scheme. The scheme was originally meant to include both a home-visit and a general model offering a range of opportunities for students to support local communities. Due to the home-visit model ceasing to continue, this was dropped from the scheme. However, the developed training tools continued to be available to students. Students keen to be involved asked for a similar approach to be developed whereby they could support citizens via their district nursing placements. This combined with a general model formed the DHC scheme. The data collection and analysis methods used within this cycle's implementation phase reflected those used within the second cycle.

The evaluation and reflection phases provided an opportunity for stakeholders to collaboratively reflect upon this cycle as well as the project as a whole, and confirm the feasibility of the DHC scheme and its sustainability after the completion of my PhD. It was of value to explore with students their thoughts towards the schemes continuation and to share these findings with SNaM, bringing my PhD to a close. The data collection and analysis methods used within the cycle's reflection phase was sufficient, although it is appreciated that if time had permitted focus groups would have been able to verify the findings and add further depth.

4.6 Summary of Research Methods

Three cycles were undertaken to explore the idea of student nurses extending their own learning of health technologies prior to supporting local communities

as part of their WPE. The first cycle planned and developed a feasible model with stakeholders before investigating whether students would benefit. The second and third cycles built upon these findings, with the third cycle focusing on the models sustainability and integration into the curriculum.

A CAR approach meant I was able to be responsive and amend models immediately, this in addition to multiple cycles led to a greater understanding of the project. (Dick, 2002). A structured approach to the phases and cycles was taken aligning the methods to an Apollonian inquiry (Oates, 2002). However, I would argue I did not rigidly follow the four phases. On occasion, it was necessary to commence a new cycle prior to the completion of a former cycle to continue the development of a feasible model. I was led by the findings as well as the students' timetable rather than trying to follow a form of inquiry (Williamson, Bellman & Webster, 2012).

Throughout the cycles' the CAR principles were applied. I continuously reflected back to the principles ensuring they were explicit and truly encompassed. For me collaboration was not just a principle but a philosophy. It was therefore vital to reflect on the level of collaboration throughout each cycle and continuously invite stakeholders to become involved in the development of a model, drawing on their expertise and knowledge to help drive the research forward (Herr & Anderson, 2005). Collaboration is a strength of this PhD. All three cycles involved participants and collaborators to varying extents. Stakeholders helped to minimise the 'unknown' and extend our understanding of the models

strengths, weaknesses and opportunities (Bartunek & Louis, 1996). New knowledge was developed creating the DHC scheme.

Rich and detailed descriptions of the processes were kept throughout the research. This aimed to increase transferability of the findings, as they can be traced back to the research methods (Korstjens & Moser, 2018). Mixed methods were applied reflecting carefully on the purpose, timing, weight and combining of methods (Creswell & Plano Clark, 2011). Investigator and methodological triangulation were applied as strategies to increase rigour (Heale & Forbes, 2013). On reflection these strategies did create a more complete picture (Williamson, Bellman & Webster, 2012). For example, the use of methodological triangulation within the mixed methods analysis led to the identification of new themes and helped identify any contradictions, which were explored with stakeholders.

Even though the third cycle had finished, I continued to work with stakeholders to develop the DHC scheme ready for its introduction into the new nursing curriculum in September 2019. The three CAR mixed methods approach has led to new knowledge and action being taken, leading to a change to the nursing curriculum.

Chapter Five: Developing a Feasible Model for Nursing Students to Support Local Communities to Use Digital Health

5.1 Introduction

This chapter is one of three chapters presenting the findings from this PhD. In this chapter, I focus on the findings from the first cycle. At first I explore stakeholders' thoughts towards offering large numbers of students the chance to support local communities in using a health website, before reflecting on students' experiences of supporting a beneficiary to use a health website.

5.2 Exploring Stakeholders' Perceptions

This next section provides an overview of the stakeholders' thoughts towards developing a feasible model whereby nursing students support local communities in using health websites. Perceived benefits and concerns were acknowledged and discussed, in addition to exploring how best to address raised concerns and further develop a feasible model. The findings from the first cycle's constructing and planning phase were generated from six workshops with 131 stakeholders, and an online survey completed by 57 respondents (students, health professionals, academics, and the public), with a response rate of 24%.

Workshop participants identified a number of benefits for students, citizen contacts, as well as for the community and the university. These were summarised within 13 statements, of which five referred to the potential benefits for students, four for citizen contacts and a further four for the community and university. The 13 statements were used in an online survey to quantify the extent stakeholders agreed. The survey then explored concerns raised by workshop participants. Possible solutions were proposed within the survey inviting respondents to feedback their thoughts.

5.2.1 Perceived Benefits for Students

Participants tended to agree students would better understand the thoughts and experiences of people living with long-term conditions, learning how they live and manage while supporting them to use a health website (figure 5.1). In general, participants agreed students would develop person-centred skills, communication skills, and improve their confidence as a result of participating in this activity. The activity was perceived to be of benefit enhancing students learning. In particular, participants thought first-year students would benefit from supporting others, and building upon existing communication skills at the beginning of their degree. However, concerns were raised about supporting citizen contacts in their homes, and in particular participants questioned whether this would be appropriate for first-year students.

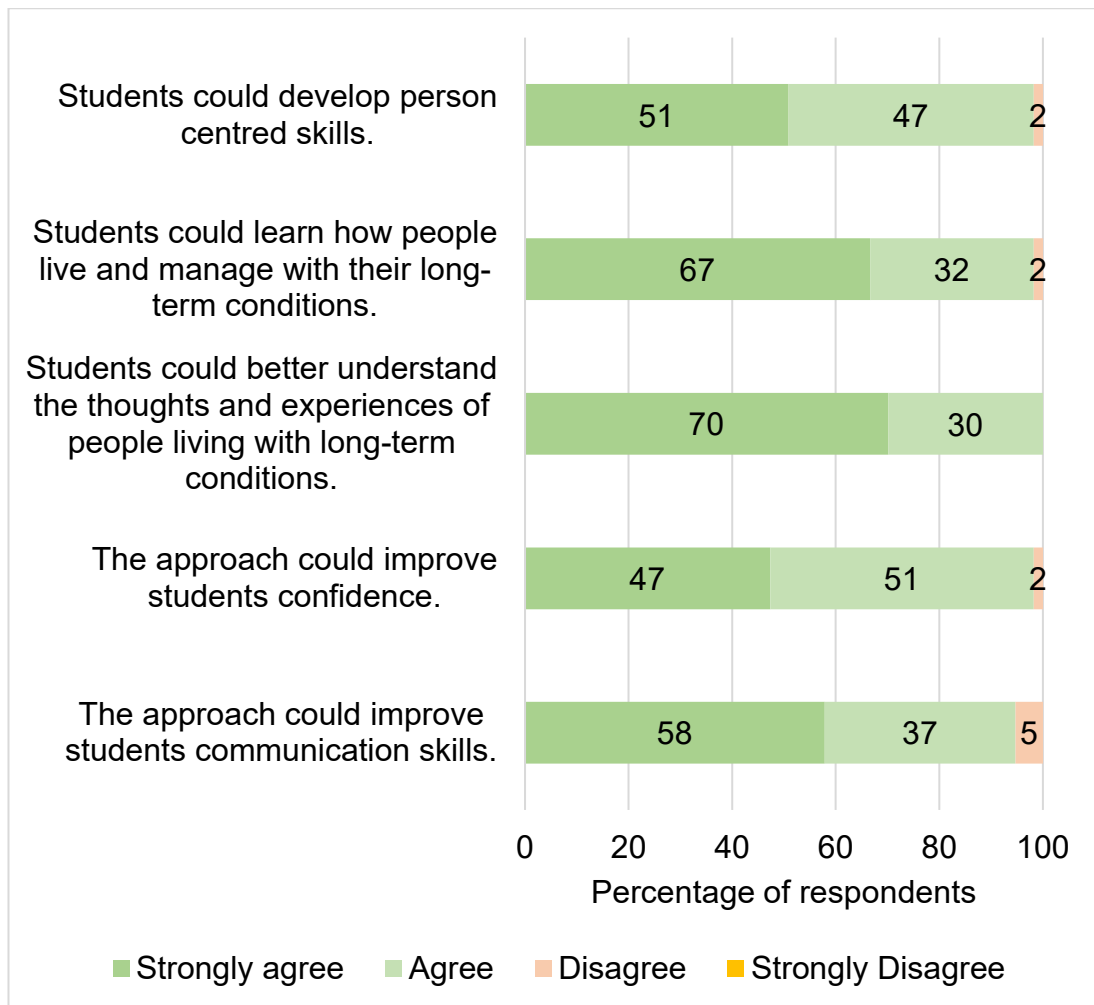


Figure 5. 1: Ratings of potential benefits to students by 57 online survey respondents¹

5.2.2 Perceived Benefits for Citizen Contacts

Participants agreed this activity would engage people who might not be able to leave their homes. Most concurred that this activity would give people who are often 'receivers' of services, the opportunity to contribute as experts to the education of nursing (figure 5.2). They would have the opportunity to share their experiences of healthcare, of living with their health conditions, as well as learn from our students regarding available health services.

¹ Percentages have been rounded to the closest integer. This may lead to rounding errors.

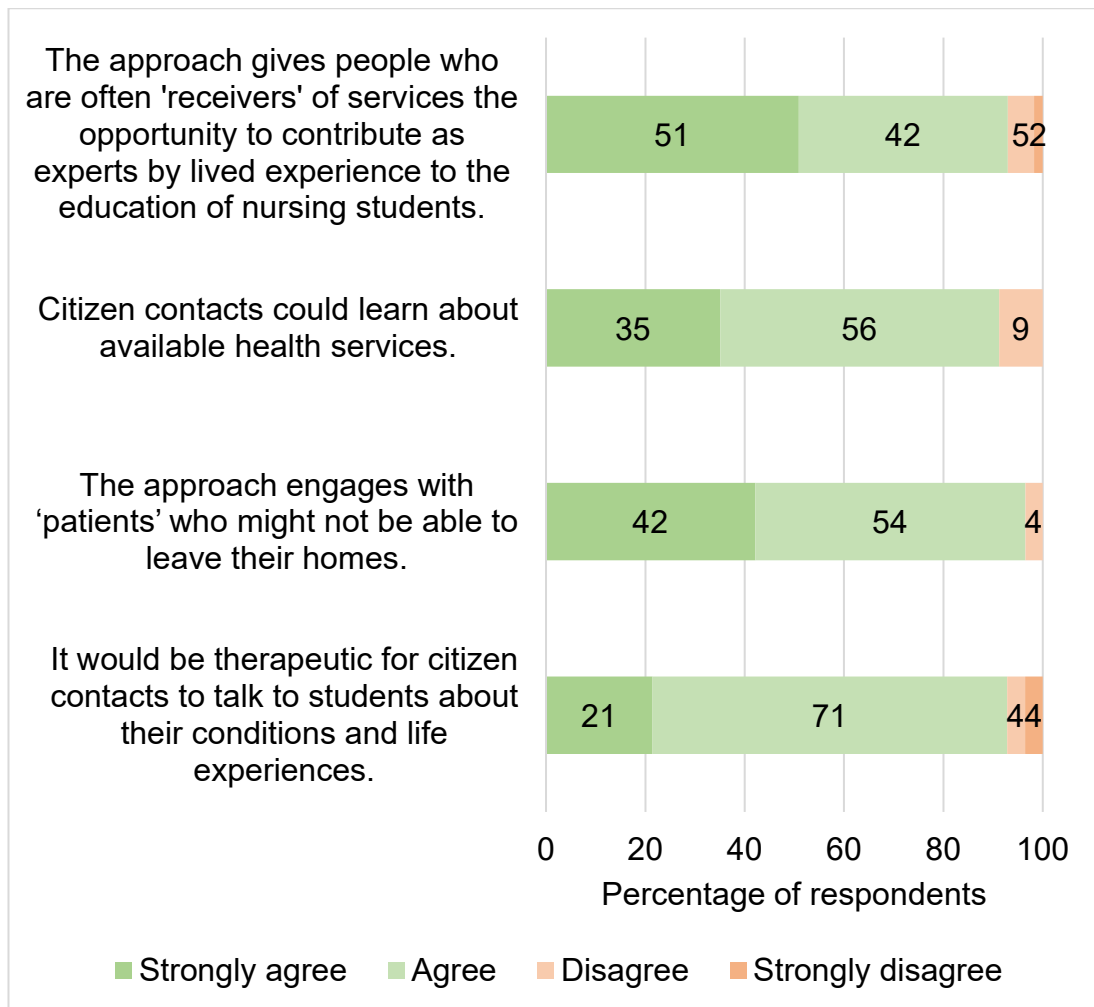


Figure 5. 2: Ratings of potential benefits to citizen contacts by 57 online survey respondents

5.2.3 Perceived Benefits to the Community and University

Workshop participants thought the activity would increase the amount of time students would spend in the community, with survey respondents agreeing the approach could bring the university and the community closer together. Survey respondents agreed to some extent that the activity would have the potential of minimising stereotypes, allowing students the opportunity to see and listen to the person. It was agreed to be a unique selling point for the university by most survey respondents.

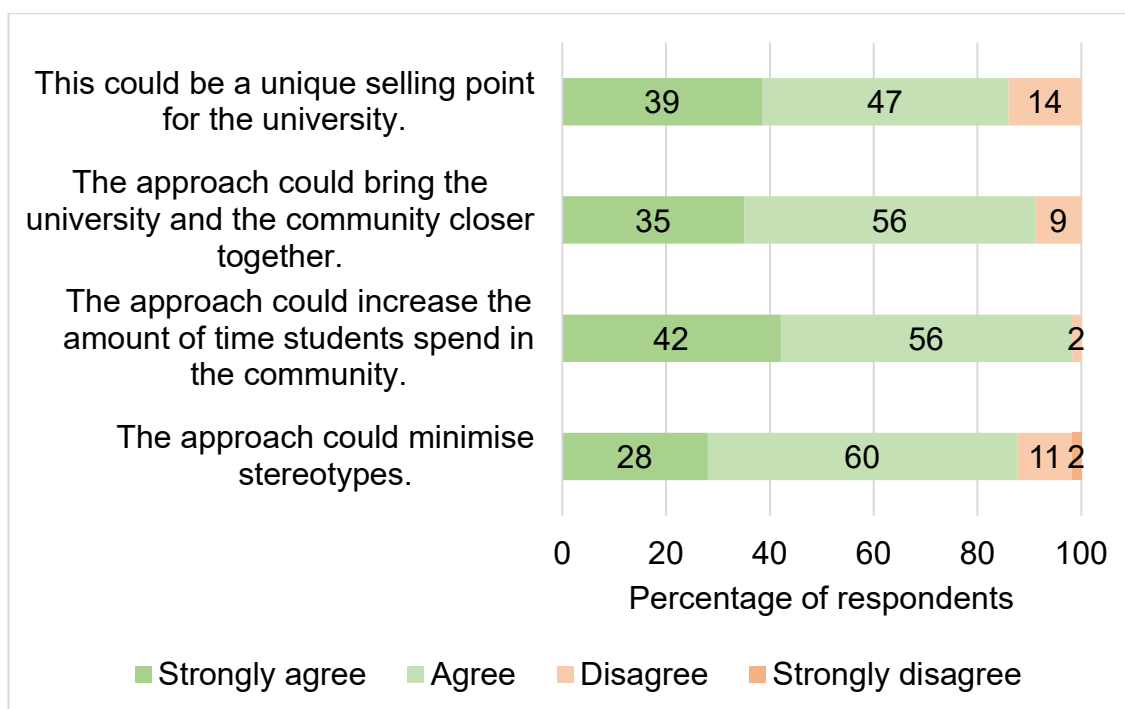


Figure 5. 3: Ratings of potential benefits to the community and university by 57 online survey respondents²

5.2.4 Raised Concerns

Although a number of benefits were discussed by stakeholders, thoughts quickly turned to how the activity would be structured and exploring raised concerns. Eight concerns were raised within the workshops of which five were explored within the online survey.

5.2.4.1 Increased Workload for Students

Workshops identified that nursing students have a huge workload managing both theoretical and practical work as part of their degree, questioning whether students would take the time to participate in an extra-curricular activity

² Percentages have been rounded to the closest integer. This may lead to rounding errors.

alongside other commitments. Concerns were raised about how the approach would fit into the students schedule without overloading them.

Will students be focussed enough if this is voluntary alongside all other commitments for example essays due in etc.? **Scribe workshop 1**

5.2.4.2 Increased Workload for Staff

Workshop participants were concerned with the proposal adding to busy staff workloads. In developing this model, I was mindful of developing procedures that would not overload staff and explored with them their thoughts.

5.2.4.3 Safeguarding Issues for Both Citizen Contacts and Students

Concerns were raised about students visiting a citizen contact in their home. The workshops suggested a variety of alternative locations for students and citizen contacts to meet, for example in a clinical setting, neutral setting, public place and a controlled environment.

If facilitated within a healthcare setting then any concerns etc. could be addressed rather than in the volunteers own home although acknowledged that the aim is to see volunteers outside of a clinical setting. Also, meeting in a public place may exclude volunteers who are socially isolated. **Scribe workshop 1**

Some participants highlighted home-visits as a risk to students' safety and suggested they be avoided, while others perceived the approach to be of benefit to students providing them the chance to understand how the citizen contacts live and manage in their own environment. Participants stated that screening mechanisms were a requirement when recruiting volunteers in order to safeguard students, particularly when visiting a citizen in their home. Since participants were concerned with the notion of students supporting citizen contacts in their homes, they suggested alternative approaches. For example,

turning the project into a one-day event/workshop, creating a service user group and involving students, or inviting students to provide support in locations other than the person's home.

One day event- should make this a one day event for volunteers to meet patients at a settings, and then split up into smaller groups to have conversations with. **Scribe workshop 4**

University service user group has previously been set up in social work within Plymouth University. This would be of value to set up in SNaM. **Scribe workshop 1**

Participants identified scenarios that might put students and citizens at risk. For example, a citizen contact may need urgent clinical care, experience suicidal feelings or a suicide/death may occur. Concerns were raised about the students' wellbeing and how they would manage in these situations, highlighting the need to provide guidance as well as support.

How would the student feel if the participant died- what support would they get after? From who? **Scribe workshop 4**

What happens in emergency or if clinical care needed urgently in the home, does the student not have a duty of care to deliver such care if present? For example, if visiting a volunteer with a wound that clearly needs to be re-dressed etc. **Scribe workshop 1**

Participants were concerned that citizen contacts and their family members may not understand the student nurses roles within this activity have different expectations. By not having clearly defined roles and responsibilities, citizen contacts and family members may expect students to practice their clinical skills, or hold them accountable for situations that are not their responsibility. It was questioned whether students would have the required level of experience to undertake this activity. Participants were concerned that students may step

outside of their remit and provide medical advice rather than signposting citizen contacts to particular websites.

... it would be very easy for student to slip into giving advice and intervening when carrying this out. **SNaM member of staff**

The level of experience for students may not be adequate enough. Students may not pick up on certain important things when speaking to patient, they may later be accountable if something bad happens as they missed out on something, or a signal the patient was giving them. **Scribe workshop 4**

There were also concerns about students having sufficient knowledge to signpost citizen contacts to health services; students might provide the wrong information and then be held accountable by the citizen contacts. Other participants felt students could signpost if training was provided. Defining explicitly, the roles and responsibilities of all those involved (citizen contacts, students, academics and the university) was perceived as essential, ensuring everyone understood what was expected of them and others. Workshop participants suggested the development of contracts; so everyone was aware and agreed with the roles and responsibilities as well as the boundaries.

Expectations of the volunteers and students need to be clear to all parties. Students would need clear guidelines about what they can and cannot do and also what they can and cannot ask volunteers. **Scribe workshop 1**

5.2.4.4 Not Having Sufficient Time for Students and Citizen Contacts to Build a Rapport

Participants were concerned that the activity could encourage citizen contacts to become dependent on students, that there would be difficulty withdrawing from the relationship, and that students may not know how to set boundaries.

If you develop a close relationship with patient how do you set the boundaries? Need to be part of the curriculum, how to set boundaries. **Scribe workshop 5**

5.2.4.5 Difficulty Recruiting Sufficient Numbers of Citizen Contacts and Students

Participants queried whether the activity would be able to recruit adequate numbers of students as they already have considerable workloads, and whether a sufficient number of citizen contacts would participate.

University needs lots of people as volunteers because lots of new student nurses recruited each year. Practical issue of recruiting sufficient volunteers.

Scribe workshop 5

5.2.4.6 Maintaining Confidentiality and Being Able to Share Information

Participants highlighted the need to identify and select citizen contacts in a confidential manner, and to better understand if and how we would share information without breaching data protection.

5.2.4.7 Payment of Travel Expenses

The cost of transportation was highlighted as a concern, as it was unclear whether those involved would be reimbursed for their expenses and who would cover the costs.

5.2.4.8 Ensuring Citizen Contacts and Students Benefit from the Activity

Some participants were apprehensive as to whether citizen contacts living with long-term conditions for a considerable amount of time would benefit from the activity as they could be considered an expert patient.

Vital that we do not take people for granted. **Community Engagement Lead**

5.2.5 Recommendations

In addition to identifying potential benefits and concerns, workshop participants suggested ways in which a feasible model could be developed. The following recommendations remained in the forefront of my mind as a model was being developed.

5.2.5.1 Increase Healthcare Professionals Awareness of the Activity

It was felt by some participants that patient participant groups, as well as healthcare professionals such as GP's, community nurses, health workers and long term condition managers, must be made aware of this activity. This is because they could provide guidance and may be willing to become involved.

Getting all under one umbrella. **Scribe workshop 3**

5.2.5.2 Consider the Year of Study and Discipline when Pairing Students

It was proposed by workshop participants to partner first-year students with second-years, as this would combine different levels of experience and skills. It was suggested to address the difficulty of students entering citizen contacts' homes without qualified members of staff. Furthermore, multidisciplinary working was suggested whereby students worked with other professions such as social work or occupational therapy to support citizen contacts.

A first-year and second-year students' level of experience and skills is very different. A first-year student would be better off to be matched with a third-year student who is more experienced. **Scribe workshop 4**

5.2.5.3 Consider Linking the Activity into the Curriculum

Workshop participants recommended incorporating any training students would need to undertake into the curriculum. Adequate time would need to be ring-fenced allowing students' time to reflect and write about their experiences.

Workshop participants also proposed linking the activity to placements hours.

Scheme as part of placement hours and not on top of hours. **Scribe workshop 3**

If the project was linked to the curriculum it will be more defined and have clear aims and objectives for the students. **Scribe workshop 4**

5.2.6 Stakeholders' Solutions to Raised Concerns

An online survey explored ways of addressing raised concerns. Survey respondents were invited to feedback their thoughts indicating whether they felt concerns had been adequately addressed (table 5.1).

Table 5. 1: Feedback towards raised concerns

Raised concerns	Proposed solution via online survey	Feedback from respondents
Increased workload for students	The survey further explored the notion of students being overloaded and proposed that as part of the activity students would visit four citizens, twice.	Just over half of the survey respondents agreed, to some extent, that students each visiting four citizen contacts would be problematic. This is because students would also need to manage their placements and/or studies. There was a need to reduce the number of citizen contacts students would visit.
Increased workload for staff	With regards to staff workload, the survey proposed having a co-ordinator to support the activity's continuation, if built into the nursing curriculum.	Respondents were concerned about who the co-ordinator would be as staff did not have capacity to take on this additional role. If there were to be a co-ordinator, the tasks would need to be minimal to not overload the person.
Safeguarding issues for both citizen contacts and students: home-visits	The survey proposed two nursing students to visit a citizen contact in their home, alongside a number of procedures that would be implemented to safeguard both the students and the citizen contact.	Half of respondents remained concerned about the safety of students visiting a citizen in their home. Respondents echoed the need to screen citizens and to risk assess their homes before students visit in pairs. Few respondents have indicated that students should have the opportunity to learn how to manage risk and assess situations in preparation for their role as a professional.

Safeguarding issues for both citizen contacts and students: traumatic situations	The survey proposed students' receiving training prior to visiting citizen contacts, guiding them on how to manage various situations and ways to access support.	Just over half of respondents perceived the approach to inadequately address the raised concern.
	The survey explored the idea of students having a safety device to raise the alarm in the case of an emergency.	Several questioned who would respond to the alarm and wanted more details, while others referred to the alarm as a potential financial burden providing students' with a false sense of security. The alarm would be incorporated or explored further.
Safeguarding issues for both citizen contacts and students: students ability to signpost websites	The survey proposed that for both visits students follow set guidelines. Students would explore with and listen to citizen contacts about their health condition(s), before signposting them to websites learnt as part of their digital professionalism lecture.	The majority of participants believed that their concerns had been adequately addressed and agreed to the proposed structure (37, 65%) and/or signposting citizens to online websites (37, 69%).
Not having sufficient time for students and citizen contacts to build a rapport	The survey explored the extent participants felt a visit would encourage citizen contacts to become dependent on students visiting them on two occasions.	Eighty-eight percent of survey participants disagreed that the citizen contacts would develop an unhealthy dependence on the students as a result of the visits.
Difficulty recruiting sufficient numbers of citizen contacts and students.	The survey acknowledged the raised concern and suggested that there was a need to explore the recruitment of citizen contacts.	Participants (47, 82%) had concerns; singling out social media as being a particular concern. A number of participants suggested alternative ways of recruiting citizen contacts, as this would provide a way of risk assessing and screening the citizen contacts and lowering the risk. Nevertheless, a couple of participants highlighted that the risk could never be mitigated. Recommendations included recruiting from healthcare organisations whether within the NHS (GP surgeries, hospitals), or externally (service user organisations, charities, nursing homes).

5.2.7 Amendments to the Proposed Model

As a result of feedback from workshop participants, survey respondents, as well as via informal discussions with SNaM staff, the following amendments were made (table 5.2).

Table 5. 2: Informing the proposed model

What changed?	Changes to the proposed model
The nursing students involved (feedback from workshops and discussions with SNaM staff).	<p>Proposed – Develop a model with all fields of nursing.</p> <p>Amendment – Initially focus on developing a model with second-year adult nursing students.</p>
Reduced the number of citizen contacts students would visit (feedback from workshops and online survey).	<p>Proposed – Five students in a group. Students work in pairs. Each student would visit four citizen contacts, twice.</p> <p>Amendment- Students would work in pairs and visit two or three citizen contacts, twice.</p>
The recruitment of citizen contacts (feedback from workshops, online survey and discussions with SNaM staff).	<p>Proposed – To recruit citizen contacts via social media, TV, the wider community in Devon and Cornwall, the press, and leaflets through service user organisations such as Patients Association, Patient Participation Groups, Healthwatch and other charities</p> <p>Amendment - Partner with a service user organisation (Age UK Plymouth) who has existing volunteering and safeguarding policies. They would screen potential volunteers.</p> <p>The organisations staff would be fully informed of the activity so they may remind service users of the students' role as well as their own.</p>
Log in and out system is required (feedback from online survey).	<p>Proposed – not mentioned</p> <p>Amendment – Students log in and out of every visit with me as their emergency contact. If a student does not log out in time, I would contact the students. If this were not possible, I would</p>

	contact the emergency services and the university security.
The health websites students can signpost (feedback from workshops).	<p>Proposed – Signpost citizen contacts to their Patient Participation Group, local practice website, Patients Association, Care Opinion (formerly Patient Opinion), Healthtalk Online, Healthwatch, NHS choices, NICE, relevant good quality websites for their long-term condition(s), local support groups as well as Twitter.</p> <p>Amendment – Signposting to their Patient Participation Groups local practice website, Patients Association, Care Opinion, Healthtalk Online, Healthwatch, NHS choices, NICE, as well as a good quality website for their long-term condition(s).</p>
Training content (feedback from workshops, online survey and through discussions with academic staff).	<p>Proposed – A training session would be delivered to students.</p> <p>Amendment - Students would attend a three hour training session, which would encourage students to reflect on potential scenarios, inform them of safeguarding, obtain guidance on how students build a relationship, and inform them on how to bring their role to a close.</p> <p>Incorporating training into the curriculum would be explored.</p>
Consider how students would be allocated citizen contacts (feedback from workshops, online survey and through discussions with academic staff).	<p>Proposed – not mentioned.</p> <p>Amendment – To explore the allocation of students and citizen contacts depending on their geographical location, therefore reducing transportation costs and making it easier for both students and citizen contacts to meet.</p>

5.3 Nursing Students Supporting a Beneficiary to Use a Health Website

First-year nursing students were provided with the opportunity to support a known beneficiary (family member, neighbour or friend) to use a health website as part of a module assessment. This approach removed concerns raised by stakeholders, exploring whether students would benefit from such an activity. Three hundred and seventy-one first-year nursing students gave permission for me to view their reflections (table 5.3). All were invited to part take in a follow-up, of which two focus groups (first= 5, second= 4) and two face-to-face interviews took place. One focus group and one interview were undertaken in Plymouth and Truro.

Table 5. 3: Course profile

	Exeter	Plymouth	Truro
Adult Nursing	71	130	67
Child Nursing	0	48	0
Mental Health Nursing	0	55	0
Total	71	233	67

Half of the students introduced a website to a relative, of which a majority chose to complete the task with a parent or step-parent. Non-relatives included a friend, flatmate, partner, girlfriend, boyfriend, husband or wife, neighbour, colleague or client colleague.

Most students introduced a single website as part of the task; however, eight students reported introducing two or more. Reasons included supporting the beneficiary in finding information about a particular condition, changing the

introduced website to better suit an individual's learning style or the student wanting to introduce more than one health website. GP and NHS Choices websites were most commonly introduced by students. Care Opinion, Healthtalk Online, Skype and FaceTime were less frequently mentioned. It is acknowledged that a student deviated away from the guidance by using Learn My Way, thus introducing a reliable website.

5.3.1 Barriers and Facilitators to Undertaking the Task

Students reflected on the facilitators and barriers to undertaking such as task, recognising how the beneficiaries' characteristics as well as how the approaches they used (researching a website, creating a suitable environment, providing clear instructions and explanations, adapting approaches, and tailoring support) influenced their experience. Some students found the task harder to undertake than originally anticipated.

5.3.1.1 Beneficiaries' Characteristics

Some students perceived discussing and demonstrating a health website to a beneficiary as being easier than to someone unknown to them. Students were not permitted to support a peer within the nursing programme; however, it would be of interest to investigate whether supporting a peer would lead to skills and knowledge being developed. The extent a beneficiary was interested in learning about digital health was reported to be a facilitator and a barrier.

Doing this activity with someone you know is easier as it is easier to explain something to someone you are used to communicating with. **Student 196**

Beneficiaries' computer literacy levels were frequently mentioned, influencing how straightforward students found introducing a health website. Students found those with computer skills easier to support.

I found it relatively simple showing my father how to use this website because he is very good at using computers. **Student 51**

The task was also considered easy to undertake if both the student and beneficiary found the website simple to use. Barriers included the websites navigation, administrative difficulties (e.g. logging on to a website), online services not being available, technical difficulties (e.g. slow internet) and the beneficiary feeling anxious towards technology.

However, the only thing that didn't go so well was the fact that the website kept crashing, which hindered how effectively I was able to deliver information about the site. This could have been a problem with my internet connection, rather than the site though. **Student 71**

I found the GP website particularly hard to navigate around which was similarly suggested by my mother. There was information all over the place which did make it hard to look for certain topics. For example; how to find the opening times, the patient charter, and how to book an appointment. **Student 262**

Students acknowledged that in the future they would need to support service users and carers with a mixture of computer literacy levels. It was perceived that introducing a website to a service user or carer with limited computer skills would be difficult. Students suggested additional ways to support the service user or carer, which included taking additional time to explain and offer guidance, providing clear instructions, having more patience, and practising how to show the most relevant parts of the website prior to the task. These approaches must be used to support any service user or carer regardless of their digital skills. One student commented:

It would be a slightly more realistic experience should I have shown someone who was not so well versed in technology nor was my friend how to use one of these websites as it would be more accurate to the type of clientele that would be shown it in practice. **Student 225**

Some students found that although they had increased their beneficiary's knowledge of a chosen website and the potential benefits, the beneficiary was not necessarily going to use the website, as they preferred more traditional approaches for example phoning to make appointments. There is a need to inform service users and carers of the available online services ensuring they are fully informed, prior to them making their own decision about using health technology.

5.3.1.2 Researched or Familiar with the Chosen Website

Students reflected on the requirement to familiarise themselves with a particular website prior to undertaking the task. Most took the time to prepare ensuring they had the required knowledge to support their beneficiary.

Also to check out the sites first before I introduce them to people, this is because I need to know what exactly the site has to offer so I don't give false information to people. Also by looking through the site first it means that I can help people more effectively and point them to important parts of the website. **Student 52**

Few students did not take the time to research a website prior to the task, as they were confident in their ability from previously viewing the website. Whether students had researched a website or not, some students indicated the need to further explore a website as they were not entirely prepared.

5.3.1.3 Setting-up a Suitable Environment

Students reflected on approaches taken to set-up an appropriate environment.

It is apparent students wanted the beneficiary to feel comfortable, and not to become distracted or feel interrupted while support was being offered.

While discussing and demonstrating the website we were in a quiet room, with minimal distractions and could easily hear each other when we were communicating. We were able to sit together, which my friend reported, felt comfortable as I was not hovering over them enabling them not to feel rushed.

Student 239

5.3.1.4 Provided Clear Instructions and Explanations

The pace at which the students spoke was reflected upon, recognising people were more likely to understand guidance if it was tailored to the individual.

Providing a step-by-step guide was also an approach used by some students to support beneficiaries in understanding the chosen health website. Students recognised the value of providing clear explanations, and allowing time to check the beneficiaries understanding. Where a beneficiary understood a student's instructions or explanations, this verified to students that they had provided clear explanations.

Once I talked through step by step with him he understood how the app worked and felt confident in trying to call other people. **Student 217**

A few students took the time to create a quiz for their beneficiary to check their understanding of the website and its functions. While others asked the beneficiary to verbalise what they have been told as a means of supporting the beneficiary to remember. Where a beneficiary did not understand, students attempted to explain in other ways, acknowledging that they just needed to find the best approach for that person. Avoiding the use of medical terms and abbreviations helped. A couple of students experienced difficulty explaining a

website to their beneficiary as English was not their first language. The activity provided a couple of students with the opportunity to consider how best to support someone where language is a barrier.

... I personally thought there was a little bit of a communication barrier since I can speak a reasonable amount of my mother's tongue. So, the best way we overcame this was to explain to him slowly and step by step without rushing the process as for a learner it can be daunting. **Student 46**

5.3.1.5 Adapted their Approach During the Task

Students reported changing their approach while supporting their beneficiary. For example, students would change the website being shown if the individual was struggling. They also changed the way in which they were explaining a website, as well as altering the pace of the teaching. Students tended to adapt their approach once realising their beneficiary was experiencing difficulty.

My mum struggled to get on the website initially, and I needed to change how I showed it to her given her lack of experience using the internet and computer. **Student 334**

5.3.1.6 Tailored Support

Students reflected on how they personalised the task to their beneficiary by considering the person's computer skills, learning styles, as well as interest towards a particular website.

Generally, students chose a website in advance of the task with the beneficiary in mind. They would consider which of the websites would be of most benefit and/or of interest.

I chose my cousins GP website as he does not feel that he has easy access to making appointments which cause him to deal with his health problems on his own. **Student 108**

There were a few instances where students chose to introduce a website because they wanted to extend their own knowledge, and on occasion the beneficiary was given the opportunity to select the health website or was involved in the decision-making process.

I decided to choose this site mainly as I had never heard of it before and was very interested in finding out more about the site and seeing how easy it was to use. **Student 13**

I actually asked my nan which option she struggles the most to use independently and would like some help with. Surprisingly she chose FaceTime, which I actually would say is the easiest to navigate. **Student 286**

During the task, a few students provided their beneficiary the opportunity to lead the session, and to explore the website independently. In these cases, beneficiaries used their existing computer skills. There were examples where a student and beneficiary worked together to search for answers or solutions to particular questions or problems.

My citizen didn't want drug therapy so we worked towards finding a solution to the problem, which was loneliness and the need for social interaction. What we found together was a dance group for people in the same situation of the same age group, that was accessible and affordable. **Student 351**

Showing a person something they already knew was recognised as being of benefit as it would reinforce the beneficiary's knowledge.

Even if you reinforce something that the citizen already knows then it can only serve as a reminder that the resources are there. **Student 257**

5.3.1.7 Time Taken to Complete Task

The amount of time taken to undertake the task was perceived to be a barrier, as either the beneficiaries were too busy or students had time constraints and felt the task too time consuming. Some focus group and interview participants

found it difficult to identify someone they could support as they were new to the area. It took time, but they eventually found someone.

One thing that didn't go so well was the fact we didn't have a lot of time so we didn't get to look through the whole website. **Student 145**

5.3.2 Benefits to Students

Students reflected upon how they benefited from supporting a beneficiary.

Three main themes were identified, including students reflecting on used skills and knowledge, reflecting on developed skills and knowledge as well as recognising their ability to support others in using health websites.

5.3.2.1 Applying Existing Skills and Knowledge

Communication skills, digital skills, and patience were by far the most commonly referenced. Students reflected on how they used body language to assist them in communicating with their beneficiary, in addition to providing slow, clear and concise explanations. Students identified the need to simplify or paraphrase information and at times adjust their language to suit their beneficiary. Students' reflections indicated that some were confident in their ability to communicate prior to the task.

I used my knowledge from past experiences, by using good body and hand gestures, as well as giving good eye contact. I have good listening skills, so I was able to listen to when my flat mate asked questions and I answered appropriately. **Student 172**

Students reported the need to be patient while demonstrating and explaining the identified website to a beneficiary. For example remaining patient when an individual did not understand their explanations; experienced difficulty in using the introduced website; and when an individual wanted to take control of the

website themselves. Students recognised that beneficiaries with limited computer skills, or unfamiliar with the chosen website before would require them to be patient.

... he wanted to do it himself without being shown and I had to be patient and try not to take over. **Student 107**

Digital skills and knowledge were most frequently reported as being used in this task. Students recognised using their digital skills and knowledge to access and navigate a website, as well as to show their beneficiary the services and features available.

I have used my knowledge of the internet and general IT skills, as part of Citizen Interaction, through knowing how to navigate to the website and find the relevant information. **Student 271**

Although less frequently mentioned a wide range of skills were identified, such as critical thinking, research, teaching, teamwork, organisational, and leadership skills.

I think I have developed a whole range of new skills due to this task as this is the first time I have really looked into using these sort of websites for advice and support. **Student 254**

5.3.2.2 Learning and Development

Students reflected on skills they developed as a result of discussing and demonstrating a health website. Communication was by far the most commonly mentioned. Students developed their ability to explain and share information. The task provided an ideal opportunity for students to practice signposting, communicating clearly and at a level suitable for their beneficiary. Students took the opportunity to listen to beneficiaries regarding their feedback towards the

website and the task, with some reporting to have developed their listening skills.

This citizen interaction has helped me improved my communication skills by being able to communicate information clearly and gaining feedback, to ensure information has been understood. **Student 140**

Patience was frequently reported as being improved. Students recognised the need to remain patient with beneficiaries, especially when their computer literacy levels were lower than their own.

My patience has also strengthened since having to explain something as easy as FaceTime which comes as second nature to me, to someone like my nan who was clueless; was a lot harder than I anticipated. **Student 286**

As service users and carers have varying computer literacy levels, this was an ideal opportunity for students to practise. With regards to students' computer literacy levels, reports of developing their own ability to search, manage and navigate websites were commonly mentioned. A large proportion of students reported an increase in their knowledge of available digital health services, resources and website functionalities, and/or of health conditions. With many commenting on the wealth of health information available online.

Firstly it has increased my knowledge of the sheer volume of health resources there are online . The amount of information that is available even without consulting a doctor. **Student 236**

For some students their confidence increased as a result of using, explaining, and/or demonstrating health websites. A small number of students reflected on the need for service users to carefully use health websites, such as NHS choices. There were concerns about self-diagnosis and an increase in unnecessary doctor's appointments.

I initially found myself lacking confidence within my own ability to explain the website properly and effectively within terms that they would understand. However, by having to do it, it threw me into the deep end, and although at first I was quite nervous, and lacked the enthusiasm I needed, as I went through the explanation, I gained more and more confidence within myself. **Student 289**

This task has helped me to develop my online literacy as I feel more confident in the use of a variety of health related online material. **Student 84**

Most students learnt about the approaches they applied, and gained an understanding of the facilitators and barriers to supporting another person. Students also referred to developing skills such as creativity, critical thinking, leadership, research, organisation, ability to work under pressure, teaching, and reflective writing.

I have a deeper understanding of how to critique patient websites and review the format, features and quality of information of each website. **Student 303**

I also developed my skill of working under pressure as I completed this work alongside completing other assignments. **Student 126**

A small number of students reported not developing any skill or knowledge as a result of discussing and demonstrating a health website.

I don't feel I have developed any particular skill or knowledge I didn't already have. Again I have used this page before to signpost patients. **Student 99**

5.3.2.3 Self-efficacy

Students made their own choices in how they introduced and supported their beneficiary to use a health website. Within their reflections, students recognised the facilitators and barriers to providing support, reflecting on their own ability to discuss and demonstrate a health website. In some cases, the task has reinforced to students their ability to search for, manage and navigate a health website as well as their ability to guide and support others. Students reflected on skills and knowledge developed during the task, acknowledging how they

would like to further improve their communication and preparation skills. This is in addition to developing their knowledge of health websites, confidence in discussing a website and their ability to adapt the task to meet an individual's needs.

I initially found myself lacking confidence within my own ability to explain the website properly and effectively within terms that they would understand. However, by having to do it, it threw me into the deep end, and although at first I was quite nervous, and lacked the enthusiasm I needed, as I went through the explanation, I gained more and more confidence within myself. **Student 289**

5.3.3 Future Curriculum

Students reported that they would like to be provided with additional information about the websites prior to undertaking such a task. The DP lecture already provides students with a brief introduction to the various websites, and there is not enough time in the lecture to explore each website in-depth. To overcome this problem a greater emphasis can be placed on the need for students to research websites and extend knowledge themselves, helping them in their journey to becoming an e-nurse. Students can now be provided with examples of how peers have previously supported beneficiaries making them aware of the facilitators and barriers they may face.

Falsifying reflections and embellishing answers was brought to my attention. There was always a risk students would falsify or embellish their reflections. It is difficult to prevent or even manage this problem. One student commented on embellishing her answers, as she wanted to make a good impression, and had previously considered falsifying the provided information before finding her brother to support.

K: I find it quite frustrating at the minute because I am finding a number of younger students, they are skirting and because I am quite organised and because I put the effort in and do the work. **Interview 2 line 176-178**

The idea of nursing students supporting their local communities in pairs to use a health website was explored with students as part of the focus groups and interviews. Students discussed the perceived barriers and identified ways to overcome them in the future. For example, as a result of falsified and embellished reflections a few students were concerned they may have to work in pairs or in a group to support local communities to use a health website. If this were to happen, they did not want to work with a peer who placed minimal effort into completing the task. Students reflected on how supporting local communities would link in with their studies, as it was felt that they would not have time to offer support with their current workload.

K: I don't know how/what our workload will be at that point because would I be committing to doing something and at the same time a load of other deadlines from uni and regretting doing it and then not putting my best to it. **Interview 2 line 219-223**

Some felt this was a WPE activity and considered the possibility of this activity educating and supporting whole families.

E: In our spare time wider patient engagement which we all need to do, we have to do it, that work really well I think, something really think it would.

A: Like an extra community sort of thing. **Focus group 1 line 395-397**

Particular groups of people (the elderly, those isolated or chronically ill) were identified as potentially benefiting from receiving support. However, students questioned technological barriers, for example what would happen if people had no internet access or devices, and how they could be involved and supported. Supporting people with no device or internet access is a separate project.

However, it does raise the question towards how we are locally supporting those interested in using the internet for health, but do not have access to the technology.

5.3.4 Amendments to the Proposed Model

The findings presented above informed the training delivered to second-year adult nursing students as part of a home-visit model. They too would be offering support in using a health website but to recruited citizen contacts. I incorporated activities to encourage students to discuss how they intended to support others in using a health website, identifying the facilitators and barriers. Examples of how first-year students supported a beneficiary were provided. The aim was to highlight the potential benefits and encourage second-year adult nursing students to prepare in advance of supporting their citizen contact to use a health website.

5.4 Summary

There was a general consensus amongst stakeholders that students supporting local communities to use a health website would be of benefit to students, citizen contacts, as well as the community and university. However, a number of concerns were raised. Students were invited as part of a module assessment to support a beneficiary (someone known to them) to use a health website to explore the potential benefits. This allowed the benefits to be investigated without the challenges raised by stakeholders. The task enabled students to learn about the facilitators and barriers to supporting a beneficiary to use a health website, giving them the chance to reflect on their own abilities and

identify ways they can further develop. This chapter concludes that students benefited from supporting a beneficiary to use a health website. Evidence suggests students applied and/or developed a range of skills and knowledge including digital. Students recognised that this would have been a different experience if they had supported someone they do not know.

For students to support local communities concerns raised by stakeholders needed to be addressed. This cycle began to develop a model working with stakeholders. The next chapter discusses the findings from the second and third cycles whereby a home-visit and a more general model were developed and trialled with nursing students. The intention was to develop models that addressed concerns presented within this chapter.

Chapter Six: Trialling and Amending a Model for Nursing Students to Support Local Communities to Use Digital Health

6.1 Introduction

Chapter four concluded that students benefit from supporting beneficiaries to use a health website. However, a number of concerns were raised by stakeholders as part of the initial exploration. It was agreed to create a model that addressed these concerns, and to explore the development of a feasible model by trialling it with nursing students. This chapter will present the findings collected from trialling a home-visit model with adult and child nursing students, and trialling of a more general model. This is the second of three findings chapters.

6.2 Trialling a Home-Visit Model with Adult Nursing Students

Three adult nursing students attended training and consented to participate in a home-visit model. Students reported developing their knowledge of safeguarding and data collection, in addition to developing communication and computer skills. Students keen to take part in the study recommended a change to the home-visit model. They proposed that two of the students would form a pair whilst the third student would pair with me to undertake the visits. All students considered this an easier approach as they would only visit one citizen

contact in their pair. Two students submitted reflections after each visit and both took part in face-to-face interviews. Unfortunately, one student did not forward any reflections. They became uncontactable and were not interviewed.

A total of nine service users and/or carers from Age UK Plymouth showed a willingness to be involved. Six citizen contacts consented to participate in the study. Reasons for not taking part related to the person's health. After the first set of visits, one citizen contact withdrew as they could not gain access to the internet in their room. The citizen contact lived in a care home and spent the majority of their time in their room. They did not perceive a second visit to be of benefit, as they did not want to leave their room to use the internet in a communal area.

Five citizen contacts received two visits. The first questionnaire was completed with/by all citizen contacts, whereas the second and third questionnaires were completed by four citizen contacts. Four out of five took part in either a telephone (n=1) or face-to-face interview (n=3) to explore their experience of participating in a home-visit model. Reasons for not participating in an interview were linked to a person's health. The citizen contact not completing their second and third questionnaires did take part in a face-to-face interview.

6.2.1 Students' Experiences

In this section, I discuss the benefits, facilitators and barriers identified by two second-year adult nursing students who took part in a home-visit model.

6.2.1.1 Benefits for Students

Communication, note taking and organisational skills were developed by students. They acknowledged that their rapport with the citizen contact had built over the visits. They felt more comfortable and confident in their second visit helping to guide the conversation. Students appreciated the time the citizen contact had taken to share their life and healthcare experiences.

In the first one we struggled to keep it on topic of what we were asking, and the second time we actually did better, butting in a bit and saying lets crack on, we better get on with the point of being here. **Student interview 2**

Students reported that they learnt about available healthcare services from the citizen contact, which led to students undertaking their own research and imparting knowledge on their next visit. Both students wanted to help increase the citizen contact's awareness of local healthcare services. They recommended a list of local services to be incorporated into the initial training session.

Again learning more about his condition, learning about, how we, we looked into the different services like Age UK and more about signposting and, just learnt ... Gives me more empathy for people that maybe seem independent and have their life together and all this, actually we don't know what is really going on behind the surface. **Student interview 2**

Students extended their learning of the citizen contacts health condition. One student stated that they were knowledgeable about the health condition prior to the first visit, but the citizen contact had extended their understanding of how people live with the condition, further appreciating how a health condition can vary for different people. Both students valued the opportunity to learn from the citizen contact in the home. One student commented that their placements so far had been clinically based, therefore visiting a person in the home was a new

experience and one they would not have otherwise had. The training prepared them for the home-visits as it increased their situational awareness.

Just because of what I gained out of meeting the person. I will remember him always. Yeah, it was a good, good personal experience rather than a, it wasn't a clinical experience that you get when on the wards or anything like that, yeah it was good. **Student interview 1**

Students enjoyed the time spent with their citizen contact and were positive about their experience, even though they did not get to support someone in using a health website. From the findings, it appears that an assumption was made during their first visit. As the citizen contact was confident in using the internet, it was presumed they did not need support in using health websites. This led to support not being offered. However, students did undertake their own research of local healthcare services and shared their learning with the citizen contact. This example was shared with future students in an attempt to avoid this situation from happening again.

We knew he was computer savvy because he has worked in CAD design and computer design. So that was a slight miscommunication, but I think he probably got out of it the company maybe. ... I don't think we helped him so much with the computer side of it unfortunately. **Student interview 1**

Both students would recommend participating in a home-visit model to other students. One student questioned why the opportunity was only for second-year adult nursing students, as they perceived the activity to be a learning experience for other fields of nursing and years.

Yeah I would say definitely, and especially I have had experiences like I said before, but for people who haven't someone with a disability or haven't had the experience in someone's home, all being clinical, it's really good to see how someone is at home. **Student interview 2**

Yeah, definitely. Why does it just have to be just second-years, it can also be mental health nurses as well, everyone. I think it's a really good learning experience, I said especially for people who have not met anyone with long-term conditions. I think it's really good. **Student interview 1**

6.2.1.2 Facilitators to Participating in a Home-Visit Model

Students felt that the developed materials were useful; the materials included a prompt sheet, questionnaires and safety guidance. In particular, the prompt sheet helped students to guide their conversation and was predominantly of use when ending a conversation. However, it could be further developed by incorporating strategies to help navigate a conversation. I provided examples of how to navigate a conversation as part of the training, but recognise that students would find it useful to have these strategies included on their prompt sheet.

TP: Ok. Are there any ways in which the project could be improved, in your opinion?

S2: I think the questions are really good and the prompts sheets and or that is really good.

TP: When you say the questions, which, the first questionnaire ...

S2: All of it. I think all of it really help you, it does help you keep on track, the first time again purely because the citizen contact had so much to say, but it did help you to navigate the conversation, know when to say 'the final question is' finishing up. It leaves it open, not really direct questions, very open. **Student interview 2**

Students uploaded their written reflections to their online portfolio to evidence their WPE. They felt sufficient guidance was provided. If the activity were embedded into the curriculum, I would need to explore setting deadlines to prevent the activity from being de-prioritised. Since WPE was not a compulsory activity, I felt it was unfair to enforce a deadline. One student felt this would have been of benefit.

And for the student as well, with the wider patient engagement it would be good to have something in the curriculum to do with it. **Student interview 2**

I don't know if it's applicable. Just perhaps not having, like you said we are flexible learners, and need to be flexible but perhaps not having deadlines for the

reflections maybe made it a bit harder. I know you were doing because you didn't want to pressurise us, but maybe subconsciously it went way down the priority list because there was no set deadline to write in the diary or whatever.

Student interview 1

6.2.1.3 Barriers to Participating in a Home-Visit Model

Students identified barriers to participating in the developed model. Firstly, students reported difficulties in using Kitestring, a system used to help facilitate the log in and out system for each visit. Students trialled Kitestring at the beginning of their first visit but resorted to contacting me directly, which was a preferred approach. Students recommended removing Kitestring from this model.

The training really enjoyed. The thing about the, I can't remember its name the safeguarding app, that didn't work. **Student interview 1**

Secondly, students found organising visits to be a challenge. Within their pair, students would identify several dates and times to visit their citizen contact before forwarding them to me. I would contact the citizen contact to ensure they were available before confirming the time and date with both students. Students found this process difficult as they could not always keep the dates and times free due to other academic commitments.

That's the other hard thing, like when you give dates, obviously you have got to go to contacts and give them dates and they have got to wait and then you have to get them back and then you are leaving all those dates open. Me personally, I have to book in work, and my volunteering, it was just really open. I don't know how else you could get around that. I really don't. **Student interview 2**

6.2.2 Citizen Contacts' Experiences

Five citizen contacts aged between 65 and 85 received two visits as part of a home-visit model. Citizen contacts were invited to complete three

questionnaires over the course of the study and to take part in an interview to explore their thoughts and experiences of becoming and being a citizen contact.

This next section briefly discusses the citizen contacts' use of the internet for health. The data was collected as part of the first questionnaire undertaken within the first visit, prior to any support being provided. Table 6.1 shows that two citizen contacts reported accessing general information on their GP website and ordering repeat prescriptions online. No citizen contact had used their GP website to view their medical record.

Table 6. 1: Citizen contacts' use of their General Practice website pre student visits

Citizen contact	Viewed their GP website	Repeat prescriptions via the website	Viewed their medical records via the website
1	Yes, I have	Yes, I have	No, I have not
2	No, I have not	No, I have not	No, I have not
3	No, I have not	No, I have not	No, I have not
4	No, I have not	No, I have not	No, I have not
5	Yes, I have	Yes, I have	No, I have not

With regards to the use of healthcare websites, no citizen contact had heard of or used Healthtalk Online or the Patient Association website. Three citizen contacts had heard of NICE and the NHS Choices websites, with only two reporting to have used the NHS choices website. A further one citizen contact had used the Healthwatch website, with another using Care Opinion. Other accessed healthcare websites included national charities websites, Dame Hannah Rogers and an American health website.

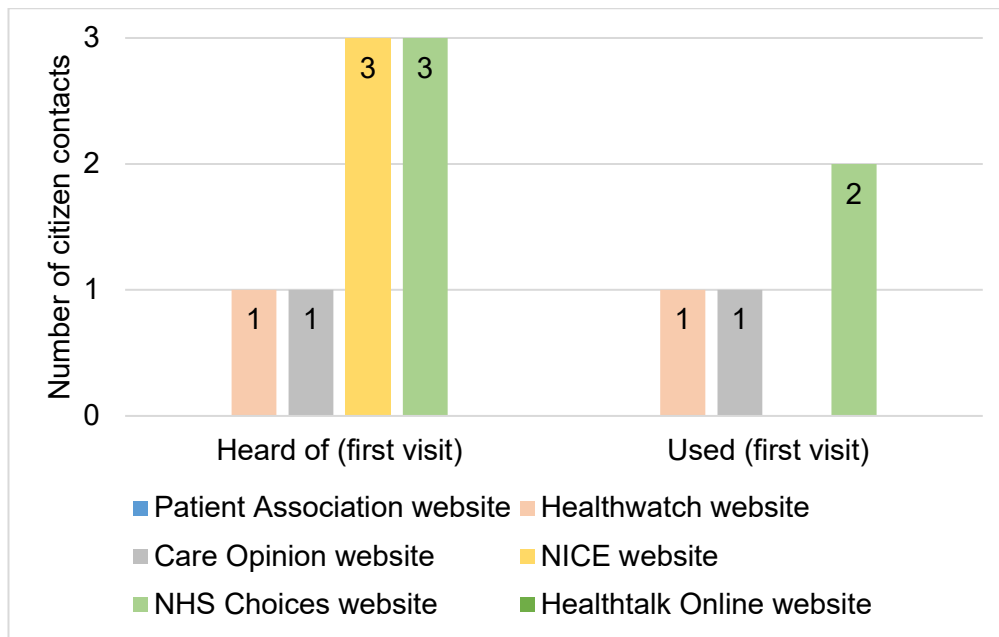


Figure 6. 1: Citizen contacts' use of selected healthcare websites pre visits

Adult nursing students visited citizen contact number two, whereas my colleague and I visited citizen contacts one, three, four and five. This next section indicates which health websites were introduced as part of the home-visits:

- Citizen contact one:** The citizen contact used their GP website for repeat prescriptions, and reported visiting national charity websites relevant to their health conditions. They perceived themselves to have good computer skills and were confident in their ability to use the internet. The citizen contact shared that they often surfed the internet, watched Youtube and Netflix, and shopped using downloaded apps to pass the time. As they were already confident in using the internet, they were interested to see what they could learn. From talking through the various health websites, the citizen contact chose Care Opinion. They

voiced that they were keen to share their healthcare experience with others and wanted to learn more about the Care Opinion website.

- **Citizen contact two:** The citizen contact was confident in using the internet. Due to a miscommunication, no health websites were introduced.
- **Citizen contact three:** The citizen contact reported not being able to use the internet. Their family had recently bought them an iPad and they themselves were keen to learn how to use the device to search online. The first visit focused on showing them how to search. As an example, we searched for their GP website, as they wanted to know which doctors were at their surgery.
- **Citizen contact four:** The citizen contact used an iPad to play downloaded card games. They had previously used the NHS choices website but had limited computer skills and was not confident in searching the internet. The visits focused on supporting the citizen contact in being able to search. They were shown a national charity website to give them access to a range of recipes and guidance towards diet. The website was chosen as a result of talking with the citizen contact about their health condition. They acknowledged that they had to be careful with their diet but did not have access to any guidance to help them.
- **Citizen contact five:** The citizen contact was confident in their ability to use the internet. They reported frequently using the internet to complete their shopping and to order repeat prescriptions. However, they were currently staying with and caring for their father who did not have access

to the internet. As part of the visits we discussed if and how they could gain access to the internet without entering an expensive and long-term contract. During the visit, I was able to use my phone as a personal hotspot to provide them internet access on their own device. We then explored the Care Opinion website, as the citizen contact felt it was important to share their learning with others.

The aim of the visits was to increase the citizen contacts' awareness of and to support them in using a chosen health website. The findings are drawn from the citizen contacts' responses from the second and third questionnaires as well as their interviews. Unfortunately, one citizen contact did not become aware of or use any health websites due to miscommunication. When asked what, if anything, they had learnt from being involved in the project, they stated:

Only in the respect that they do need to be in the community and to find out from people like myself how we remain independent and get on with our lives. You know, people with disabilities or increasing age, because very often people like myself do live on our own through whatever circumstances, you know. **Citizen contact interview 2**

A further two citizen contacts were made aware of a relevant health website but did not report using them while a fourth citizen contact learnt about Care Opinion, a website they would not have known about if not for participating in this study. They shared their experiences of healthcare via the website, referring to it as a cathartic experience in which they felt heard.

You shown me sites and things I didn't know existed and that's been, that's been useful, that's giving me more of a voice. **Citizen contact interview 1**

A fifth citizen contact reported learning about broadband connections and felt inspired to research how to gain access to the internet as a result of our first

visit. Before the second visit, the citizen contact had investigated and gained internet access, which alleviated difficulties experienced in buying food and ordering prescriptions while staying with and caring for their father. Internet access was described as a 'lifeline'. They hoped to explore Care Opinion in the near future. The home-visits made a positive difference to two of the five citizen contacts.

TP: With the dongle, we

C5: Oh yes I got that sorted, I didn't have the dongle in the end I went to EE and did a contract in the end, it was so complicated doing it the other way.

TP: Alright, ok.

C5: But without that I won't have managed over Christmas with Dad, with the bereavement and everything because I wouldn't have been able to get the information. It was a lifeline doing the funeral service. **Citizen contact interview**
5

Citizen contacts appreciated having face-to-face contact and being able to share their experiences of healthcare in their home. One citizen contact acknowledged that the activity provided them the opportunity to share their healthcare experiences, aspects they would not want to share with their family, but felt comfortable to do so as part of the visits. Citizen contacts hoped students learnt from their experiences and found it to be of benefit; learning not only about their positive experiences of healthcare but also identifying areas for improvement. The visits were reported by one citizen contact as being a 'win-win', as everyone got something from them.

Citizen contacts were positive towards their involvement in a home-visit model; however, improvements were suggested. Increasing the number of home-visits was suggested by one citizen contact. They had previously received visits from

a community nurse but this had been discontinued. They missed having that contact as they found it difficult to leave the home. The home-visits 'helped bridge that gap a bit'. Citizen contacts also recommended setting up groups for people to come together to learn and share. This was felt as way of encouraging people out of their homes; however, the home-visits would still need to be offered to those not able to leave their home.

Citizen contacts questioned how this model was going to be promoted in the future. One citizen contact recommended that a home-visit model needed to be promoted more widely. They perceived the visits to be separate from the health service, which they thought was a good approach as they found going into a clinical setting daunting. Offering home-visits, as well as group sessions within GP and additional non-clinical settings was suggested as a way forward. One citizen contact saw the benefit of delivering group sessions to share healthcare experiences.

Four out of the five citizen contacts were willing to continue sharing their experience of healthcare with students via a home-visit model and learning about health websites. Where a citizen contact did not want to continue, this was linked to their health.

6.2.3 Amendments

Both students and citizen contacts proposed changes to the home-visit model. Changes to this model are presented in table 6.2.

Table 6. 2: Informing the home-visit model

What changed?	Changes to the model
Training (Student feedback)	Amendment – As part of the training there was a need to highlight that although a person may be confident in using the internet, it does not mean they are aware of health websites that may be of use to them.
Reduced the number of citizen contacts students would visit. (Student feedback)	Amendment - Students would work in pairs and visit two or three citizen contacts, twice. Additional Amendment - Students would work in pairs and visit one citizen contact twice. There was a need to be flexible in the number of citizen contacts students would visit.
Log in and out system is required. (Student feedback)	Amendment – Students log in and out of every visit with me as their emergency contact. If a student did not log out in time, I would attempt to contact the students. If this were not possible, I would contact the emergency services and the university security. Additional Amendment – Kitestring was explored as a safeguarding approach to provide students the chance to sign in and out of the home-visits without contacting the emergency contact unless there was an emergency. Feedback from students suggested that Kitestring did not work as an approach.
Consider how students would be allocated citizen contacts (Student feedback)	Amendment - Explore matching students to citizens with long-term conditions that interested them.
Offer group sessions (Citizen contact feedback)	Amendment – Explore the running of group sessions. This was envisioned to co-exist alongside home-visits. Group sessions could be held in a GP surgery, but there was a need to consider other non-clinical settings for those that find clinical settings difficult.

6.3 Trialling a Home-Visit Model with Child Nursing

Students

This section presents the trialling of a home-visit model for child nursing students.

Eighteen students were recruited to take part in the project as it was anticipated that students would drop out over time as this was an extra-curricular activity. All recruited students were trained to support families. Students were invited to feedback on the training via a short questionnaire exploring their learning, likes and dislikes, of which 17 students responded. Comments were positive towards the received training. Students were keen to have confirmed how the activity would fit in amongst their studies as well as additional guidance towards one of the developed scenarios. To answer these questions students were copied into an email to a child nursing lecturer who was able to address these queries.

Sixteen students consented to participating with ten dropping out due to workloads. A total of six students supported three families in pairs. Each pair of students visited a family on one occasion. It became apparent after the first set of visits it was going to be difficult to organise a second set. As families were informed during the recruitment phase that they would receive two visits, we attempted to organise second visits to no avail.

It became apparent that a home-visit model in its current form was not feasible for three significant reasons. Firstly, there were difficulties in recruiting families to take part. It took two and half months to recruit three families, missing our

target of six. The recruitment of very few families suggested early on that this model would not be feasible in its current form. However, if the visits were successful another recruitment method would be explored.

Secondly, organising visits became challenging. It took a considerable amount of time for me to organise the first set of visits, and it was not possible to organise a second set. Reasons were linked to difficulties in co-ordinating a suitable date and time as both students and families had busy schedules, and a family temporarily living at alternative accommodation due to renovation.

Thirdly, the amount of resources (time, materials) taken to deliver this opportunity were incorporated as part of my PhD and role as a researcher/facilitator. It would not be feasible for SNaM to continue working in this way, as it would require funding and staff time.

Thank you very much for the Christmas card! I really liked the part where the trees became lit.

Offering child nursing students the chance to support families by linking through schools was discussed as this alleviated safeguarding concerns and would have the potential of reaching a larger number of families. This model would need to be explored with additional stakeholders (families and schools), and someone would be required to liaise with schools, organise visits and support students. The idea could be explored if funding was attained to cover staff costs, or there was an organisation we could collaborate with who were keen to support the development of this model.

6.4 Trialling a General Model

Within the constructing and planning phase, online respondents suggested the potential of linking students with organisations internal and external to the NHS to support local communities in using health technology. It was clear from the findings that stakeholders felt a feasible model could be developed as a result of increasing healthcare professionals and organisations awareness of this activity.

A home-visit model was trialled with the intention of sharing the approach with other organisations; however it was apparent during the third cycle that this model would not be feasible, and an alternative and more general model was required. The insider-outsider team worked to create a feasible model linking with Healthwatch Torbay who were exploring how to further enhance their Digital Inclusion Project. This was an ideal opportunity for us all to collaborate and trial a general model whereby community volunteers and students would support local communities in becoming aware of and using health technology. For example, students were invited to contact Healthwatch Torbay to work with them and offer support in the delivery of drop-in sessions within the community. I am aware of a handful of students who have so far undertaken this model. I did not gain ethical approval to collect or analyse students' reflections, and therefore do not know exact numbers. I can report that students' trialling this model undertook online training provided by Healthwatch, attended at least one of their drop-in sessions, prior to exploring with Healthwatch how they could support them in delivering a session within their own local community. Selected DHCs were invited to develop a PowerPoint to share with other students about

their experience and learning, providing an example of what can be achieved. I believe that students championing the idea of becoming a DHC will be more influential than myself presenting the notion. DHCs were invited to feedback on this general model and feed into the development of the scheme's criteria.

Due to developing a general model with Healthwatch Torbay and stakeholders perceiving this model to be feasible, it was extended to offer all nursing students the chance of working with local organisations and projects to support local communities in using health technology. A general model was developed so the university would not be required to recruit service users and carers, as local organisations and projects were already undertaking this. It was agreed that organisations and projects would provide opportunities for students to offer support and would inform me as a facilitator of the opportunities to advertise to students. I believed my focus could then move towards developing additional collaborations rather than focusing on the recruitment and organising of visits.

6.5 The Beginning of the Digital Health Champion Scheme

The development of the DHC scheme began in September 2018 during the implementation phase of the third cycle. At this point SNaM had taken the decision to amend first-years nursing students' module assessment, replacing the activity whereby students support a beneficiary to use a health website with an alternative digital activity. This provided an ideal opportunity to create the DHC scheme, a tiered award to offer students the chance to take part in a range of activities to support known beneficiaries and local communities.

The insider-outsider team reflected on having a three tiered award. If students were to support local communities in becoming aware of and using digital health, students with less confidence or knowledge in the first instance may feel more comfortable supporting someone they know. Through recognising their own abilities and developing their skills and knowledge, they could progress to supporting local communities. For a bronze award, it was proposed that students would invite students to support people they know just as explored within this PhD's first cycle. The silver and gold awards would encourage students to support a person, family, or organisation in using health technology and in understanding how to identify reliable and trustworthy resources online while learning about their experiences of healthcare. The next chapter continues to discuss the third cycle and presents the development of the DHC scheme, as a result of collaborative working with stakeholders.

6.6 Summary

This chapter has presented the findings from the trialled home-visit model whereby students support service users and/or carers in their home to use a health website, and a general model where nursing students can support local communities via linking with local organisations and projects. The feasibility of a home-visit model in its current form was brought into question, yet a general model provides a feasible way for students to support local communities. The next chapter will discuss the development of the DHC scheme drawing on the findings across the three CAR cycles.

Chapter Seven: Development and Implementation of the Digital Health Champion Scheme

7.1 Introduction

This chapter discusses the formation of the DHC scheme as part of the third cycle. The intention was to bring together both a home-visit and a more generic model offering students a range of opportunities to support local communities in becoming aware of and using digital health. This chapter will firstly present the latest version of my PhD's DHC scheme (September 2019) before describing its development. There have been three previous versions of the scheme, each one being developed within the third cycle (see figure 4.1). This chapter will highlight what factors the scheme has had to address in order to be successfully embedded into the new nursing curriculum.

7.2 Digital Health Champion Scheme (September 2019)

The NMC approved the University of Plymouth's new nursing curriculum to commence as of September 2019. The curriculum was rolled out to first-year nursing students as well as second-year students who transitioned across to the new curriculum. The development of WPE over the years led to embedding the notion into the new curriculum as a philosophy, a thread through the curriculum, whereby students would undertake WPE activities choosing from a menu of options. Previously WPE was an extra-curricular activity that students were encouraged to undertake, however, this is now compulsory and students are

questioned on their activities as part of their third-year viva. The DHC scheme is one of the WPE activities students could choose to undertake.

Over the summer of 2019, webinars were delivered to remind staff and students of the concept of WPE prior to September. As part of the webinars, I spoke about the DHC scheme and highlighted the opportunities available to students in supporting local communities. Documents regarding the DHC scheme were uploaded to the University of Plymouth's digital learning platform (Moodle), an internally facing page for both students and staff to see. Prior to documents being uploaded to Moodle they were disseminated via email amongst stakeholders (existing DHCs and academics), inviting them to feedback their final thoughts. This included the developed criteria, a presentation providing an overview of the scheme, a video of me explaining the scheme, and presentations from students who had previously become DHCs.

The scheme's criteria was developed with stakeholders between December 2018 to August 2019, with the aim of providing students and staff with guidance (figure 7.1). Insiders (nursing students who had become DHCs and academics) were key to the criteria's development. They offered feedback around the terminology used, the distinction between the different tiers, and whether it fulfilled its purpose of guiding students and staff. The criteria was officially shared with students and staff in September 2019. Following this, I took the criteria to organisations who might be interested in developing a similar award for community volunteers and existing community digital champions. I was aware the criteria would need to be adapted, in particular the language;

however, I felt it was important to share the scheme's criteria and explore and extend collaborations.

Figure 7. 1: Criteria for the nursing curriculum's Digital Health Champion scheme (September 2019)

If you:	Bronze	Silver	Gold
	You are new to digital health (sites, apps and/or technology). You would like to develop some basic digital skills and develop your approach to support people known to you to use digital health.	You have an awareness of digital health (sites, apps and/or technology) but are keen to learn more. You haven't experienced introducing digital health to a service user and/or carer, but would like the opportunity to support your local community and widen your knowledge.	You are confident in discussing and demonstrating digital health (sites, apps and/or technology). You would like to share your knowledge and tailor your support to service users and/or carers, as well as the chance to critically reflect on what matters to service users and/or carers.
Criteria			
Knowledge of digital health	Able to describe a site, app and/or technology.	Able to identify the strengths and limitations of numerous sites, apps and/or technology.	Able to critically analyse sites, apps and/or technology, as well as the benefits and barriers of digital health.
Showing sites, apps and/or technology to a person/family	Able to discuss a site, app and/or technology to people known to you (family member, friend or neighbour).	Demonstrated sites, apps and/or technology to service users and/or carers.	Confidently demonstrated sites, apps and/or technology to service users and/or carers, as well as identifying novel ways digital health could be used within healthcare.
Tailored support	Familiar with the shared decision-making process and how to tailor support to meet the person's/family's needs and wants.	Able to tailor support to the service users and/or carers needs and wants.	Able to critically reflect on the shared decision making process. Confidently tailored support.
Person's/family's experience of healthcare	Gain a broad understanding of the person/family experience of healthcare.	Able to demonstrate a greater understanding of what matters to service users and/or carers as a result of listening to their experiences of healthcare.	Able to critically reflect on the service users and/or carers experience of healthcare, reviewing what matters to them, and understanding whether their voice is being heard by healthcare services.

The tiers allow students to undertake as little or as much as they want as part of WPE. The tiers cater for students with varying digital skills and/or confidence towards digital health, something that was evident within first-year students' reflective logs when supporting a family member, friend or neighbour. There was a need to create a set of criteria to guide students and staff as to what constitutes a bronze, silver and gold tier. The criteria covers four key areas: knowledge of digital health; the showing of apps, websites and/or technology; tailoring provided support; and gaining greater understanding of a person's or family's experience of healthcare. The terminology used to describe each tier and area was aligned with specific academic levels. For example, bronze is aligned with level 4, silver with level 5 and gold with level 6. By using terminology aligned with specific levels, this would help both students and staff to understand and be able to differentiate between the various tiers. The scheme offers flexibility in that it is not linear. Students do not have to undertake bronze, then silver and then gold, they can jump to a level they feel willing and able to complete. For example, for first-year nursing students who are confident in their digital and communication skills, they may choose to focus on becoming a Gold DHC. Whereas, a second or third-year student who is less confident in using technology, may choose to become a Bronze DHC.

The scheme aims to support students in developing their knowledge, skills and confidence, catering for all abilities. The bronze award allows students who are new to digital health (health websites, apps and/or technology) or lack confidence in talking to others, the chance to develop some basic digital skills as well as their approach to support people known to them to use digital health.

The silver tier is aimed towards students who have a basic awareness of digital health (health websites, apps and/or technology) but are keen to learn more, as well as students who have not experienced introducing digital health to a service user and/or carer. The gold tier is geared towards students who are confident in discussing and demonstrating digital health (sites, apps and/or technology), and would like to share their knowledge with a person, family, or organisation by tailoring their support.

7.3 Iterations of the Digital Health Champion Scheme

Stakeholder feedback has continuously been reflected upon and balanced, informing the schemes development. This led to three previous versions of the DHC scheme within this PhD (table 7.1). The following sections (7.4, 7.5 and 7.6) will present how the scheme evolved as a result of stakeholder feedback.

Table 7. 1: Iterations of the Digital Health Champion scheme

	First iteration (September 2018)		Second iteration (October 2018)		Third iteration (December 2018)		Digital Health Champion Scheme (rolled out in the new curriculum as of September 2019)	
Tiers	Bronze (20 points)	A) Showing 2-3 people how to access a health website or app (10 points).	Bronze	A) Showing at least two people who are inexperienced in using the internet for health how to access a health website or app.	Bronze	Showing at least two people who are inexperienced in using the internet for health how to access a health website or app.	Bronze	Supporting people you know. To show at least two people (family member, friend, neighbour) who are inexperienced in using digital health how to access a health website or app.
	Silver (40 points)	B) Attend an EPIC workshop and contribute ideas on how digital can meet different needs (10 points).	Silver (complete bronze and silver activities)	B) Attending at least one workshop or roadshow offered by EPIC, Innovation in Healthy Ageing, Healthwatch.	Silver (complete bronze and silver activities)	Attending at least one workshop or roadshow offered by EPIC, Innovation in Healthy Ageing or Healthwatch.	Silver	Supporting the local community. To support one person/family/organisation to use digital health. This could be through: your placement, local organisation, local project, support groups or local library.
	Gold (60 points)	C) Support patients in using the internet for health whilst at a GP surgery (20 points). D) Supporting your local community in using the internet for health via home- visits, linking	Gold (complete silver and gold activities)	C) Working with organisations/tea ms to develop ideas and e- health solutions. For example working with EPIC, Innovation in Healthy Aging, Healthwatch. D) Support your local community in using the	Gold (complete silver and gold activities)	Supporting at least one person/family in: a public setting (library, communal areas, care homes), or an NHS setting.	Gold	Supporting the local community. To support one person/family/organisation to use digital health. This could be through: your placement, local organisation, local project, support groups or local library.

	with Healthwatch, and/or service user organisations (30 points).	internet via the Citizen Contact Project. Supporting at least four people: in their home, via Healthwatch drop in sessions (care homes, communal areas, entrance of hospitals, GP surgeries).		
Recognising students' achievements	Not explored at this stage.	Students would receive a certificate as recognition. Those attaining a silver award would also be given a pin badge, and those attaining gold would receive a pin badge and have the chance to present at a conference.	Students would receive a certificate, and have their name in the university's student bulletin. Those attaining a silver award would also be given a pin badge, and those attaining gold would receive a pin badge and have the chance to present at a conference.	All students would receive: Certificate for their portfolio and CV. Names would be identified in the University's student bulletin.
Students evidencing their participation	Students were asked to write a reflection to evidence their participation. They would upload their reflection to their portfolio under WPE. This would then be shared with their personal tutor who would review their reflections.	Unchanged	Unchanged	Students were asked to write a reflection to evidence their participation. They would upload their reflection to their portfolio under WPE. This would then be shared with their personal tutor who would review reflections against set criteria.
Ways students find out about opportunities	Students were encouraged to contact me if interested in becoming a DHC.	Students were encouraged to follow me on Twitter as I tweeted about potential opportunities.	I tweeted about opportunities, but students could also sign up to receive emails.	I tweeted about opportunities. Students were also encouraged to contact organisations, projects or groups themselves.

How long does it take to become a DHC?	Not explored at this stage.	Students could become DHC at any time over their course. Students could do as little or as much as they liked. This is because the scheme was one of many activities students could undertake as part of WPE.	Unchanged	Unchanged
Training for students	<p>Training available to students across tiers:</p> <p>For the bronze tier, students were expected to undertake research themselves before introducing a health website or app.</p> <p>For the gold tier, students accessed training either delivered by Healthwatch Torbay or myself.</p>	Unchanged	Unchanged	<p>Training available to students across tiers:</p> <p>Students undertake Digital Professionalism as part of NRS410.</p> <p>Healthwatch Torbay have free online training - https://www.digitalhealthdevon.co.uk/</p> <p>Develop an understanding of how you and others can identify those reliable and quality websites - https://medlineplus.gov/webeval/webeval_start.html, http://www.library.wmuh.nhs.uk/pil/health%20information.htm</p> <p>Undertake research to learn about a particular website, app or technology.</p>
Type of activity	An extra-curricular activity part of WPE.	Unchanged	Unchanged	WPE has been made compulsory within the University of Plymouth's new nursing curriculum. The DHC scheme is one option students can choose to undertake. Students will be questioned on their WPE activity as part of their viva in the final year before qualifying.

7.4 First Iteration of the Digital Health Champion Scheme (September 2018)

This section highlights how I worked with stakeholders to develop the first version of the DHC scheme (September 2018).

7.4.1 Second-Year Nursing Students Informing the Scheme

In September 2018, a total of 141 second-year adult nursing students across Exeter and Plymouth attended lectures delivered as part of their 'Promoting Health and Wellbeing Module'. As part of the lectures, I was given the opportunity to present to students about my PhD and collect feedback to inform the schemes development using TurningPoint (a tool capturing live polling). One hundred and thirty-one students provided feedback. My presentation was aligned with the delivered lecture, specifically around collaborative working, self-management and engagement.

Firstly, it was important to explore with students whether they understood the concept of WPE. If the DHC scheme was to be embedded into WPE it was important to recognise whether students understood the concept of WPE and if not take the time to explain, prior to gaining feedback towards the scheme. Sixty-five percent of students understood the concept of WPE, whereas the remaining students reported that they did not understand. It was important to remind them about the aims of WPE to help develop their understanding and highlight the resources available to them online.

The presentation explored with students whether they had undertaken any WPE activities. Considering that at this stage WPE was an extra-curricular activity, 47% reported that they had done some form of WPE, while 42% had not and 12% were unsure. Students provided limited details about the WPE activities they had undertaken as they had a short space of time to reply within the lecture. Examples of WPE activities include:

- attending and/or working with various patient groups,
- networking with various healthcare professionals and organisations such as Care Opinion and Age UK,
- undertaking training such as Parkinson's Medication Pump Training,
- following a patient's journey, and
- supporting research, for example questionnaires being undertaken by patients towards stays in hospital.

The presentation then explored the extent to which students might be interested in becoming involved in a home-visit model and/or a general model. At this point, the scheme was an extra-curricular activity linked with WPE. Figure 7.2 shows that the students' level of interest varied towards both models.

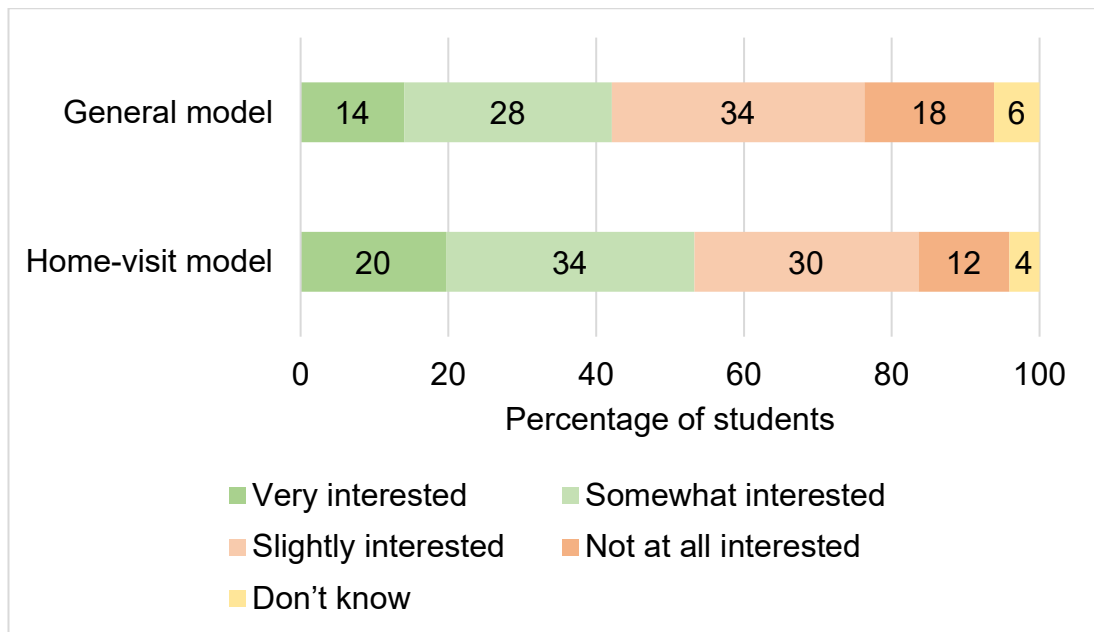


Figure 7. 2: Percentage of students interested towards a home-visit (n=122) and/or general model (n=114)

Students were asked why they voted a particular way and I have identified key themes.

7.4.1.1 Perceived Barriers

Students identified time constraints as being a main barrier to taking part in either model. Their workload had already reached or was reaching capacity, and as these were extra-curricular activities, students indicated that they would be prioritising their studies.

Some students stated that they would struggle teaching another person about health websites as they themselves lacked confidence or knowledge. This barrier shows the need to support students in developing their skills and knowledge towards digital health, as they will need to be able to signpost service users and carers to resources as a qualified nurse.

Students questioned the safety of meeting a stranger in the community or in their home, and raised concerns about meeting a hostile patient. As explained within the presentation, safeguarding procedures were in place for both students and the person they would be supporting. With regards to a general model, students recognised that it would not provide them with the opportunity to see the person in their home environment, and that offering drop-in sessions was less personal and considered uncomfortable for either them or the person they would be supporting. Students reflected on how both models were structured. Some students were genuinely not interested in either model but did not offer any further feedback; while others indicated which model they favoured and identified positives.

7.4.1.2 Positive Comments Toward a Home-Visit Model

Positive comments focused on what they liked about the structure as well as the potential benefits. Students seemed to like the notion of talking to and signposting their community to helpful resources. One student identified that they liked this model, as it was not something currently offered to students, while others reflected on how it linked with WPE and provided structure.

Many students' commented on seeing a patient in their home environment but it was not always clear whether students were positive about seeing a person in their home environment and having this experience, or perceived it to be concern. Where students provided clarification, a home-visit model was perceived to be a good experience whether for themselves (improving their CV, gain experience of supporting others), or for the people they would support.

Comments referred to developing their own skills and knowledge. One student was interested in linking this model to patients being discharged and offering them support in using health websites at home. An interesting idea that could be explored if the approach was deemed feasible.

7.4.1.3 Positive Comments Toward a General Model

Students were generally positive towards the idea and appreciated the approach aimed to signpost people to trusted resources in a safe setting. Students seemed to like the idea of this model being linked to WPE. One student proposed that the approach would 'empower patients', while another perceived it to be of benefit to them.

By understanding students' thoughts towards the proposed models, I was able to share the findings with stakeholders. A lack of time remained a major factor as the activities were extra-curricular. It emphasised the importance of embedding a feasible and accepted model into the curriculum. This is because extra-curricular activities were not a priority for students. The comments also highlighted the importance of offering students the chance to undertake a range of digital health activities to suit the different abilities.

7.4.2 eHealth Productivity and Innovation in Cornwall and the Isles of Scilly Project Informing the Scheme

Discussions took place with the EPIC team to explore how the project could link with the DHC scheme. EPIC were keen to involve healthcare students within the project, inviting them to contribute ideas towards how technology could

meet service users and carers needs, and providing the chance to support EPIC events, aiming to increase local communities awareness of digital health. I talked with the team about the notion of having a bronze, silver and gold award and how the digital health activities EPIC offered would need to encompass WPE; therefore fitting into the DHC scheme. It was agreed that the activities offered by EPIC would align with the silver award, as students were not supporting known beneficiaries to use digital health but supporting attendees alongside EPIC.

7.4.3 Healthwatch Torbay Informing the Scheme

Discussions with Healthwatch Torbay took place regarding their existing work, and whether they were interested in offering opportunities to students to support local communities in becoming aware of and learning about digital health.

Healthwatch Torbay were keen to involve students in supporting the delivery of drop-in sessions. This activity was included within the scheme under the gold award, as students would need to undertake training delivered by Healthwatch Torbay before working with them to support local communities. It was agreed that I would invite students studying nursing in Exeter and Plymouth. Together we would explore ways of working with Healthwatch Cornwall and offering a similar opportunity to Truro based students.

7.4.4 Amendments to the First Iteration of the Digital Health Champion Scheme

Within this first iteration, the EPIC Project and Healthwatch Torbay agreed with the structure of the DHC scheme and their involvement. EPIC had previously

agreed to align their activities to a silver tier. The project were also keen to involve students in the development of e-health solutions and linking this with the scheme's gold tier. This was explored with collaborators and then introduced within the scheme. Similarly, Healthwatch Torbay had agreed to offer activities for students to achieve their gold award. They also highlighted activities that would align with a silver tier. These were discussed with collaborators and embedded within the next version to give students more choice.

Students raised concerns that the activities embedded within the scheme were extra-curricular, leading to an increase in workload. This was something collaborators were keen to avoid. Collaborators continued to explore whether WPE and therefore these activities could be embedded within the curriculum, and in the meantime identified ways to recognise the students' achievements. Students were positive towards the notion of writing a reflection to evidence their participation and agreed the activities linked with WPE.

7.5 Second Iteration of the Digital Health Champion Scheme (October 2018)

This next section focuses on how students fed into the development of the October 2018 Digital Health Champion scheme.

7.5.1 First-Year Nursing Students Informing the Scheme

In October 2018, first-year nursing students across fields and locations were invited to take part in a DP lecture whereby they provided feedback towards the idea of students becoming DHCs. First-year nursing students were invited to feedback on the schemes development. If the scheme was successfully built into the new curriculum as part of WPE, there was potential for first-year students progressing into their second-year to transition across into the new curriculum. It was therefore important to gain their input, exploring whether they would be interested and how they perceived the scheme to be embedded. A total of 358 students participated. Not all students answered every question.

7.5.1.1 Feedback Toward the Digital Health Activities or Events

Students were asked to identify which of the listed activities or events they would participate in, if any. Activities were taken from the DHC scheme (October 2018). Students based in Plymouth and Truro were able to select multiple activities. A technical issue meant Exeter students could only indicate one activity.

Fifty-seven percent of students were interested in showing at least two people who are inexperienced to use a health website or app, and forty-three percent were interested in attending at least one workshop or roadshow linked to digital health. Students were less interested in developing new ideas to using health technology, as well as the various models as shown in figure 7.3. Students keen to participate in a home-visit model identified the potential of linking the activity

within their district nursing placements. I explored whether this was a possibility, so long as students had agreement from their placement mentor and tutor.

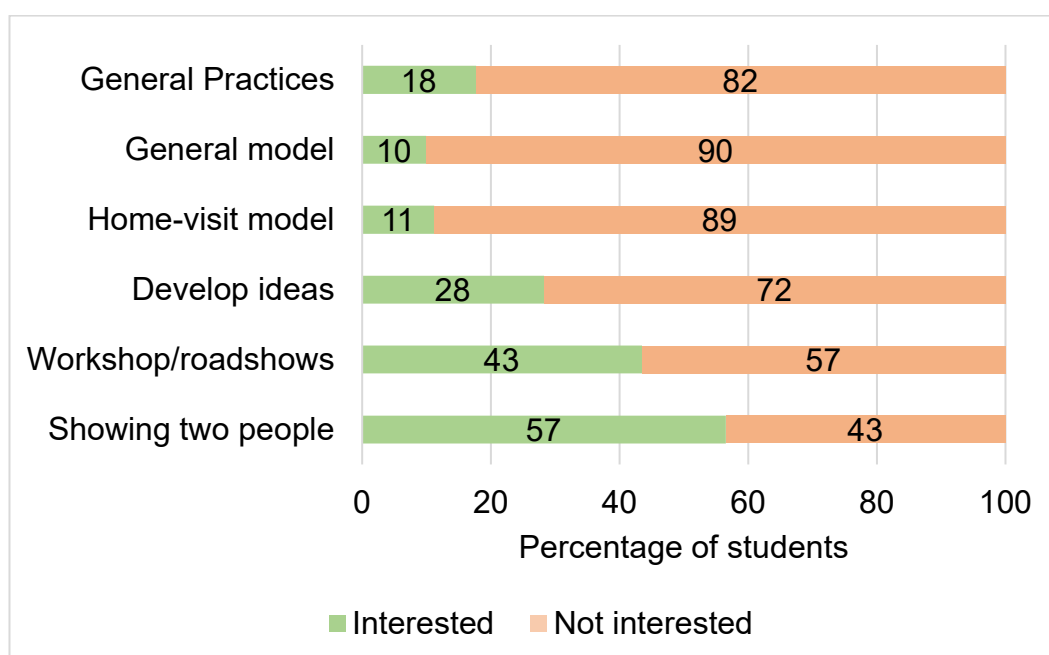


Figure 7. 3: Percentage of students (n=322) interested in digital health activities or events

Students were invited to suggest additional digital health activities or events they would like to see included within the scheme. Suggestions included having a wide range of digital health activities or events; however, a large proportion of students were unable to suggest or give guidance as to what these opportunities could be. On reflection, if students were lacking knowledge or skills towards digital technologies identifying potential activities or events would indeed have been difficult. Students identified topic areas they felt digital health could link with as part of the scheme, this included medication difficulties, patient feedback and health promotion such as a roadshow to support young people in identifying signs and symptoms of a health condition. Robotics, apps and social media were also areas students found to be of interest.

A few students questioned whether training sessions or workshops would be available to support students in developing their learning of digital health, prior to taking part in the scheme. Training was available to support students. This showed the presentation required a stronger emphasis on available training opportunities. At this stage the training was either delivered by Healthwatch Torbay or myself depending on the activity.

7.5.1.2 Feedback Toward a Tiered Award

The presentation proposed to recognise students for their contribution by offering tiered awards as shown in figure 7.4. Students were asked to vote how happy they felt about the proposal ('happy', 'quite happy', 'slightly happy', 'not happy', 'don't know'). Of those who voted (n=252), 49% were 'happy' with the proposed approach, and 32% were 'quite happy'. Students agreed that presenting at a conference should be optional, as this would deter some students from completing their gold award. Offering a certificate to add to their CV or portfolio was an idea supported by students. One student felt that they did not need any recognition if they took part in the scheme.

How to recognise your achievement?

bit.ly/PlymPoll
ID Session: 641006

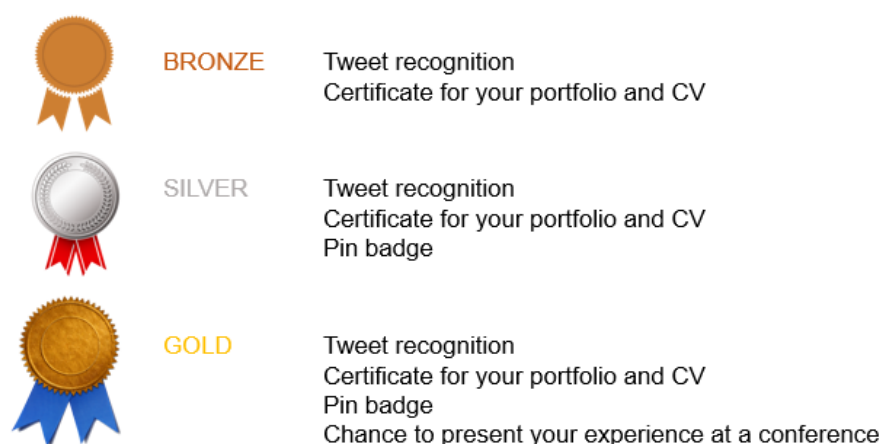


Figure 7. 4: Recognising students' achievements with tiered awards

Students were given the opportunity to suggest other ways in which we could recognise their contribution. Comments included money, a logo for students to add to their profile picture, every award achieving a pin, recognition via a website or newsletter, a mini presentation to other students, lanyards rather than pin badges, a letter to confirm their participation as proof for future employers and for the award to be recognised by a known body.

7.5.1.3 Feedback Toward Promoting Digital Health Activities or Events

Students were asked to indicate whether they would like to be informed about digital health activities or events via Twitter ('yes, I like the idea', 'no, I don't like the idea', 'don't know'). This was proposed as students are introduced to Twitter within their first few weeks of commencing their nursing degree. Of those who responded (n=310), 74% were happy with this approach, 13% preferred an alternative method such as email and a further 13% did not know. I advised

those students not wanting to use Twitter to email me, so I could develop a list and forward any opportunities using their preferred method of contact.

7.5.1.4 Levels of Interest Toward the Digital Health Champion Scheme

Students were asked whether they might be interested in becoming a DHC. Of those who answered (n=277). Half of the students were 'very interested' or 'quite interested' in becoming a DHC. Seventeen percent were 'not at all interested' in participating in the scheme (figure 7.5).

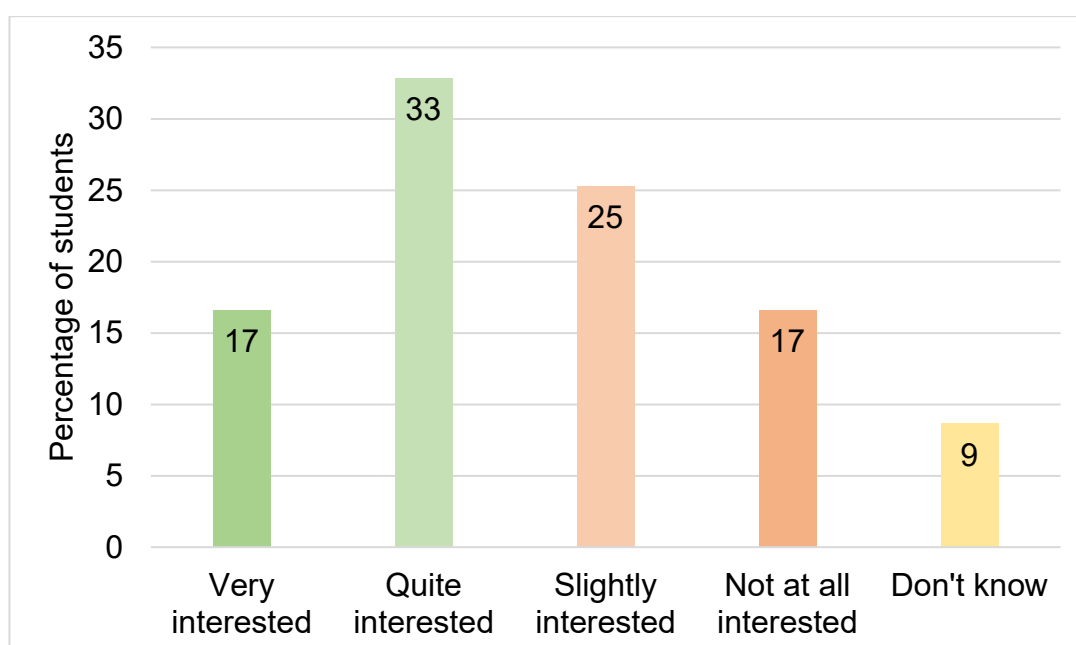


Figure 7. 5: Percentage of students (n=277) interested in becoming a Digital Health Champion

Students identified a number of benefits to becoming a DHC. For example, having the opportunity to develop their skills and knowledge as well as being able to help others. Those interested in becoming a DHC felt it would enhance their CV and/or portfolio, and in turn be of benefit to their future employment and career. Students also felt the scheme would be of benefit to the nursing

profession when considering the future use of technology, of benefit to those living within rural areas, and provide opportunities to spread knowledge of digital health to local communities.

Students felt that additional information would be needed about the DHC scheme before they took part. One student identified that they did not understand the concept, while a couple of students questioned the benefits of taking part in the scheme. Concerns were raised about the scheme. Students were worried about the amount of time they would be able to dedicate to becoming a DHC. As this scheme was an extra-curricular activity, students were concerned about their workload and felt it would take up too much of their time. Students suggested making the scheme easy to complete and having the scheme built into the course as part of their learning, whether via lectures, practice hours, or placement. Other concerns included the scheme being introduced too early in the course, as well as students not believing in their own ability to use digital health. Some students indicated their dislike or uncertainty towards technology and/or social media.

7.5.2 Amendments to the Second Iteration of the Digital Health Champion Scheme

The presentation encouraged students to feedback their thoughts towards the idea of becoming a DHC. Therefore, it was essential to reflect on their comments and adapt the scheme accordingly. Since WPE and the scheme had not yet been embedded into the curriculum, it was still an extra-curricular activity. This continued to be a concern for students and something

collaborators continued to explore. With regards to the scheme's structure, a home-visit model was presented to students but shortly after it was deemed unfeasible. Students interested in a home-visit model suggested linking the activity with district nursing placements. This was explored as a concept with collaborators before introducing placements as an additional option within the scheme.

The majority of students were happy with how the scheme had proposed to recognise student's achievement; however, the chance to present at a conference was removed, as this was seen as a deterrence for some students. Additional suggestions were made, and explored with collaborators (in particular SNaM staff) to ensure they were appropriate and to confirm their sustainability. Most students were happy with me identifying opportunities via Twitter, but there was a small percentage of students wanting an alternative method such as email. It was agreed with collaborators that this would be trialled and reviewed again in the next version of the DHC scheme, to explore if this could be sustained after the completion of my PhD.

7.6 Third Iteration of the Digital Health Champion Scheme (December 2018)

In December 2018, I presented the DHC scheme back to first-year nursing students and to SNaM staff to explore their thoughts towards, highlighting how the scheme had or had not changed due to feedback, and to explore the scheme's sustainability. Alongside this, I organised an event inviting a range of stakeholders to inform the development of the scheme.

7.6.1 First-Year Nursing Students Informing the Scheme

I took the opportunity to present the DHC scheme to nursing students across all three sites as part of a lecture discussing the concept of WPE. As part of this, I organised for Healthwatch Torbay to share their project findings and promote opportunities for Exeter and Plymouth students to work with them. To ensure the lectures were consistent across teaching sites, it was organised for Healthwatch Cornwall to speak to Truro based students.

Students did not provide any additional recommendations or comments towards the scheme; they only voiced the need to embed the scheme into the curriculum in order to make it feasible and sustainable as time remained to be a barrier to taking part. A handful of students were interested in becoming a DHC and asked for a training session to be delivered in January 2019 while they were on placement. Unfortunately, a training date could not be organised. However, I did invite students to be involved in the Echo Spot Project (funded by EPIC and Cornwall Council), whereby they supported Cornish care homes in using a smart speaker with their residents. For Plymouth and Exeter based students, I advised them to contact Healthwatch Torbay to undertake their online training to further develop their knowledge. They could then attend a drop-in session and support Healthwatch in delivering and/or setting up a session within their own local community, and/or further developing project materials.

7.6.2 Staff from the School of Nursing and Midwifery Informing the Scheme

The DHC scheme was co-presented with a nursing lecturer at a SNaM School Away Day in December 2018. The notion was to explore with academics their thoughts towards the proposed scheme and attempt to recruit staff to become involved in its continuation, if successfully embedded into the new nursing curriculum. An information leaflet was created and presented to SNaM to recruit members of staff. The leaflet detailed the scheme, their potential involvement, as well as the involvement of external organisations.

Staff were in agreement that the scheme would offer students opportunities to support local communities in using digital health. However, staff queried how students' achievements would be recognised. One academic identified that lanyards would be an inappropriate method to recognise students' as DHCs as students are not allowed to wear lanyards on placements, leading to confusion. Pin badges were felt to be more suited yet raised the issue of students having too many pin badges to wear, and the need to be wary that some organisations do not like students wearing pin badges.

Discussions also took place concerning the implementation of the scheme within the curriculum. It was accepted that the scheme could be part of WPE in the new curriculum. I explored with staff the idea of people across sites becoming involved in the running of the scheme so that it could continue after my PhD. Previous findings have already identified the need to be mindful of staff workloads as well as students. I therefore suggested having numerous

staff members supporting the scheme across the three sites. Preferably two members of staff in Truro and Exeter, and at least two in Plymouth. A handful of staff across nursing and midwifery showed an interest in taking the scheme forward. As a result, in February 2019 I identified, invited and presented to nine interested staff (one midwifery lecturer, eight nursing lecturers) about the DHC scheme to gather feedback towards its continuation. Nursing staff were across the three sites. Within the webinar I presented the various tasks currently being undertaken within the project before proposing how they could be disseminated amongst staff, organisations and projects so that the scheme could continue. I proposed having a DHC team as shown in figure 7.6.

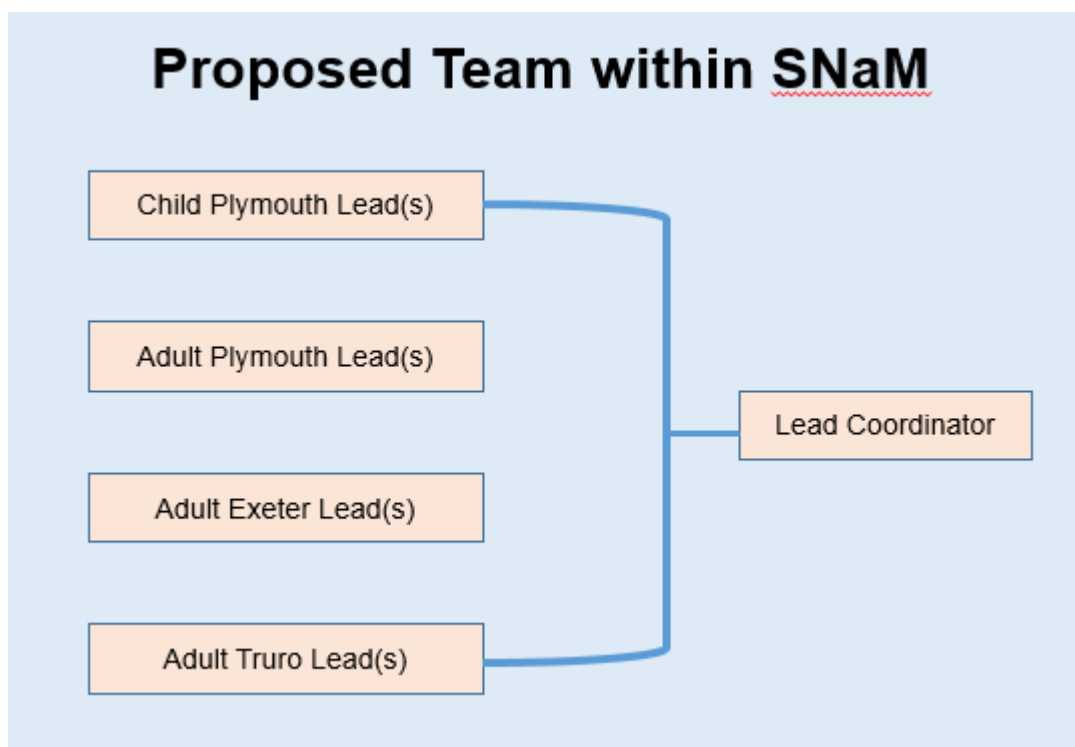


Figure 7. 6: Proposed structure for a Digital Health Champion team

I created a list of tasks staff could potentially take responsibility for, being mindful of workloads:

Together the team could:

- promote the scheme to students and staff (via lectures such as DP and WPE),
- share and develop training materials, and
- review reflections deciding on whether students have achieved bronze, silver, or gold award, and give out the award.

Staff leads:

- update students about opportunities (via Twitter, email and through a website currently being developed by Healthwatch),
- continue to develop new opportunities (reflect together as a team),
- monitor the Healthwatch Torbay website to see what opportunities students are undertaking in their field and location, and
- monitor a generic inbox (digitalhealthchampions@plymouth.ac.uk) set up for students to email their reflections and ask about opportunities.

Lead coordinator:

- continue developing the website with Healthwatch Torbay,
- organise bi-monthly or quarterly skype meetings for the DHC team to get together, and
- update staff on the scheme (via School Away Days).

Feedback suggested that there was a need to identify exactly how much time it would take to undertake tasks for staff to see if they had capacity to be involved and to what extent, if at all. On reflection, the list of tasks was too long.

Therefore, I attempted to reduce the list by undertaking activities myself before passing on responsibilities. For example, supporting Healthwatch Torbay in developing their website, developing a more efficient way for students to forward their reflections for review and recognising their achievements, and to adapt the way in which students are told about digital health activities or events.

7.6.3. Organisations and Projects Informing the Scheme

The DHC scheme was shared with various organisations and projects across Devon and Cornwall. The aim was to explore their thoughts towards the schemes implementation, and discuss its continuation. Conversations took place with Healthwatch Torbay, Cornwall's Digital Inclusion Team, Age UK Cornwall, and EPIC. We discussed potential opportunities whereby nursing students could support or link with their local organisation or project as well as whether they felt the DHC scheme could be adapted for community volunteers.

7.6.3.1 eHealth Productivity and Innovation in Cornwall and the Isles of Scilly Project

I shared the idea of DHCs with the EPIC team. Initially we identified opportunities for students to link with the project and support local communities to learn about digital health. They were happy to forward any opportunities they thought were relevant to me, so I may tweet students on their behalf. Digital health opportunities included supporting the EPIC team at events by introducing attendees to technology (such as companion robots and virtual reality), identifying organisations or groups that would benefit from linking with EPIC, and supporting projects such as the jointly funded Echo Spot Project. The

project offered undergraduate students studying nursing or occupational therapy as well as healthcare students in schools the opportunity to support Cornish care homes in using a smart speaker with their residents.

The EPIC team were keen to support the development and implementation of the scheme within the nursing curriculum and to share the idea with other healthcare professions. We discussed the structure of the scheme, what kind of activities constituted to a bronze, silver and gold award, as well as how we intended to recognise students' achievements. There was general consensus that the EPIC project could offer a range of digital health activities to students (although the project would finish at the end of April 2020) and were content with a tiered award. The team supported the idea of students receiving a pin badge as recognition, and were happy to support the development of 100 badges for students. This then raised questions about the sustainability of how we recognise students' achievements. Who would continue to fund the pin badges after the completion of the EPIC project? And how would the badges be disseminated once my PhD was completed?

7.6.3.2 Healthwatch Torbay

The scheme was shared with Healthwatch Torbay to explore their thoughts towards adopting the scheme for their Digital Champions (community volunteers). Healthwatch Torbay were interested in adopting the tiered award to reward those undertaking their online training but found this difficult to implement due to technical barriers when developing their website.

7.6.3.3 Age UK Cornwall

The scheme was shared with Age UK Cornwall. They were working to provide service users living at home the chance to learn about and use Echo Spot devices. They were keen for their community volunteers in becoming DHCs. Conversations about volunteers' as DHCs was something we will continue to explore.

7.6.3.4 Digital Inclusion Team

The Digital Inclusion Team are based within Cornwall Council. Together they and NHS Kernow recruited and trained Digital Champions to support those wanting to develop their digital skills and confidence. Their training covered basic digital skills such as web-conferencing and web searching as well as how to use specific health websites and apps. The project has a long list of people waiting for support with a number of courses organised. In August 2019, I met with the Digital Inclusion Team to learn about their projects, and to share details concerning the DHC scheme and the EPIC Project. We explored ways in which we could work together without reinventing the wheel.

The team offered to support the scheme, by providing students' the opportunity to link with their community volunteers (Digital Champions) and trainers. Together they could deliver sessions to help people develop their digital skills and knowledge, and in turn learn from each other regarding their experiences of healthcare and digital health.

Furthermore, we also discussed the potential of adapting the DHC scheme, so that it could be used to recognise community volunteers who become Digital Champions. The scheme in its current format does not use appropriate language, or have a suitable framework for the team or volunteers to follow. At present the Digital Inclusion Team and I are working together to develop a tiered award for volunteers, with an agreement that the team would manage the recruitment, training and awarding of community volunteers their Digital Champion status. A similar approach would need to be explored with other local authorities.

7.6.3.5 Stakeholders at the Digital Health Champions Research Event

The event had a total of 31 attendees (including three speakers). A range of stakeholders attended the event (from the University of Plymouth, Livewell Southwest, Plymouth Libraries, Patients Council, Age UK Cornwall, Plymouth City Council, University Hospitals NHS Trust, Truro and Penwith College, Citizens Advisory Panel and private businesses). Attendees were predominately from the Plymouth area. A leaflet was disseminated amongst stakeholders with details regarding the December 2018 Digital Health Champion scheme, inviting them to feedback their thoughts.

With regards to a home-visit model, attendees agreed that it would be a challenge for either the university and/or another organisation to continue this approach due to the amount of resources it would take to deliver. One attendee provided an example of an organisation currently offering a home-visit befriending scheme, stating that it was currently exploring more online options

due to limited resources. It was acknowledged that home-visits are of benefit, but difficult to sustain. There was general consensus that encouraging students to support service users and carers via public and NHS settings was a good idea. It was perceived to be a feasible and sustainable model, which was aligned with recent documents emphasising the need to support both the healthcare workforce and the public to become digitally skilled and competent.

For the scheme to continue, attendees identified the need to continue sharing the scheme with local organisations, so that those working towards the same aim of helping local communities to use digital health could work together. Connections were made amongst attendees. They began to reflect on ways in which they could link together, as well as identifying future collaborations that the scheme could explore. For example, it was suggested that the scheme could link with:

- The Expert Patient Programme, who support people with long-term conditions to better self-manage their health (based in Plymouth). Students could work with Improving Lives Plymouth to offer drop in sessions as part of this programme.
- Livewell Southwest were keen to work with the university to explore how we could make better use of health technology, although this collaboration was perceived to be too big for students to undertake. However, as a result of Livewell Southwest and the university working together there could be future opportunities for students.
- Further develop our links with Plymouth Libraries as well as libraries across Devon and Cornwall. Libraries are part of the UK Online Centres,

offering free sessions to the public to improve their digital skills. We already encourage students to link with their local library to offer support around health websites and apps, but this rapport could be strengthened.

Attendees from both Livewell Southwest and Plymouth Libraries were keen to work with our nursing students. Although attendees questioned why the scheme had not involved other healthcare professionals such as social workers and physiotherapy students. I explained that my PhD focused on one profession with the hope that other disciplines would become interested in the notion, and subsequently work with me to tailor and embed the idea into their curricula. The idea of sharing the scheme with other healthcare professions has been a reoccurring theme mentioned by stakeholders throughout my PhD. It was perceived that at this point within my PhD it would be advantageous to share my findings with other disciplines, and explore whether the scheme could be adapted and implemented.

7.6.4 Amendments to the Third Iteration of the Digital Health Champion Scheme

An approach to integrate WPE and therefore the DHC scheme into the new nursing curriculum had been proposed. The scheme continued to have three tiers but their descriptions were adapted to reflect collaborators comments. For example, collaborators tended to agree with the wording of the bronze tier but felt the silver and gold tiers needed to reflect that the activity would involve supporting local communities to use health technologies. SNaM staff required

each tier to have its own set of criteria, providing additional guidance towards the learning outcomes. This was developed with collaborators.

With regards to informing students of forth-coming opportunities, the newly introduced email process was not working and there were concerns regarding its sustainability. Therefore the scheme reverted to me tweeting opportunities and encouraging students to contact organisations or projects they wished to support. There was various discussions towards how best to recognise students' participation. Collaborators reflected on what students wanted, against what would be feasible and sustainable. It was agreed that the process needed to be simple. A certificate and recognition through the university's student bulletin would adequately recognise the students' achievement.

Within this final version of the DHC scheme Healthwatch Torbay had developed a training platform. It was of benefit to share this resource with students offering them the chance to extend their learning towards online health services. The platform complemented the students DP lecture and was promoted through the DHC scheme as a way to extend their knowledge.

7.7 Recommendations from Stakeholders

Stakeholders had the opportunity to feedback their thoughts towards the DHC scheme. Recommendations on how to improve or amend the scheme were carefully considered weighing up comments from stakeholders (students, organisations, projects, event attendees and academics). Table 7.2 identifies recommendations from stakeholders, how I balanced feedback and therefore amended the scheme to create the latest version of my PhD's DHC scheme (September 2019) presented in section 7.2.

Table 7. 2: Stakeholders feedback towards the Digital Health Champion scheme

	Stakeholder	Form of engagement	Comments	Action	Balancing feedback
Proposed tiers	Students (October 2018)	Voting as part of a lecture and through informal discussions.	For there to be a wide range of digital health activities or events.	PROPOSED ACTION: Identify additional digital health activities or events for students. Explore future collaborations.	The scheme would need to be further developed. I would need to expand upon the digital health activities and events by exploring additional collaborations with organisations and projects. The scheme would need to be straightforward and easy to understand for both stakeholders (in particular students and academics). I amended the silver award as the activities were not sustainable. I also attempted to make the entire scheme simpler by
	Students (October 2018)	Voting as part of a lecture.	For the digital health activities and scheme to be more straightforward.	PROPOSED ACTION: The scheme was simplified by taking away the proposed point system.	

	Academics (December 2018)	Informally discussed as part of a School Away Day and within meetings to explore the schemes sustainability.	Questioned whether the activities identified in the silver award would be sustainable after projects such as EPIC finish. Suggest a need to change the scheme so it is sustainable.	PROPOSED ACTION: Work with collaborators to develop the scheme further.	aligning each tier to academic levels. It was hoped that by linking the tiers to academic levels this would help guide students and staff in understanding the scheme.
	Research Event Attendees (January 2019)	Informally talked about as part of a research event.	Focus on students supporting local communities in public or at an NHS setting rather than developing a home-visit model.	PROPOSED ACTION: To remove the home-visit model.	Stakeholders felt a home-visit model should be dropped as it was not sustainable. It was felt that time should be spent further developing opportunities for students to support local communities in public or NHS settings.
	Academics (December 2018)	Various meetings reflecting on the PhD findings.	Home-visit model is not feasible or sustainable.		
Recognising students' achievements	Students proposed (October 2018)	Voting as part of a lecture.	A money incentive.	NO ACTION: Money was not felt to be an appropriate incentive and would not be sustainable. Therefore, it has not been explored.	Stakeholders agreed a money incentive was not suitable.

	Students proposed (October 2018)	Voting as part of a lecture.	Having the award accredited by a known body.	NO ACTION: This could be a change explored in the future, but it was important to initially focus on creating a feasible scheme.	
	Students (October 2018)	Voting as part of a lecture.	A logo for their profile picture	PROPOSED ACTION: This was added to the list of ways students would be recognised for becoming a DHC. It was perceived to be a feasible way of recognising students' achievements.	
	Students (October 2018)	Voting as part of a lecture.	Pin badges or lanyards	PROPOSED ACTION: To balance stakeholder feedback towards the idea of	Academics did not agree with the proposed approach. Lanyards were not appropriate. Pin badges were a possibility but questioned whether students

	Academics (December 2018)	Informally discussed as part of a School Away Day and subsequently at a number of meetings.	Lanyards were deemed as unsuitable. This was because students should not be wearing lanyards on placements. Pin badges were also questioned as students sometimes wear an array of badges and this is not always allowed on placement.	awarding students with pin badges and lanyards.	would be allowed to wear them on placement. The EPIC team supported the idea of developing either lanyards or pin badges to give out to students. They were happy to support the development and creating the first 100 badges. This brings into question the sustainability of awarding students pin badges.
	Students (October 2018)	Voting as part of a lecture.	Name in the student bulletin	PROPOSED ACTION: This approach added. A simple way of acknowledging to the whole university their contribution, and a way that could be sustained.	
Students finding out about opportunities	Students proposed (October 2018)	Voting as part of a lecture.	Proposed the way in which digital health activities or events are promoted should be changed as not all students like using Twitter. A combination of Twitter and email could be used to inform students about potential activities or events.	PROPOSED ACTION: To balance stakeholder feedback towards what students would like against what can be offered (thinking carefully about resources).	Although students identified another way in which they would like to be told about digital health activities/events, as a researcher/facilitator I would need to identify who would need to continue emailing students after the completion of my PhD. This would in fact increase staff workload something I have been consciously trying to avoid.

	Academics (December 2018)	Informally discussed as part of a School Away Day and subsequently at a number of meetings.	Agreed with students being informed of activities or events via Twitter. It was proposed to also email students but it was questioned about the sustainability.		As all students are introduced to Twitter within their first few weeks, opportunities would continue to be promoted via Twitter.
Type of activity (extra-curricular or embedded into the curriculum)	Students proposed (October 2018)	Voting as part of a lecture.	Concerns were raised about workloads and being able to find time to undertake digital health opportunities around their course. Students questioned whether it could be built into the course.	PROPOSED ACTION: To continue exploring with SNaM how WPE could be included within the new nursing curriculum across sites.	
	Academics (December 2018)	Informally discussed part of a School Away Day and subsequently at various meetings.	There was agreement that the DHC scheme would fit within WPE.		
	Academics (December 2018)	Informally talked about as part of the School Away Day. Explored further within additional meetings.	Academics agreed that students writing reflections was the best way for them to evidence undertaking a digital health activity or event. This is because it is something students are already familiar with doing.	NO ACTION: Written reflections were agreed to be a good way of capturing evidence from students. It was perceived to be sustainable.	

Future collaborations	Organisations and Projects	Multiple informal meetings took place with various organisations and projects whether face-to-face or by telephone.	I approached organisations to explore future collaborations such as the Digital Inclusion Team, Age UK Cornwall as well as linking with colleagues within the university.	PROPOSED ACTION: To continue exploring future collaborations whereby they feed into the schemes development and help to identify and implement approaches to ensure the scheme is sustainable.	Stakeholders agreed that the scheme would need to continue working with existing collaborators as well as explore new collaborations.
	Research Event Attendees (January 2019)	Informally talked about within the research event.	Identifying future collaborations such as working more closely with the library service, Expert Patient Programme and linking with Livewell Southwest.		
	Academics (December 2018)	Informally discussed part of a School Away Day and subsequently at various meetings.	To continue developing collaborations with organisations and projects across sites (Truro, Plymouth and Exeter) offering additional opportunities to students.		
	Research Event Attendees (January 2019)	Informally talked about within the research event.	Roll out the scheme to other undergraduate healthcare students.	PROPOSED ACTION: The scheme has been shared with selected academics within midwifery and occupational therapy.	

7.8 Sharing the Digital Health Champion Scheme with Other Healthcare Disciplines

In the Spring of 2019, lecturers from other disciplines who had previously shown an interest in the DHC scheme were approached. Lecturers within midwifery and occupational therapy were keen to explore the notion of students becoming DHCs. Interestingly for both disciplines curriculum revalidation was impending. There was an opportunity as within the nursing curriculum, to share my findings and work collaboratively to support both programmes in adapting the scheme, with the hope of embedding it into their new curriculums.

In April 2019, a lead Professor based in SNaM applied for funding from Cornwall Council offering both nursing and occupational therapy students as well as school students, the chance to become DHCs. Nursing, occupational therapy, the EPIC team and myself, were involved in the delivery of the Echo Spot Project. Although the project came to an end this opened up discussions about how to continue supporting occupational therapy students in improving their digital skills, thus preparing them for the digital future.

Furthermore, I am working with midwifery to trial the idea of midwifery students supporting women and families to use digital health websites and apps. We adapted the training I had developed for nursing students, and delivered it to a small group of eight midwifery students. As part of the students' higher directive study days, it was hoped that they would research health websites and apps as suggested within the training, and explore ways of supporting women and families in becoming aware of and using them. Piloting the idea with a small

group would provide an ideal opportunity to gain their initial feedback. For example, did the approach work as part of higher directive study days? Is it something students would be interested in? Did they have enough time? What was their experience? This is something we are continuing to explore given the positive feedback from both students and ward staff.

The idea of students becoming DHCs was shared with occupational therapy and midwifery lecturers as it was being developed for the nursing curriculum. We were in agreement that although the values behind the scheme would remain the same, how it would be implemented would be adapted as it would not be easily transferred. For example, the nursing curriculum refers to WPE, an aspect the DHC scheme that has been aligned with throughout my PhD. However, occupational therapy and midwifery disciplines are not familiar with this term and therefore we would need to explore where in their curriculum the scheme would be best placed.

7.9 Factors Influencing the Implementation of the Digital Health Champion Scheme

On reflection, it is apparent that a number of factors influenced the embedding of the scheme into the nursing curriculum. Within this next section, I reflect on the factors I believe influenced the implementation.

7.9.1 Clear Aims

From the very beginning of this novel project a clear and concise aim was set, to explore and develop a feasible model with stakeholders providing nursing students the chance to support local communities in using digital health as part of the curriculum. Particular stakeholders continuously provided feedback referring to the 'bigger picture'. Not only did these stakeholders think about the development of a feasible and accepted model, but concurrently about how to embed such a model into the curriculum.

By working together we avoided the duplication of projects and learnt from each other. I appreciate that although we were working towards an agreed goal, stakeholders would still have their own aims and agendas whether linked to funding or key performance indicators. I was always keen to explore how students could become involved; whereas other organisations were keen to ensure digital support sessions were available at particular settings. It was important to ensure the developed scheme complemented existing work undertaken by stakeholders.

7.9.2 Understanding Geographical Remits

Our nursing students undertake placements across three counties (Cornwall, Devon and parts of Somerset). This PhD has focused on working with organisations and projects within Devon and Cornwall to support the development and implementation of the scheme. This is because the majority of our students are based within these two counties.

To successfully develop and implement the scheme, it has been vital to share learning across Devon and Cornwall. Nevertheless, as a researcher/facilitator it was essential for me to be aware of organisations and projects working within particularly geographical remits, which has then influenced the activities and events available to students. For example, Healthwatch Torbay have been leading the way in supporting their local community to use digital health via the Digital Inclusion Project. Due to their success they applied and were awarded funding to share their learning across Devon via the Digital Health Devon Project. Although they are happy to share ideas with organisations and projects based in other areas such as Cornwall, their funding only covers Devon. Likewise the EPIC Project has provided a number of opportunities for students to become involved in supporting others to use digital health; however, they work specifically within Cornwall and the Isles of Scilly due funding from the European Regional Development Fund and South West Academic Health Science. Students based in Plymouth and Exeter could link with the project, but they would be required to travel to Cornwall.

7.9.3 Collaboration Across the Action Research Cycles

Collaborative working with stakeholders (outsiders, insiders and those with dual roles) has led to the development of a feasible and accepted model, whereby students can support local communities to use digital health. Feedback from students and academics primarily informed the implementation, as they were experts in identifying if, when, where and how the scheme could be embedded into the curriculum. Without their collaboration, the scheme would not have been developed let alone implemented in a feasible and accepted way.

7.9.4 Exploring the Development of a Website to Support the Schemes Implementation

Stakeholders had identified that there would need to be a person liaising between organisations and students to share forth-coming opportunities. The development of a web-based interface to facilitate networking between students and local organisations was proposed. We had hoped the website would act as a central point for stakeholders to find out about the project and opportunities available to support local communities in using digital health. Due to limited resources (time, funding), it was thought that a website could manage the brunt of the work, being designed in such a way that students and organisations would link with each other through a web-based interface. There would need to be someone to monitor the website, but was deemed worth exploring by collaborators.

I had hoped to identify an organisation willing to work with me to develop a website that would:

- Inform stakeholders about the project such as the aims, benefits, what the project entails, who is involved, as well as contact information.
- Have sections tailored to each group of stakeholders (students, organisations, projects, service users and carers). Students and organisations would have the ability to create an account and access additional information about the project. We would also have external facing webpages dedicated to carers and service users, informing them about the project.

- Facilitate the matching of students to opportunities to support local communities in using technology. Organisations would be able to upload potential activities or events for students to view and confirm their interest.
- Offer online training to those willing to learn more about digital health.

I explored the possibility of developing such a website with an external web developer. We discussed the purpose, the functionality as well as costing and deadlines. At this point, I was very much aware that my PhD was approaching its conclusion. It was essential to partner with an organisation, project or business to develop such a website working towards a similar goal. I created a leaflet describing how the website could function, thinking carefully about how to reduce administrative tasks. This was disseminated amongst Cornish micro, small, and medium sized business at an EPIC conference. The aim was to identify an organisation, project or business that would be interested in collaborating with me, with the intention of applying for identified funding. Unfortunately, no organisation or business came forward. However, conversations with Healthwatch Torbay led to the idea of them managing the development of a website and taking responsibility for monitoring it. Healthwatch Torbay applied for and was awarded funding to run the Digital Devon Project. They intended to develop a website with online training, continue to offer drop-in sessions to local communities as well as setting up additional sessions.

Students were invited to link with the project and support sessions as part of becoming a DHC. The website covered all aspects proposed above, aside from

facilitating the matching of students with opportunities service users and carers. Instead, Healthwatch Torbay developed a spreadsheet which holds details about up and coming opportunities. This has been shared with myself to keep students updated and to encourage them in contacting Healthwatch Torbay directly. I am currently informing students of opportunities. However, for the scheme to be successfully embedded this will mean a member of staff will need to monitor the spreadsheet and update students.

7.9.5 Embedding the Scheme into the New Nursing Curriculum

The DHC scheme was developed as an extra-curricular activity for nursing students. It was apparent from early in its development that in order for the idea to be implemented it would need to be embedded into the curriculum. Students consistently voiced that they did not have time for extra-curricular activities and therefore although interested in the scheme would not have time to be involved. On reflection, this definitely impacted on student recruitment. Through discussions with insiders and those with dual roles, the scheme became one of a number of activities students could undertake as part of their WPE. WPE has been successfully embedded into the new nursing curriculum as a philosophy running through the programme. Students are expected to undertake WPE at some point within their programme. As a result of WPE being made compulsory, the scheme has been embedded into the new nursing curriculum. I have presented the scheme to first-year students (September 2019) as part of their Digital Professionalism lecture across sites, as well as part of a webinar introducing them to WPE. Without WPE being embedded into the curriculum, the DHC would not have continued.

7.9.6 Proactive Leaders

Our findings clearly show that the involvement of proactive and enthusiastic staff and students has enabled the embedding of the scheme into the curriculum. Their knowledge of the curriculum (when to recruit and involve students), thoughts towards how the scheme could be successfully implemented, as well as inspiring others to become involved has been invaluable. Their passion towards supporting local communities in using digital health has played a key part in preparing stakeholders for a change in the curriculum.

On reflection, having staff and students on particular sites and in particular fields of nursing as leaders, championing the idea of DHCs has been instrumental to the schemes development and implementation. They have provided valuable feedback informing the schemes development (including the creation of the scheme's criteria), and identified additional digital health activities or events that students can become involved with. For example, it was because of a child nursing lecturer showing an interest in my PhD that child nursing became involved, thereby supporting families in their home to use digital health. This meant that Plymouth child nursing students were offered an opportunity they would not have otherwise been offered without her support and leadership. The same can be said for Truro adult nursing whereby staff have continually informed and promoted the scheme, as well as supported the development of digital health activities such as the Echo Spot Project. Having proactive leads across sites and fields has enabled me to undertake this research.

With regards to students, we have a number of adult nursing students who have been and continue to be agents of change. They are exemplars to other nursing students of how becoming a DHC can be of benefit to their learning as well as their future as an e-nurse. These students have supported the development and implementation by continuing to provide feedback, trialling the scheme, and being advocates by sharing their experiences with peers. We have also had a handful of nursing students starting the scheme over the summer of 2019. This may be due to the scheme now being embedded into the new curriculum.

On reflection, students and staff began as insiders informing the development of the scheme but overtime I believe for some their role has changed, whereby they became leaders, championing the idea of students becoming DHCs. Having students and staff across sites and fields who are interested and advocating the DHC scheme has enabled its implementation.

7.9.7 Continued Stakeholder Involvement

For the DHC scheme to be embedded and to continue after my PhD, it was vital to explore with stakeholders (in particular SNaM and local organisations and projects) how they would continue to support the scheme. It was apparent that I would need to recruit staff from within SNaM to support its continuation. As referenced, some staff have championed the idea but I would need to involve them and others in undertaking particular tasks to support its continuation. I had begun to explore this in section 7.6.2 but it became apparent that although staff were interested, they were also concerned with how much time they would need to dedicate to undertake proposed tasks. This is because the work would be an

add-on to their current workload. I therefore explored ways of reducing the proposed tasks. For example, I worked with academics (insiders and those with dual roles) to develop a new way in which students' reflections could be viewed and awarded. Rather than having recruited staff viewing reflections and increasing their workload, students will upload their reflections to their portfolio for personal tutors to read (as per usual). Tutors would then use the developed criteria to identify an award, which would be sent back to the students via their portfolio.

Table 7.3 illustrates how I have attempted to reduce the workload and identify how much time it would take for staff to undertake particular tasks. I am aware that for the successful implementation of the scheme, I would need to explore this further with identified staff and support them in undertaking tasks.

Table 7. 3: Proposed tasks supporting the implementation of the Digital Health Champion scheme

Proposed tasks in section 7.6.2	What have I done in an attempt to reduce the task?	Estimated time to undertake task	Who do I propose could undertake the task?
Promote the scheme to students and staff (via lectures such as the Digital Professionalism lecture, WPE webinar).	I have incorporated the scheme into a WPE webinar and a Digital Professionalism lecture. Staff could use existing presentations to continue promoting the scheme to future students.	The webinar and lecture each last one hour and half hours. The Digital Professionalism lecture was delivered in person so students could interact with technology.	Either recruited staff or those leading WPE and/or Digital Professionalism lectures.
Share materials.	Materials have been uploaded to the learning platform. Materials will need to be uploaded for any new cohorts.	Minutes to upload content to the learning platform.	Lead to upload materials.
Update and develop documents.	Documents will require updating at the end of the academic year. Such as the uploaded presentation. I have tried to create resources in an attempt to reduce future work for staff.	Staff can tailor the documents fitting in with their current workload.	Recruited staff interested in the continuation of the DHC scheme.
Review reflections deciding on whether students have achieved bronze, silver or gold award.	As personal tutors read their student reflections, they could use the developed criteria to award a tier via the online learning platform.	I estimate 15 minutes per reflection. I will need to collect feedback from staff to confirm this.	Personal tutors.

Award students for becoming a DHC (bronze, silver or gold).	Rather than students being awarded each year. Students will be recognised for their achievement at the end of their course.	In the next year, we will be able to see how many students are starting their journey to become a DHC. This will help us understand how much time would need to be allocated to giving out awards.	Recruited staff interested in the continuation of the DHC scheme.
Update students about opportunities via Twitter.	Students will continue to be updated about opportunities via Twitter.	5 minutes per tweet.	Recruited staff interested in the continuation of the DHC scheme.
Continue to develop new opportunities across fields and sites.	New opportunities can be developed overtime, whereby the scheme links with additional organisations and projects. For example, discussions are currently ongoing to explore how child nursing students could support schools around health promotion. One student identified an opportunity to support students, parents/carers by increasing their awareness of an oral health app.	Staff can explore new opportunities fitting in with their workload. Students can explore new opportunities with the support of staff.	Recruited staff interested in the continuation of the DHC scheme.
Monitor the Healthwatch Torbay website to see what opportunities students are undertaking in their field and location.	The website does not need to be monitored as Healthwatch have sent a	Access the database monthly to check the dates and tweet	Lead to access the spreadsheet.

	link to a database that holds details about future drop-ins rather than including it on their website.	opportunities. No more than 5 minutes.	
Monitor a generic inbox (digitalhealthchampions@plymouth.ac.uk). The aim is to keep an eye on how many students are becoming DHCs.	The mailbox will continue. Staff will be able to see how many students have become DHCs. I explored creating a mailbox for each site but it was felt this would make things too complicated.	For recruited staff to curate the mailbox. I propose recruited staff check the mailbox once a month. The amount of time spent curating will vary depending on the time of the year.	Recruited staff interested in the continuation of the DHC scheme.
Continue developing the website with Healthwatch Torbay.	Not needed. As Healthwatch Torbay developed the website.	N/A	N/A
Updating staff on the scheme (via School Away Days, WPE Steering Group meetings).	This will continue, as it is important to update the entire team and share examples of how students have become DHCs.	One School Away Day and one WPE Steering Group meeting a year.	Recruited staff interested in the continuation of the DHC scheme.
Yearly skype meetings for the DHC team to get together.	It would be good for the team to come together once a year to provide feedback and identify next steps.	A one hour annual meeting. There will most likely be actions after the meeting.	Recruited staff interested in the continuation of the DHC scheme.

7.10 Summary

This chapter has presented how the DHC scheme has developed over the third CAR cycle. As a researcher/facilitator my role was to gather stakeholders feedback and balance their comments, amending the scheme as required.

Stakeholders provided feedback on how the scheme could be implemented and sustained after the completion of my PhD drawing on their expertise, knowledge and experience. Thanks to collaborative working, the latest version of the DHC scheme (September 2019) was rolled out to the new nursing curriculum. Within the next chapter, I summarise the development of the DHC scheme and discuss how it will continue beyond my PhD. The strengths and limitations of this PhD are reflected upon before identifying implications to practice, policy and research, as well as recommendations for future research.

Chapter Eight: Discussion

8.1 Introduction

In this final chapter I discuss the development of the DHC scheme. I reflect on my positionality within the research, the strengths and limitations of my PhD and identify opportunities for future research to continue exploring the implementation of the DHC scheme. Implications to practice, policy and research have been identified.

8.2 Developing the Digital Health Champion Scheme

Within this section I reflect on how each of the three CAR cycles informed the overall DHC scheme, and share how the award structure evolved overtime.

The first cycle commenced the development of a feasible model with stakeholders exploring the perceived benefits and concerns. Six workshops followed by an online survey were undertaken in the constructing and planning phase to explore stakeholders' thoughts. Subsequently as part of the implementation phase, large numbers of first-year nursing students were invited to support a known beneficiary in using a health website as part of a module. Health websites were introduced to first-year nursing students within their module's DP lecture. This approach addressed stakeholders concerns towards students having the skills to identify reliable and quality websites. This activity allowed exploration of benefits and barriers for students in supporting people

known to them without addressing the safeguarding concerns raised by stakeholders. This approach led to a large number of students taking part in the activity, and a response rate of 78% (371 out of 473). This response rate was comparable to Jones *et al.* (2016). The activity was successful in providing students the chance to apply and extend their own digital skills and knowledge, as well as their confidence in discussing a health website and their ability to adapt the task to meet a person's needs.

Due to the success of the first cycle's implementation phase, it was decided the activity would be adapted to provide students the chance to support local communities. The second cycle developed and trialled a 'home-visit model', whereby students visited a citizen's home and introduced a health website. On reflection, it was advantageous to develop an activity already trialled and deemed to be of benefit to students. The prescribed health websites were incorporated into a training session developed to complement the DP lecture and further enhance students understanding. A home-visit model was explored as an extra-curricular activity linked to WPE alongside an existing curriculum. This resulted in a low participation rate. Unfortunately, it was not possible to integrate the activity or WPE into the curriculum at this stage. The findings showed the model to be of benefit to a small number of students and citizen contacts. The notion of supporting people in their homes, at a local café or library was worth exploring, yet with hindsight it would have been worth developing a more general model simultaneously within this cycle.

Commencing the third cycle a home-visit model was continuing to be explored. As of December 2019 a home-visit model ceased to continue for two reasons. Firstly, there were difficulties in recruiting families to become citizen contacts. If the model were scaled up for large numbers of nursing students, low recruitment of citizen contacts would be problematic. I had to question whether it was the approach used to recruit citizen contacts that led to low levels of recruitment, or whether there was really a need for service users and carers to be supported in using digital health. Over the years a number of organisations refer to the recruitment of various digital champions (work-based, voluntary) to support communities in increasing their awareness and use of online resources (Barclays, 2013; Digital Boomers, 2018; Digital Unite, n.d.; Learn My Way, 2019; OxFed, 2018; Tinder Foundation, 2016; Warwick-Booth *et al.*, 2013). This suggests that there is a need to support service users and carers in using digital health.

Secondly, this PhD provided the required resources (time and funding) to explore and trial a home-visit model. Considerable time was spent organising visits and ensuring both citizen contacts and students were prepared and safeguarded. On reflection the continuation of a home-visit model would require funding and too much staff time making this impractical. By removing the model, a number of safeguarding concerns raised within the first cycle's constructing and planning phase were removed.

Simultaneously within the third cycle, a general model was explored linking students with organisations and projects to support local communities to use health technology. The notion was explored with stakeholders, referring back to concerns raised within the first cycle's constructing and planning phase. No safeguarding concerns were raised. A general model sufficiently managed the issue of the university having to recruit a sufficient number of service users. Projects and organisations led on this, making this model feasible for the university to continue after the completion of my PhD.

The PhD aimed to provide students the chance to support local communities in using digital health. The DHC scheme was created within the third cycle, drawing on the research findings. It was acknowledge that students may lack confidence, knowledge of health resources and/or digital skills required to support local communities. A tiered award was thought to support students in commencing their journey to becoming an e-professional. The activity from the first cycle's implementation phase formed the bronze tier due to the success in developing students' digital skills and knowledge. Students were encouraged to participate in this activity before progressing onto supporting local communities. The activity developed over time from supporting known beneficiaries in using a health website to using reliable and quality apps identified through the NHS Apps Library. This was aligned with the emerging NHS Apps Library and the introduction of the NHS app.

A home-visit model was deemed unfeasible and not part of the final DHC scheme. However, students' keen to support service users in their home proposed the notion of providing support alongside their district nursing placements. The idea was discussed with stakeholders and embedded into the DHC scheme. We already have a proactive student who has worked with their tutor and placement mentor to support service users on a ward waiting area to use an NHS approved app relevant to their health condition.

Incorporating a general model into the DHC scheme was advantageous as it aligned with local and national projects and organisations working to support local communities. EPIC had initially agreed to align their activities with the nursing students WPE, offering activities meeting a silver award but overtime were keen to involve students in the development of e-health solutions and linking this with the scheme's gold tier. Similarly, Healthwatch Torbay had agreed to offer activities for students to achieve their gold tier, they also highlighted opportunities aligning with a silver tier. Integrating both a general model and placements into the DHC scheme gave students a range of activities to choose from; an aspect favoured by students early into the schemes development.

Within this final version of the DHC scheme Healthwatch Torbay had developed a training platform. It was of benefit to share this resource with students offering them the chance to extend their learning towards online health services. The platform complemented the students DP lecture and was promoted through the

DHC scheme as a way to extend their knowledge. The DHC scheme was embedded into the curriculum through WPE; however, it took a considerable amount of time to identify the best way of integrating such an approach. It was vital to reflect on the curriculum and explore how best to integrate the scheme in order to avoid students experiencing additional time constraints (Brown & Bloxside, 2019) as well as staff. Future research can explore the experiences of both DHCs and staff towards the scheme's implementation.

In 2020, Noyes *et al.* (2020) undertook a systematic review of digital badges in healthcare education. It was interesting to reflect on how the structure and tiers of the DHC scheme evolved over time. Initially the scheme began with a points based system, however this was disliked by students and perceived as being too complicated. Assigning students a tier depending on their activity was then explored as some of the activities were more time consuming than others. Nevertheless, after discussions with collaborators this then shifted towards each tier being aligned with set criteria. The current DHC scheme uses this approach. Offering a digital badge is something the scheme could contemplate offering in the future, but this must be alongside a certificate, as students were keen to have something to present to future employers.

The scoping review identified a small number of UK universities to have explored the supporting of nursing students in developing their digital skills, knowledge, confidence and/or professionalism in using health technologies. On reflection, the DHC scheme appears to be novel in its approach. Similarities can

be drawn from Terry *et al.* (2019) where students not only extended their own knowledge of a health resource, but gained experience of supporting others. This approach does not have to solely focus on supporting peers in using the NICE search engine, but could be developed to help students and communities in using a range of health technologies, hence the development of the DHC scheme. The notion of student champions is comparable with local and national organisations working with volunteers (Barclays, 2013; Digital Boomers, 2018; Digital Unite, n.d.; Healthwatch Torbay, 2019; Learn My Way, 2019; OxFed, 2018), healthcare professionals (Warwick-Booth *et al.*, 2013), health and social care students (Tinder Foundation, 2016), and bank staff (Barclays, 2013; Good Things Foundation, n.d.) to support local communities.

My scoping review identified limited research towards UK universities supporting nursing students in developing their digital skills, knowledge, confidence and/or professionalism in using health technologies. It is worth disseminating the findings from this PhD with UK universities, as they may be interested in collaborating and/or learning from the development of the DHC scheme. This could be via direct contact, publications and/or conferences.

8.3 Evidencing the Benefits of the Digital Health

Champion Scheme

This next section will discuss the benefits to nursing students and local communities from participating in the development of the DHC scheme.

8.3.1 Benefits to Nursing Students

In the first cycle's implementation phase, students benefited from supporting a known beneficiary to use a health website. Patience, communication, and digital skills were most commonly reported as being used to support others. Through using various skills and knowledge, students began to acknowledge their own abilities and reflect on whether they perceive themselves as equipped to provide support. They also identified particular skills they would need to further develop in order to undertake the task in the future. Students reported an increase in confidence in their own ability to explain and/or demonstrate a health website and in using computers. Although some students reported already being confident in their own abilities to support others, others found the task harder than anticipated. There is a need to support students in achieving a minimum level of digital professionalism as well as having the confidence to impart knowledge and support others.

Students have begun to apply and/or develop their person-centred skills as part of supporting a known beneficiary. They customised the support provided taking their needs and interests into account. However, only some students shared the decision-making process when deciding which health website to introduce. The DHC scheme's criteria has been developed to encourage students to listen to and learn from service users and carers about their healthcare experiences, and to reflect on the shared decision-making process. Developing students' digital knowledge, skills, confidence and professionalism is essential, yet

ensuring they get to know the person and deliver support in a person-centred manner is equally important.

Evidence illustrating the extent to which the DHC scheme is of benefit requires further exploration. Benefits to students undertaking the bronze tier were explored as part of the first cycle's implementation phase. Terry *et al.* (2019) and Todhunter (2015) refer to students developing skills and knowledge from undertaking activities whereby they supported peers to use digital health. Todhunter (2015) reported the development of social and computer skills from undertaking their activity, whereas Terry *et al.* (2019) referred to students gaining a greater understanding of the NICE search engine and available resources, in addition to improving their presentation skills. Future research must explore students' experiences of being silver and gold DHCs to better understand the extent students' benefit from participating in the scheme.

8.3.2 Benefits to Local Communities

The intention was to support service users and carers in gaining awareness of and in using health technologies, so they are better able to manage their health and wellbeing. Unfortunately, this research question has not been completely answered within this PhD. In the second cycle, the majority of citizen contacts were supported to use a health website by myself and a colleague, rather than by our nursing students. Although the findings are drawn from a small non-representative sample, two of the five citizen contacts reported the visits to be of benefit. One citizen contact reported using Care Opinion to share their

experiences of healthcare as a cathartic experience, while another learnt about dongles alleviating difficulties experienced in buying food and ordering prescriptions while caring for a family member. It could be argued that only two citizen contacts benefited from the home-visits. For those citizen contacts, the visits made a difference and they would not be using the technology if support had not been provided. The visits are about increasing a person or family's awareness of health technology and allowing them to decide whether it is of use.

From talking with local organisations and projects, there is a genuine need to support local communities in using health technology. Discussions have emphasised that the DHC scheme must not focus solely on health websites, but incorporate a broader range of technologies to promote, empower and facilitate health and wellbeing (Royal College of Nursing, 2019). The question is which technologies will be of most benefit. At present local organisations and projects within the South West are focusing on increasing local communities awareness and use of online health services, including the NHS App, eConsult, and apps approved by the NHS such as MyCOPD. Via the DHC scheme, students have been supporting local communities in using these technologies as well as others. Future research must explore with service users and carers their experience of being supported in using health technologies, as well as which technologies are of most benefit to them.

8.4 Sustainability of the Digital Health Champion

Scheme

Although the scheme has been embedded into the curriculum, how the scheme continues requires additional facilitation. As of September 2019, the scheme was officially integrated. Nevertheless, there are particular aspects that will need to be trialled as there has not been an opportunity to do so as part of my PhD. For example, although there has been discussions towards how students' reflections will be viewed and awarded, this has not yet been trialled. In the next section, I present steps taken to ensure the scheme will continue after the completion of my PhD.

8.4.1 Aligned with the Curriculum

Aligning this PhD with the University of Plymouth's existing undergraduate nursing curriculum was essential to combining WPE and DP. Since the predetermined curriculum influenced when a phase and cycle could be undertaken, I ensured research designs and materials were prepared and ethical approvals obtained in a timely manner so not to miss opportunities. The insider-outsider team identified particular lectures within the curriculum where I could reinforce the importance of becoming an e-professional, recruit students, and obtain feedback informing the development of a feasible model. For example, the DP lecture was delivered to first-year nursing students during October and November, which was an ideal opportunity to explore the chance of supporting beneficiaries to use a health website with students. However, by

piloting the study in October-November 2016, the full study did not take place until October-November 2017, delaying the findings.

For the DHC scheme to be implemented and to continue, it had to be embedded into the curriculum. The findings clearly illustrated that students do not have time to undertake extra-curricular activities due to other priorities, and even if they wanted to become involved it was difficult to balance additional activities alongside teaching, placements, assessments and life outside of the course. This is supported by Terry *et al.* (2019) who referred to student champions who had supported peers to use the NICE search engine having difficulty in delivering sessions alongside their studies. If the model were of benefit to students, it would have to be deeply embedded into the curriculum to be feasible for students to undertake. WPE was made compulsory in the newly approved nursing curriculum and has been integrated into the programme. The DHC scheme is one of the many activities students can choose to undertake as part of WPE.

8.4.2 Collaboration with Stakeholders

Collaboration was fundamental to developing a feasible model. In addition to this, having a good understanding of the local situation and the various organisations and projects working to support local communities to use health technology was essential. During the development of the DHC scheme, the insider-outsider team contemplated whether to invite service users and carers to become DHCs. This was not explored as collaborators (local organisations

and projects) were already developing an approach. It was agreed that the university would recruit students to become DHCs, whereas local organisations and projects would focus on recruiting the public to become DHCs and inviting them to attend support sessions. Working collaboratively with multiple stakeholders towards the same goal was fundamental to this PhD and avoided duplication of work.

There were instances where I referred to the four squares of knowledge taken from Herr and Anderson (2005) to help explain the value of collaborative working. My intention was to prevent stakeholders from responding in a way they thought I wanted, and to encourage them to voice positive and negative comments as well as recommendations. Collaboration facilitated the development of a feasible model for all stakeholders. For future researchers who are developing a model within one organisation but across a number of sites, I would recommend collaborating with multiple stakeholders who are proactive and passionate as champions at each site. Within this PhD, activities available to students developed more quickly by working with key stakeholders (students and academics) at individual sites. I then developed an overarching scheme that incorporated these activities, all of which had the same goal of offering students the chance to support local communities in using health technology. The DHC scheme has been developed for all University of Plymouth sites that offer undergraduate nurse education, yet the activities offered to students differ due to the geographical remit of individual organisations and projects.

Although the scheme has been incorporated into the new nursing curriculum, the extent to which the scheme has been successfully implemented has not been explored with stakeholders. In the short term, the DHC scheme is available to nursing students. However, its continuation is reliant upon support from collaborators. I had begun exploring the DHC schemes continuation, acknowledging the logistics of running a scheme across three locations and taking into account existing staff and student workloads. Truly embedding the scheme means that the scheme will function with limited input from me as a facilitator. Unfortunately, this phase has not yet been reached, but collaborators are keen to continue delivering and developing the scheme.

8.5 My Positionality

As an outsider, I spent time developing my knowledge of the nursing curriculum as well as continuously meeting with insiders, outsiders and those with dual roles. Initially, as an outsider, it was challenging to build a rapport with insiders but I believe that by recognising my positioning and emphasising the value I placed on collaborative working to achieve our set aim, our partnership developed. It took time, but collaboration did flourish (Herr & Anderson, 2005) once my positioning shifted along the continuum moving towards a facilitating role. Only insiders and those with dual roles can verify the extent to which I shifted my positionality from an outsider to a facilitator. I have not collected feedback regarding their thoughts towards my positioning.

At times, it was difficult to know whether those with dual roles were on the positionality continuum. We would often discuss which 'hat' was being worn as they provided feedback. For example, a stakeholder with their outsider 'hat' felt that digital activities and events must not solely be promoted via Twitter, and that emailing particular students was another approach to be explored. However, when wearing their insider 'hat', the individual felt that emailing would not be a sustainable approach. It was important to remain objective, especially when managing conflicting feedback. In these situations, I referred back to my research questions for guidance and then proposed potential approaches to stakeholders.

Over time, stakeholders began to take ownership of the project, championing the idea of students as DHCs. There was one instance where a stakeholder felt that they were encroaching on my PhD by proposing how they thought we could drive the research forward. I on the other hand felt that the stakeholder was taking ownership and proactively suggesting recommendations which could be explored. There was a difference in how the stakeholder and I felt. I believe this was because they were conscious I was undertaking a PhD rather than focusing on the aim of developing a feasible model through collaboration. I question whether the stakeholder would have felt the same if this was a general research project.

As the literature predicted, I experienced difficulty as an outsider to access and recruit students to take part and provide feedback (Chawla-Duggan, 2007). I

relied heavily on the expertise of insiders and those with dual roles to support the recruitment throughout my PhD, as the scheme was an extra-curricular activity. Insiders, outsiders and those with dual roles were able to share their expertise to develop a feasible model. As a researcher/facilitator, I was mindful of what worked within each of the programme locations. I acknowledged that local organisations and projects work within particular geographical remits and kept this in mind when developing a model for a nursing curriculum that is based across three locations (Exeter, Plymouth, and Truro).

My role as a researcher/facilitator will continue in the short term to ensure the scheme is implemented. On reflection, additional research will be required to investigate the success of the scheme and explore in-depth the experiences of DHCs.

8.6 Strengths of the PhD

Reflection has been a key principle and phase within AR. A researcher must take the time to reflect on the strengths and limitations of their research, identifying what worked well and learning from the challenges faced. In this next section, I acknowledge and discuss the strengths of my PhD.

8.6.1 Aligned with National and Local Aims

This PhD is aligned with both national and local aims to support everyone in becoming digitally capable (Maude, 2014). More specifically it aimed to support local communities in becoming more knowledgeable, skilled and confident in

using health technologies (Cornwall Council, 2019; Good Things Foundation, 2019), and to support our healthcare workforce for the digital future (Health Education England, 2019; Royal College of Nursing and Health Education England, 2017). Technology within healthcare rapidly advances. It may be difficult for the workforce, service users and carers to remain up to date and aware of how technology can be used. The literature surrounding the idea of digital champions and the need to prepare everyone for the digital future in healthcare has snowballed during my PhD (Digital Boomers, 2018; Digital Unite, n.d.; Learn My Way, 2019; OxFed, 2018; Tinder Foundation, 2016). I believe the Topol Review (Health Education England, 2019) supported stakeholders in understanding the aim of the scheme, by highlighting the national need to support both current and future healthcare professionals in preparing for the digital future.

8.6.2 Chosen Methodology

CAR is underpinned by responsiveness and continual reflection throughout multiple cycles. As a responsive methodology, it enabled me to bridge the gap between research and practice. Considering the PhD was aligned with a predetermined curriculum, it was vital to explore and respond to stakeholders' feedback immediately due to time constraints. It also demonstrated to the stakeholders that their feedback was listened to. Without using a pragmatic and responsive approach, it would have been challenging to develop a feasible model with stakeholders alongside an existing curriculum.

Collaboration was not just a principle of AR but a philosophy that enabled the successful development of a feasible model. Together we drove the research forward (Coghlan & Brannick, 2014). Working with multiple stakeholders across Devon and Cornwall towards a common goal is a strength of this PhD. It has drawn on the knowledge and expertise of a range of stakeholders to ensure that the model is feasible and sustainable.

I acknowledge the importance of incorporating three voices as part of AR (Chandler & Torbert, 2003; Reason & Bradbury, 2001), in order to integrate research and practice. Incorporating the first and second person has promoted learning within this PhD, of which the second person has been crucial (Coghlan & Brannick, 2014). Although I have started to share the findings, I acknowledge that wider dissemination is required in order to incorporate the third person and to reflect further.

8.6.3 Collaboration

Collaborative working has been a strength of this PhD and critical to its success. San Martin-Rodriguez *et al.* (2005) refers to organisational and interactional determinants of collaboration for healthcare teams highlighting the complexity of collaborative working. Reflecting on the interactional determinants, a willingness to collaborate, building trust overtime, good communication and mutual respect were vital to working 'with' stakeholders. As expected it took time to build trust to develop a feasible model through CAR (Herr & Anderson, 2005). There was a need to effectively communicate with

stakeholders regarding how their feedback may or may not have led to amendments, but also when their engagement became research. The research was driven forward as a result of working with stakeholders and forming a partnership (Reason & Bradbury, 2001).

Co-design has been referred to as involving stakeholders in the design phase of a solution or intervention (Steen, Manschot & De Koning, 2011), however a recent rapid review suggests further development is needed for the term to be used consistently (Slattery, Saeri & Bragge, 2020). Slattery, Saeri and Bragge (2020) refers to co-design in health research as being widely used but rarely evaluated. Claims have been made towards the co-design process as being of benefit to the project, its users and the organisation (Steen, Manschot & De Koning, 2011). The Point of Care Foundation has formed an experience based co-design toolkit. This step-by-step guide aims to improve service users' experience in healthcare by involving staff and service users in the co-designing of services. This toolkit is advantageous considering co-design is not an easy approach. Working in partnership with service users and the importance of listening to their voices (Francis, 2013), aligns with the co-designing of healthcare services with service users and healthcare professionals.

On reflection, the DHC scheme was co-designed with multiple stakeholders over three CAR cycles. Thanks to stakeholders voicing their feedback and being involved in the models design and development, a feasible model was formed. The model was embedded into the nursing curriculum as of September

2019. Although the implementation of the scheme has begun to be explored with stakeholders', the co-production phase will continue after the completion of my PhD. This is where the implementation of the DHC scheme will be reflected upon with stakeholders to ensure its continued success.

8.6.4 Strategies Strengthening the Research Quality

In chapter three of my thesis, I proposed strategies that would be undertaken to ensure the quality of my research. The following strategies have strengthened my research.

8.6.4.1 Developed Knowledge

On commencement of this PhD, I brought with me my experience as a researcher. I took the time to extend my own knowledge of research methods in order to strengthen the quality of the research and ensured that the chosen CAR methodology was successfully implemented. When reflecting on the four squares of knowledge as identified within chapter three (Herr & Anderson, 2005), the 'arena' grew as the insider-outsider team shared their knowledge and expertise. I developed my understanding of the University of Plymouth's nursing curriculum, as well as the NMC's former and present curriculum standards. I consider this to have strengthened my rapport with the insider-outsider team and the quality of our research. I was able to engage in discussions regarding the curriculum, yet continued to value and draw upon the expertise of others. I acknowledge that there will always be an 'unknown' square, but I appreciate that the 'arena' would have been much smaller if there were no collaboration or

if the insider-outsider team had not taken the time to extend and disseminate their own knowledge and expertise.

8.6.4.2 Transparent and Auditable

From the beginning, I documented both formal and informal feedback from stakeholders so that the research design, processes and findings would be transparent to others. I have provided an enriched description of the research, documenting the changes, how amendments were agreed and implemented, which enhanced the transferability of the research (Korstjens & Moser, 2018).

8.6.4.3 Triangulation

Triangulation has purposively been applied within this piece of research as a strategy to strengthen its quality, thereby not relying on a single approach to inform the findings (Patton, 2002). I have applied 'within' methodological triangulation to enhance the findings (Williamson, Bellman & Webster, 2012). This PhD has used multiple methods of data collection to develop the data's richness. With hindsight, there may have been additional opportunities where I could have used triangulation to enhance the findings. For example in the third cycle, I collected quantitative data from students about their thoughts towards the DHC scheme. It may have been worthwhile inviting students to discuss their thoughts in more depth as part of a focus group undertaking a sequential explanatory design; however, this then brings into question issues surrounding recruitment. Focus groups would have been voluntary and as the findings within this PhD have illustrated, students are unlikely to add to their workload by

volunteering to participate in additional activities. Furthermore, I had ran out of time to explore this as part of my PhD.

8.6.5 Transferability of the Research

New knowledge has been developed through undertaking three CAR cycles. Each cycle strengthens this study by building upon existing findings and focusing on the development of a feasible model. Through collaboration, stakeholders worked closely to develop the model and have been invaluable in driving the research forward. In this thesis, I have been transparent and provided thick descriptions regarding the mixed methods employed; in addition to the various strategies used to strengthen the richness of the data collected. Chapters four, five and six provide evidence as to how the scheme has been informed and developed over time, eventually being embedded within the nursing curriculum.

Although this PhD was set in a single context, the DHC scheme could be adopted and/or adapted by other disciplines or universities as the scheme is underpinned by rigorous research. The scheme has been developed so that it can be shared across healthcare disciplines, and therefore is of value to a multidisciplinary audience. At present, the scheme and our findings are being shared amongst healthcare disciplines within the University of Plymouth. There are opportunities to share our learning more widely within nurse education. There will be a need to explore with stakeholders how such a model could fit within their own curriculum, learning from the lessons of this PhD. This thesis

provides an insight as to how others might approach offering large numbers of students the chance to tailor support to local communities in using health technology as part of the curricular.

8.7 Limitations of the PhD

Inevitably, there are limitations to the research that need to be acknowledged. This includes difficulties experienced in developing a feasible model alongside an existing curriculum, in the recruitment of participants, attaining sufficient response rates, as well as challenges employing particular research methods.

8.7.1 Developed Alongside an Existing Curriculum

The scheme was developed alongside an existing curriculum as an extra-curricular activity. This caused a number of difficulties. For example, it was difficult to align the recruitment and trialling of the model with the curriculum and the predetermined schedules, and it was an ongoing challenge to recruit students to take part in an extra-curricular activity in conjunction with an already busy course. If other universities or healthcare disciplines were considering developing a similar approach, they will need to be aware of this limitation. Nevertheless, this approach enabled a feasible model to be developed with stakeholders and was trialled with a small number of students prior to being scaled up within the newly approved curriculum. I would argue that this was the correct approach.

8.7.2 Low Levels of Recruitment

Attaining an adequate level of recruitment has been a recurring challenge throughout this PhD. Recruitment of students was not a problem during the first cycle as they were required to support a known beneficiary as part of a module. However, I experienced difficulty in recruiting a sufficient number of nursing students to participate in cycles two and three as this required students to volunteer their time as part of WPE. When designing the approach I worked with academics to identify the most appropriate time of year and lecture to recruit students as they have extensive knowledge of the curriculum. As this was an extra-curricular activity, students prioritised other commitments due to time constraints. Where students were willing to become pioneers and trial a developed model, they were keen to know how their contribution would be evidenced in their course. I strongly agree that students must be recognised for their efforts and achievements when undertaking an extra-curricular activity alongside their existing course commitments. The research relied heavily on students wanting to undertake WPE to enhance their CV and portfolio ready for qualifying. On reflection, I do not believe there was a solution to this predicament. Incentives were discussed with students, but the reasoning always came back to not having enough time.

Low recruitment meant that, at times, focus groups could not be undertaken with students. In some instances, I had intended to conduct focus groups yet had to cancel the approach when no one was able or willing to attend. There were instances where focus groups were organised, yet not enough students

attended for it to be classified as a focus group. On these occasions, I conducted interviews with individual students as they had given their time to attend and were willing to voice their thoughts and experiences.

8.7.3 Low Response Rates

Stakeholders' feedback has been vital in the development of the DHC scheme; however, when making amendments to a model I had to be cautious due to the low response rates from convenience samples. A low response rate was attained in an online survey with stakeholders, undertaken as part of the constructing and planning phase in the first cycle. The low response rate may have been due to stakeholders not having the time to complete the survey, or the emails being lost in amongst other emails. After the completion of the online survey, it was proposed that it would be more efficient to capture SNaM's feedback at School Away Days. This is because all staff are encouraged to attend the day, and if the scheme were included on the agenda, there would be allocated time to gather feedback. Going forward I presented findings at the School Away Days and took handouts to encourage discussion. I took a similar approach with students, whereby I presented a developed model as part of a lecture inviting them to feedback via TurningPoint. This way students had time to participate in the activity as it was part of a lecture. I then presented a detailed version of the findings in a future lecture. Collecting feedback via pre-organised meetings or lectures is an approach I will use again and encourage others to employ.

Finally as part of the second and third cycles, citizen contacts did not always return their questionnaires after each of the visits. This may have a result of participants not willing or forgetting to complete or return the questionnaires, or even the questionnaires being lost in the post. From discussions with participants, I have reason to believe that some questionnaires were completed and posted to me but did not arrive. This is unfortunate as participants took the time to provide responses. I had the intention to run statistical tests in SPSS to explore the difference between pre and post questionnaires. However, due to such a small sample and a low response rate, it was inappropriate to run these tests.

8.7.4 Research Methods

A limitation of using workshops as a data collection method was that stakeholders did not read the materials provided in their conference packs. A video was shown at the beginning of the workshop giving an overview of the proposal, providing stakeholders with enough information to discuss perceived benefits and concerns. Nevertheless, time was spent during the workshops answering questions that would have been answered if the handouts had been read. This is a limitation that would have been hard to overcome as sending attendees materials in advance would not necessarily mean stakeholders' would have time to read them. Nevertheless, the use of a video to introduce the proposal was of use.

Students on occasion falsified or over embellished their reflections. There is no way of knowing how many students took this approach. Students could have embellished their reflections in order to please lecturers, resulting in response bias. Reflections were not marked as part of the assessment but this does not mean students did not want to present themselves in a positive manner. These limitations influenced the study's trustworthiness. However, students did take the time to answer the questions, reflecting on either their actual or supposed experience. By asking the students to think through the task and consider the skills and knowledge they would have used and/or developed, students have reflected on the process even though the action might not have been undertaken. Analysing student reflections is a form of data collection I would use again in the future, but there is a need to emphasise the need for students to be honest as it is not just about what worked well in their reflections, but their learning towards an activity which is of equal importance.

Within the second cycle, my colleague and I visited citizen contacts to trial the procedure before students undertook their visits. All citizen contacts were invited to reflect on their experience by taking part in an interview. Interviewer bias may have occurred within these interviews as I had previously visited some of the citizen contacts. A semi-structured interview guide was used, but on occasion I found myself asking questions that referred back to previous conversations, whereas I could not do this when interviewing the students citizen contact. I recognise this as a bias. Within the next cycle I intended not to visit families; however, this data collection phase did not materialise as the model was deemed unfeasible within the beginning of the third cycle.

8.8 Implications for Practice

The University of Plymouth's nursing students have the opportunity through the DHC scheme to apply and develop their knowledge, skills, confidence and professionalism in health technology while supporting others and considering their needs and wants. This PhD has driven forward the idea of students as DHCs across Devon and Cornwall, further connecting the university with local organisations and projects and strengthening the support delivered to local communities. There is an opportunity to link community volunteers recruited to become Digital Champions with our students as DHCs as they deliver support. They could learn from each other about health technology and share their experiences of healthcare, thereby enhancing the support provided to local communities.

As nurse education shifts more towards the teaching of digital professionalism and available health technologies, students must be encouraged to share their knowledge with practice staff during their placements. In practice, staff do not have the time to explore the benefits and barriers to using health technologies. However, staff could draw on the knowledge of our DHCs and start to explore what technology would be of use, implementing it where possible. SNaM, organisations and projects could explore the prospect of DHCs feeding into the development of health technology, drawing on their knowledge and experiences.

8.9 Implications for Policy

The local government and policy makers in healthcare must build upon the idea of involving students as DHCs, whereby students support healthcare professionals and local communities in developing their skills, knowledge and confidence in using health technology. There will always be a need to support people in learning about and using health technology, especially as technology advances. Therefore, there is a need for the local government and policy makers to work with universities to ascertain the resources and procedures required to continue this approach.

The NMC review and develop educational standards leading to the revalidation and approval of UK nursing curriculums. In the next revalidation, a stronger emphasis must be placed on universities to embed digital health into the nursing curriculum, whether within modules or as a thread throughout the programme. The DHC scheme can be an exemplar and feed into future NMC standards.

8.10 Implications for Research

Collaboration as a philosophy as well as the principles (reflection, cycles with action) of AR enabled a complex model to be developed with stakeholders. CAR is a methodology that future researchers can use to develop a complex model. Future PhD students using a CAR approach will need to incorporate sufficient time to plan the models continuation, with or without their involvement. As part of this PhD, I have explored stakeholders' level of interest towards

continuing the scheme, highlighting the various tasks that need to be undertaken. On reflection, additional time was required to verify how the scheme would continue with limited input from myself as a researcher/facilitator. I am in a fortunate position to continue working with stakeholders as a member of staff within the university and can therefore explore the scheme's continuation, but I appreciate that other PhD students may not have this opportunity. Therefore, they should incorporate sufficient time within their PhD to do this.

Future researchers need to acknowledge the difficulties experienced in this PhD regarding the recruitment of nursing students, and should consider innovative ways to recruit a sufficiently sized sample. Within this PhD, a sufficiently sized sample was recruited by undertaking the data collection phase within a lecture. The research topic was linked to the lecture and invited students to feedback their thoughts. It could be argued that including a research activity within a tutorial, lecture or assessment improves response rates, as students perceive the research to be part of the curriculum and not an addition. Future researchers must carefully contemplate recruitment methods, and attempt to avoid research activities being an extra-curricular activity as this could lead to low recruitment.

8.11 Recommendations for Future Research

There are two areas for future research. Firstly to ensure the DHC scheme has successfully been embedded within the nursing curriculum and continues to

work with stakeholders to remain a feasible and current model; and secondly to investigate how the model can be adopted to benefit other universities and healthcare disciplines. Potential research opportunities are discussed in detail below.

8.11.1 Further Develop the Digital Health Champion Scheme

Although the DHC scheme has been embedded within the nursing curriculum, there is an opportunity to explore stakeholders' experiences of being involved in the scheme and towards its continuation. In particular, it would be beneficial to capture students' experiences of becoming and being a DHC, and the thoughts of SNaM staff towards the delivery of the scheme. This is because aspects of the scheme have not yet been trialled. For example, students' reflections have not been reviewed nor have students been awarded a tier using the developed criteria. It will be of interest to explore with stakeholders their thoughts and experiences of how the scheme has been embedded within the curriculum. This is to better understand whether the developed processes work sufficiently, and to reflect on how the scheme can be developed further. It is important that the scheme does not remain static. As technology advances, stakeholders must explore and incorporate new digital health activities into the DHC scheme.

8.11.2 Adapt the Scheme for Other Healthcare Disciplines and Universities

The inclusion of the DHC scheme within the nursing curriculum has led to other healthcare disciplines being interested in the model. With a number of

impending revalidations of healthcare curriculums, it is worth further developing the idea within the University of Plymouth as it is a unique selling point. At present, I have been working with the midwifery and occupational therapy departments in order to adapt the model. With the Topol Review identifying the need to support our future workforce in developing their digital literacy (Health Education England, 2019), I will continue to work with healthcare disciplines following the completion of my PhD. The scheme has the potential of supporting all healthcare students in commencing their journey to becoming an e-professional and in supporting others (peers and service users).

The scheme must be further developed within the University of Plymouth's healthcare curricula and published in peer-reviewed journals prior to sharing and collaborating with other universities. Following this, there is an opportunity to share the DHC scheme with other universities who are keen to further support students in learning about and in using health technology. There is scope for future research to invite Schools or Departments of Nursing to share their approaches, to share the DHC scheme, and to explore future collaborations. Other universities and healthcare disciplines may consider adopting and adapting similar approaches to benefit students and local communities.

8.12 Recommendations for Other Healthcare

Programmes and Universities

Healthcare programmes and universities that are keen to embed digital health into the curriculum may wish to explore their own CAR cycle or cycles and use the Digital Health Champion scheme to initiate discussions with stakeholders. It is appreciated that due to the resources required to employ CAR, programmes may not be in a position to undertake a similar approach. This has led to the creation of a number of short and medium term recommendations to help guide those interested in embedding digital health into the curricula. Where possible co-designing digital health activities and/or schemes with stakeholders in particular students and staff is advised.

Short-term recommendation: Reflect on the digital health activities already embedded within your curriculum

It is vital to develop an understanding of the digital health activities already embedded within the curricula, recognising what has already been introduced as well as any gaps. Subsequently, a plan can be formulated towards further embedding of digital health. When reflecting on the curriculum it is worth exploring what resources can be drawn upon whether internally (within your curriculum or university) or externally to support the development of a digital health lecture or activity.

Short-term recommendation: Introduce a lecture or lectures on digital professionalism

Develop and embed a lecture or series of lectures on DP linking back to the modules learning outcomes. It is a chance for students to commence their learning towards becoming a digital health professional (Jones *et al.*, 2016), as well as introducing the various technologies being used and/or trialled within healthcare (Jones *et al.*, 2017). The lecture or lectures could focus on students gaining a greater understanding of the benefits of technology in healthcare as well as the potential barriers. By supporting students in starting their digital professional journey and developing their knowledge and skills of digital health, students can continue their learning and go on to become digital health champions whereby confidently supporting others.

Short-term recommendation: Develop and embed a digital health activity into the curriculum to develop students' digital skills, knowledge confidence and/or professionalism

A number of digital health activities with varying success have been discussed within this thesis. As an initial activity, I would recommend students supporting a known beneficiary in using a health website as part of a module activity or assessment whereby linking the activity to a modules learning outcomes. This is due to our achievement of getting large numbers of students to undertake this activity and in developing their digital skills and knowledge. An additional activity would be for students to work together with their placement mentors to explore

the possibility of supporting patients in becoming aware of or using health technologies. This activity could take place alongside student placements.

Medium-term recommendation: Develop and embed a digital health scheme into the curricula

Subsequently from developing one or two digital health activities, there is an opportunity to bring them together as part of a scheme where students support their peers and local communities to use health technologies. It would be advantageous for programmes to work with stakeholders to ensure a feasible and sustainable model is developed. Programmes and universities could adopt or adapt the DHC scheme as presented within this PhD.

Medium-term recommendation: Explore and develop partnerships

Develop a greater understanding of what local and national organisations and projects are doing to support local communities in using health technologies. There are a number of organisations and projects working to support local communities. There is an opportunity for universities and/or programmes to collaborate externally and work towards a common goal of supporting local communities in using health technologies while upskilling the future workforce. At a time where embedding digital health across healthcare disciplines is being explored, there is an opportunity for universities and programmes to learn from each other and discuss how best to overcome any challenges as part of a working group. The working group could focus on the embedding of digital health into the curricula for various disciplines.

8.13 Planned Publications

The development and embedding of the DHC scheme must continue to be disseminated both locally and nationally reaching a wide range of audiences. I propose publishing the following three articles in peer-reviewed journals with the intention of highlighting our findings to academics based within universities, and to a range of healthcare professionals.

- **Scoping Review of Digital Health in the Undergraduate Nursing Curriculum.** This article will present the search strategy, summarise articles meeting the inclusion criteria, before identifying themes and gaps.
- **First-Year Nursing Students Supporting a Known Beneficiary to use a Health Website as part of the Undergraduate Nursing Curriculum.** The article will report the facilitators and barriers experienced by students in undertaking this activity, as well as how students benefited.
- **The Development of a Feasible Model where Nursing Students Support Local Communities to use Digital Health: A collaborative action research approach.** The article will discuss how a feasible model evolved through the undertaking of three CAR cycles.
- **The Digital Health Champion Scheme: Students supporting local communities in becoming aware of and using digital health as part of the nursing curriculum.** The article will present the most recent version of the DHC scheme, examples of students becoming DHCs, as well as discussing the facilitators and barriers to embedding such a model within the curriculum.

8.14 Conclusion

Throughout this thesis, I have described and reflected on the undertaking of three CAR cycles employing mixed methods to combine two elements of the nursing curriculum (DP and WPE). A feasible model has been developed and embedded within the nursing curriculum offering large numbers of students the opportunity to become DHCs. The DHC scheme is consistent with national and local objectives in supporting the healthcare workforce and local communities to develop their digital knowledge, skills and confidence in using health technology. It has taken time for the scheme to gain momentum, but it has snowballed since the Topol Review (Health Education England, 2019), and the introduction of the DHC scheme into the newly approved nursing curriculum as of September 2019.

The DHC scheme provides nursing students the chance to extend their own learning of digital health and to be able to support their local community, in addition to listening to and learning from peoples experiences of healthcare. This PhD has driven forward the idea of students as DHCs across Devon and Cornwall, and has helped to connect the university with local organisations and projects thereby strengthening the support delivered to local communities. It is thanks to collaborative working and a pragmatic approach that a feasible scheme has been developed, embedded and will remain of benefit to students and local communities. The DHC scheme will continue to be shared locally and more widely with other universities who may be considering similar approaches.

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Appendices

Appendix 1: Ethical approval letter for the first cycle's constructing and planning phase (Faculty)



12th October 2016

CONFIDENTIAL

Toni Page
Plymouth University
Room 105
8 Kirkby Place
Drake Circus
Plymouth
PL4 8AA

Dear Toni

Amendment to Approved Application

Amendment Reference Number: 16/17-881

Original application Reference Number: 15/16-808

Application Title: Exploring the Introduction of community attachments into the nursing curriculum

I am pleased to inform you that the Committee has granted approval to you for your amendment to the application approved on 13th July 2016.

Please note that this approval is for three years, after which you will be required to seek extension of existing approval.

Please note that should any MAJOR changes to your research design occur which effect the ethics of procedures involved you must inform the Committee. Please contact Sarah Jones (email sarah.c.jones@plymouth.ac.uk).

Yours sincerely

Professor Michael Sheppard, PhD, FAcSS
Chair, Research Ethics Committee -
Faculty of Health & Human Sciences and
Peninsula Schools of Medicine & Dentistry

Appendix 2: Online survey from the first cycle's constructing and planning phase

Introduction

My name is Toni Page, I am a PhD student currently exploring the proposal of community involvement in the nursing curriculum. Thank you for accessing this survey it should take no longer than 20 minutes to complete.

All answers will be handled in strict confidence. If you wish to withdraw from the survey you can do so at any time by just closing the browser. When you have completed the survey and are happy with your responses please press the submit button. You will not be able to withdraw your data from the research once you have submitted your survey. If you do not have time or do not wish to participate this will not affect your relationship with Plymouth University.

If you have any questions about the study please contact me on 01752 586593 or email me at toni.page@plymouth.ac.uk.

*** If you have read and understood the above information and are willing to participate please tick the box below to start the survey. By submitting your survey you are consenting for us to use your data.**

☐

Section 1: About you

To begin with, I would like to ask you a few questions about you.

Did you attend the conference 'Patients and Students Working Together' held on 14th July 2016?

☐

Yes

☐

No

At the 'Patients and Students Working Together' conference did you attend one of the workshops exploring the proposal of community involvement in the nursing curriculum?

☐

Yes

☐

No

Are you:

- ☐ A member of the public
- ☐ A nursing student
- ☐ A health professional not employed by Plymouth University
- ☐ An academic/lecturer/researcher employed by Plymouth University but does not work in SNAM
- ☐ Other (please specify)

Section 2: How might the project address raised concerns?

There has been general consensus that introducing community involvement into the nursing curriculum is a good idea; however, concerns have been raised. We would like to explore with you some practical concerns, before assessing how beneficial the proposed project would be.

Concerns have been raised about students and citizen contacts having sufficient time within the project to build a rapport, but at the same time avoiding citizen contacts from becoming dependent on students.

The project proposes students working in groups of five, and each student would pair up with a different member of their group and visit a citizen contact together. Each student would visit four citizen contacts.

The project would take each student a total of 30 hours. This will include two 90 minute visits (i.e. a total of 3 hours) with each of the four citizen contacts (a total of 12 hours). The remaining 18 hours comprises of travel (8 hours) and writing up reflective logs (10 hours).

To what extent do you agree or disagree with the following statements about the above approach.

	Strongly agree	Agree	Disagree	Strongly disagree
There is not enough time for students to build a rapport with each citizen contact.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Four contacts per student would be too many.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Citizen contacts will develop an unhealthy dependence on the students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A sufficient amount of time is dedicated to writing a reflective log.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you have any comments you would like to make about this suggested approach?(Include any concerns)

How could the approach be built into the new adult nursing curriculum? Please tick one or more.

- ☐ Deduct 30 hours from placements and use this time to deliver the approach.
- ☐ Build the approach in as an obligatory element of an existing module.
- ☐ Have the approach 'free float' as part of the Wider Patient Engagement.
- ☐ Create a new module which would include the proposed citizen contacts and Widening Patient Engagement.

Other (please specify)

Stakeholders have mixed views towards the prospect of students visiting a citizen contact in their home. The project proposes:

- Students to work in groups of five. Each student would pair up with a different member of their group and visit a citizen contact together.
- Two students would visit a citizen contact either in their home or another non-clinical setting (depending on the contact's preference).
- Students to be provided with guidelines and a checklist to remind them of safety procedures (for themselves and for the citizen) every time they go to visit a citizen contact.
- Students to log in and out to record their visit. If students fail to log in or at an appropriate time after initiating a visit, the system will send them (a) a text reminder, (b) a phone call with a recorded message, (c) will phone the other students in their group to investigate, (d) will phone the volunteer SNAM coordinator.

Which of the following statements best describes your thoughts towards the above suggestion?

- ☐ I think students safety would be adequately addressed with the above suggestions.
- ☐ I have some concerns about students safety but despite this I do not think these are reasons to stop the project.
- ☐ I have major concerns about student safety and do not think the project should proceed unless changes are made to address them.
- ☐ I have major concerns about student safety that I think are impossible to deal with.

Do you have any comments you would like to make about the proposed approach?(Include any concerns you might have)

Stakeholders have raised concerns about how students would manage in a traumatic situation such as a citizen contact requiring urgent medical care or students being held in the volunteers home against their will. The project is considering the possibility of students having a device that can be used quickly and discreetly to raise the alarm in the case of an emergency, as well as guidance on how to manage these situations within their role and how to access support.

Which of the following statements best describe your thoughts towards this proposal?

- ☐ I think students would be able to manage in a traumatic situation if the above suggestions were in place.
- ☐ I have some concerns about how students would manage in a traumatic situation but despite this I do not think these are reasons to stop the project.
- ☐ I have major concerns about how students would manage in a traumatic situation and do not think the project should proceed unless changes have been made.
- ☐ I have major concerns about how students would manage in a traumatic situation that I think are impossible to overcome.

Do you have any comments you would like to make about the proposed approach?(Include any concerns you might have)

Section 2: How might the project address raised concerns?

There has been general consensus that introducing community involvement into the nursing curriculum as being a good idea; however, concerns have been raised. We would like to explore with you about some practical concerns, before assessing how beneficial the proposed project would be.

The School of Nursing and Midwifery teaches approximately 400 second year adult nursing students each year; if the project were to introduce community involvement into the curriculum, a total of 800 citizen contacts would be required to meet demand. Stakeholders were concerned that the project would not be able to recruit a sufficient number of citizen contacts.

The project proposes to recruit citizen contacts via social media, TV, the wider community in Devon and Cornwall via the press, and leaflets through service user organisations such as Patients Association, Patient Participation Groups (PPGs), Healthwatch and other charities. This recruitment method would reach a large audience quickly and recruit sufficient numbers of citizen contacts. Although this approach would not screen citizen contacts; other procedures would be in place to safeguard students and citizen contact. The University would have responsibility for safety and safeguarding.

Which of the following statements best describe your thoughts the proposed recruitment method?

- ☐ I think recruiting citizen contacts via mass media would be an appropriate recruitment method.
- ☐ I have some concerns about citizen contacts being recruited via mass media but despite this I do not think these are reasons to stop the project.
- ☐ I have major concerns about citizen contacts being recruited via mass media and do not think the project should proceed unless changes have been made.
- ☐ I have major concerns about citizen contacts being recruited via mass media that I think are impossible to overcome.

Do you have any comments you would like to make about the above recruitment methods?(Include any concerns you might have and alternatives suggestions)

The project proposes that two students visit a citizen contact taking approximately 90 minutes. The next couple of questions will explore your thoughts towards the proposed content and structure of this visit.

As part of the visit students would tell the citizen contact about the following aspects, all of which have been taught in their course through Digital Professionalism and Wider Patient Engagement:

- Patient Participation Groups (PPGs) and the contact details of the citizen contacts PPG;
- Show the citizen contact their GP practice website and its functionality. For example, look at their practice website to see if they can get repeat prescriptions, and if they have the right to see their medical records; - Tell the citizen contact about the Patients Association and Healthwatch and show the websites;
- Show websites for PatientOpinion.org.uk (which is a patient feedback site), HealthTalk Online (where people talk about their long-term conditions), NHS Choices (which gives a wide range of approved information), NICE (which gives guidelines for approved treatments), and one relevant good quality charity website for their long-term condition.

To what extent do you think students' signposting a citizen contact to the above information is useful for the citizen contact?

- ☐ Very useful
- ☐ Quite useful
- ☐ Not very useful
- ☐ Not at all useful

Which of the following statements best describes your thoughts towards students' signposting volunteers to information?

- ☐ I think students should be able to signpost citizen contacts to relevant health services, support groups and information on reliable websites as part of their role.
- ☐ I have some concerns about students' signposting citizen contacts to information but despite this I do not think these are reasons to stop the project.
- ☐ I have major concerns about students' signposting citizen contacts to information and I do not think the project should proceed unless changes are made to address them.
- ☐ I have major concerns about students signposting citizen contacts to information that I think are impossible to deal with and the project should be abandoned.

Do you have any comments you would like to make about the visit? (Include any concerns you might have)

The project proposes that the students visit with a citizen contact would include:

20 minutes - Initial greetings and exchange of names. Students would remind the citizen contact about the expectations of the meeting and check that they have seen and read the further information leaflet. Students would also remind them that they, as students, cannot give any clinical advice.

30 minutes - Students would ask the citizen contact if they have a long-term condition, how that affects their life and what contacts they have with the health and social services. The citizen contact would tell students about their condition. The students are expected to take turns in asking or prompting the volunteer. While one student talks/listens the other can make notes. The main point of this contact would be for students to hear the volunteers 'story' and learn from it, giving them the chance to ask questions about things they do not understand.

30 minutes - Students would signpost citizen contacts to reliable information and good quality information. Additional details were provided in the previous question.

10 minutes - Students remind the citizen contact that they have 90 minutes and bring the conversation to a polite and logical conclusion. The students would remind the citizen contact about the confidentiality of the data collected and that they will be in contact again in about 5-6 months.

Which of the following statements best describes your thoughts?

- ☐ I think the content and structure of the visit is appropriate.
- ☐ I have some concerns about the content and structure of the visit but despite this I do not think these are reasons to stop the project
- ☐ I have major concerns about the content and structure of the visit and I do not think the project should proceed unless changes are made to address them.
- ☐ I have major concerns about the content and structure of the visit and think that they are impossible to deal with and the project should be abandoned.

Do you have any comments you would like to make? (Include any concerns you might have)

Section 3: Benefits of the project

Assuming that any concerns you may have about safety, safeguarding and workloads can be dealt with.

To what extent do you agree or disagree that introducing community involvement into the nursing curriculum would benefit nursing students in the following ways:

	Strongly agree	Agree	Disagree	Strongly disagree
The project could improve students communication skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The project could improve students confidence.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Students could better understand the thoughts and experiences of people living with long-term conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Students could learn how people live and manage with their long-term conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Students could develop person centred skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree or disagree that introducing community involvement into the nursing curriculum would benefit citizen contacts in the following ways:

	Strongly agree	Agree	Disagree	Strongly disagree
It would be therapeutic for citizen contacts to talk to students about their conditions and life experiences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The project engages with 'patients' who might not be able to leave their homes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Citizen contacts could learn about available health services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The project gives people who are often 'receivers' of services the opportunity to contribute as experts by lived experience to the education of nursing students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree or disagree that introducing community involvement into the nursing curriculum would have the following benefits to the community and the University:

	Strongly agree	Agree	Disagree	Strongly disagree
The proposed project could minimise stereotypes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The project could increase the amount of time students spend in the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The project could bring the University and the community closer together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This could be a unique selling point for the University.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Can you think of any additional benefits whether for students, citizen contacts, the community and/or the University?

Section 4: Final comments

Do you have any further comments you would like to make about the proposed project?

Thank you for taking the time to complete this survey and supporting the research. If you are happy with your responses please press the submit button.

If you have any questions about the research or the survey please contact me on 01752 586593 or email me at toni.page@plymouth.ac.uk.

Appendix 3: Example of a thematic analysis undertaken in NVivo

Nodes				
Name	Files	References		
Benefits		0	0	
Citizen contacts		0	0	
Patient voice - lived experience		1	2	
Sharing information		1	1	
Therapeutic for patients		1	1	
Nursing students		0	0	
Context of the individuals life (at home)		2	2	
Gives a wider perspective		1	1	
Holistic awareness for students (person centred)		2	5	
Improving skills and confidence		2	3	
Learning opportunity		3	3	
Students hear the service users views		1	2	
University and community		0	0	
Benefits from collaboration		1	1	
Minimises stereotypes		1	1	
Not enough placement experience like this for students		1	1	
Working with communities		2	2	
Concerns		0	0	
Building a rapport		0	0	
Confidentiality and sharing of information		2	2	
Mutually beneficial		1	1	
Recruitment concerns		0	0	
Remuneration and transport		2	2	
Safeguarding		0	0	
Defining roles, responsibilities, expectations		5	9	
Risk and safeguarding		4	9	
Screen volunteers		3	3	
Traumatic situations (particular scenarios - what happens if ...)		3	6	
Student workload - don't have time		4	6	

Appendix 4: Ethical approval letter for the first cycle's implementation phase (Faculty)



| 6th February 2017

CONFIDENTIAL

Toni Page
Plymouth University
Room 105
8 Kirkby Place
Drake Circus
Plymouth
PL4 8AA

Dear Toni

Application for Approval by Faculty Research Ethics Committee

Reference Number: 16/17-692

Application Title: Analysing first year nursing students' experience of discussing and demonstrating digital health with a relative/friend/neighbour

I am pleased to inform you that the Committee has granted approval to you to conduct this research.

Please note that this approval is for three years, after which you will be required to seek extension of existing approval.

Please note that should any MAJOR changes to your research design occur which effect the ethics of procedures involved you must inform the Committee. Please contact Sarah Jones (email sarah.c.jones@plymouth.ac.uk).

Yours sincerely

Professor Michael Sheppard, PhD, FAcSS
Chair, Research Ethics Committee - ~~College~~
Faculty of Health & Human Sciences and
Peninsula Schools of Medicine & Dentistry

Appendix 5: Topic guide for student focus groups taken from the first cycle's implementation phase

My name is Toni Page, I am a PhD student based in Plymouth University's School of Nursing and Midwifery. I would just like to thank you for coming today.

The purpose of the focus group is to explore your thoughts and experiences of discussing and demonstrating digital health to a relative/friend/neighbour, which you completed as part of your Digital Professionalism module. The data will be used to inform my PhD and further develop this study. How many of you have attended a focus group before? Do you know how a focus group works? *(Explain how a focus group works if needed).*

I am really interested to hear from all of you so I may just check from time to time that all of you feel like you have had the opportunity to say whatever you want to. However, if you feel uncomfortable or would prefer not to comment that's absolutely fine. Likewise you are free to leave if you no longer wish to take part in the session.

The comments from the focus group will remain confidential and your name will not be attached to any comments you make. So in any report I write will say "a student said" rather than using anyone's name.

Before we begin I would like to ask you all for your permission to record this session, this will ensure I accurately capture your experiences and thoughts towards visiting citizen contacts in the community. If anyone feels uncomfortable or would prefer me not to record the session please let me know. I do understand that being recorded is not always liked by participants, so I have [name of scribe] with me today to take notes just in case. Would anyone prefer me not to record this session?

Does anybody have any questions? Is everyone happy for me to start recording (this depends on whether participants give their permission) and begin? *(If the focus group is recorded confirm with participants on tape of their willingness to participate and be recorded).*

Ice Breaker (5 minutes)

- Researcher asks the group to take in turns saying their name and a brief sentence about whom they demonstrated and discussed digital health with and why.

About the approach (10 minutes)

- Thinking back, how, if at all, did you structure the discussions and demonstrations undertaken with your relative/friend/neighbour?

Learning points and benefits (10 minutes)

- In what ways if any, have you benefited from taking part in this study? *Probe - What prompted you to say/think that?*
- Thinking about your experiences in discussing and demonstrating digital health to a relative/friend/neighbour, what if any, would you say have been your key learning points? *Probe- Is there anything you would do differently next time?*
- How, if at all, do you think citizen contacts have benefited from this study? *Probe – What prompted you to say/think that?*

Difficulties and improvements (10 minutes)

- Thinking about the overall task, what difficulties if any, have you or your relative/friend/neighbour experienced? *Probe – What do you think were the reasons for the difficulties experienced? What prompted you to say/think that?*
- In what ways, if any, could the assessment be improved? *Probe – Did you feel that the instructions provided for this assessment were clear? Did you have trouble in finding a relative/friend/neighbour to talk to?*

Citizen Contact Project (25 minutes)

(Introduce the Citizen Contact Project to students briefly outlining its aims, recruitment method, training plan, student involvement and visits)

- What are your initial thoughts?
- What do you perceive to be the benefits? *Probe - What prompted you to say/think that?*
- What would be your concerns? *Probe - What prompted you to say/think that?*
- How might the Citizen Contact Project be improved? *Probe – Would you be interested in taking part in such a project?*

Do you have any other comments you might like to share about what we have discussed today?

**Thank you very much for taking the time to share your thoughts, I really appreciate your contribution to this study.
A summary of the findings will be emailed to you.**

Appendix 6: Ethical approval letter for the second cycle's home-visit model for adult nursing students (Faculty)



14th March 2017

CONFIDENTIAL

Toni Page
Plymouth University
Room 105
8 Kirkby Place
Drake Circus
Plymouth
PL4 8AA

Dear Toni,

Application for Approval by Faculty Research Ethics Committee

Reference Number: 16/17-718
Application Title: Piloting Citizen Contacts with Second Year Adult Nursing Students

I am pleased to inform you that the Committee has granted approval to you to conduct this research.

Please note that this approval is for three years, after which you will be required to seek extension of existing approval.

Please note that should any MAJOR changes to your research design occur which effect the ethics of procedures involved you must inform the Committee. Please contact Sarah Jones (email sarah.c.jones@plymouth.ac.uk).

Yours sincerely

Judy Edworthy PhD FAcSS
Professor of Applied Psychology
Chair, Faculty Psychology Ethics Committee &
Acting Chair, Research Ethics Committee -
Faculty of Health & Human Sciences and
Peninsula Schools of Medicine & Dentistry

Appendix 7: Citizen contact questionnaires taken from the second cycle's implementation phase



First Questionnaire

Learning about citizen contacts use of internet for health

[Please can the student read the following introduction to the citizen contact before beginning the questionnaire]

We would now like to ask you a few questions to help us better understand your experience of using the internet for health. By answering the following questions, we will be able to tailor our information to suit you. The questionnaire will take no longer than 10 minutes.

If you decide that you do not want to take part, your decision will not affect either your relationship with Age UK Plymouth or Plymouth University.

All answers will be handled in strict confidence. If you do not want to answer a question, please just let us know as we can move onto the next question. Likewise, if you would like us to stop the questionnaire please let us know.

When you have completed the questionnaire and are happy with your responses, we will forward the questionnaire to the researcher Toni Page. You can withdraw your questionnaire up to two weeks after today by contacting the researcher Toni Page.

Can I confirm that you have the researcher's contact details?

If yes, continue with the next question

If no, provide citizen contact with the researcher's contact details

(Toni Page – 01752 586593, toni.page@plymouth.ac.uk, or Plymouth University, Room 105, 8 Kirby Terrace, Plymouth)

Do you have any questions?

If yes, refer to your training to answer raised questions. You can advise the citizen contact to contact the researcher who will be happy to answer any questions.

If no, continue with the next question.

Are you happy for us to begin the questionnaire?

If yes, begin the questionnaire.

If no, do not continue with the questionnaire. You may discuss with the individual what health information they have previously accessed via the internet, but do not record this on the questionnaire.

1. Name:

2. What long-term physical condition(s) do you live with?

--

3. Have you ever heard of the following?

	Yes, I have heard of it	No, I have NOT heard of it
General Practice 'Patient Participation Group'		
The Patients Association		
Healthwatch		
Patient Opinion		
National Institute for Clinical Excellence (NICE)		
NHS Choices		
Healthtalk Online		

4. Have you ever used or been in contact with any of the following?

	Yes, I have used it or been in contact	No, I have NOT used it or been in contact
General Practice (GP) 'Patient Participation Group'		
The Patients Association		
Healthwatch		
National Institute for Clinical Excellence (NICE)		
Patient Opinion website		
NHS Choices website		
Healthtalk online		

5. Have you ever used your GP website for the following?

	Yes, I have used it	No, I have NOT used it	My GP doesn't offer this on their website
To access your general information			
To access a repeat prescription(s)			
To access your medical record			

6. What health charity websites, if any, have you visited or been in contact with?

--

Thank you for taking the time to answer our questions.

We would now like to explore with you some good quality and relevant websites that you might find helpful and/or interesting to learn about and use.

Second Questionnaire

Reflecting on your first visit from our nursing students

We would like to invite you to answer a few questions about today's visit from our two nursing students. This is so we can better understand how being a citizen contact may or may not have benefited you. The questionnaire will take no longer than 10 minutes.

You do not have to take part if you do not want to, your decision to not participate will not affect your relationship with either Age UK Plymouth or Plymouth University.

If you would like to complete the questionnaire but do not want to answer a particular question, you can move onto the next question. Once you are happy with your responses, please forward the questionnaire to the researcher (Toni Page) by placing it into your pre-paid envelope (no stamp is needed). To return your questionnaire you can either:

- Post the questionnaire to the researcher.
OR
- Hand it to a member of staff from Age UK Plymouth who will forward the questionnaire to the researcher on your behalf.

All answers will be handled in strict confidence.

You can withdraw your questionnaire up to two weeks after returning your responses by contacting the researcher Toni Page.

If you have any questions please contact the researcher (Toni Page) on 01752 586503 or email her at toni.page@plymouth.ac.uk who will be happy to answer your questions.

If you are happy to complete the questionnaire, please turn to the next page to start the questionnaire.

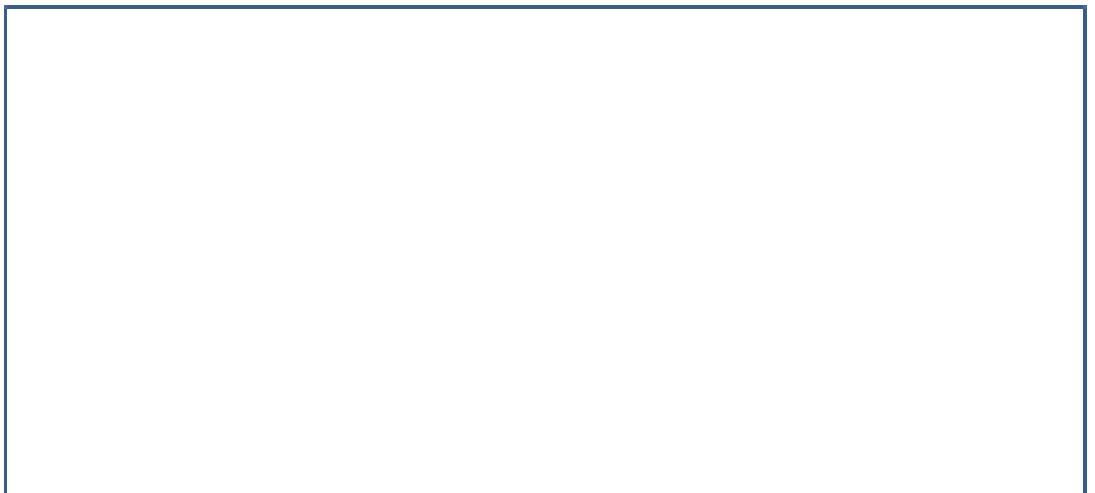
1. Name:

2. Age:

3. What, if anything, have you learnt from today's visit?



7. How did you find talking with our two nursing students?



8. Do you have any comments you would like to share?

Thank you for taking the time to answer our questionnaire.

If you are happy with your responses, please place the questionnaire into your pre-paid envelope (no stamp is needed). To return your questionnaire you can either:

- Post the questionnaire to the researcher.
- OR
- Hand it to a member of staff from Age UK Plymouth who will forward the questionnaire to the researcher on your behalf.

Third Questionnaire

Reflecting on your second visit from our nursing students

We would like to invite you to answer a few questions about today's visit from our two nursing students. This is so we can better understand how being a citizen contact may or may not have benefited you and your use of the internet for health. The questionnaire will take no longer than 10 minutes.

You do not have to take part if you do not want, your decision to not participate will not affect your relationship with either Age UK Plymouth or Plymouth University.

If you would like to complete the questionnaire but do not want to answer a question, you can move onto the next question. Once you are happy with your responses, please forward the questionnaire to the researcher (Toni Page) by placing it into your pre-paid envelope (no stamp is needed). To return your questionnaire you can either:

- Post the questionnaire to the researcher.
- OR
- Hand it to a member of staff from Age UK Plymouth who will forward the questionnaire to the researcher on your behalf.

All answers will be handled in strict confidence.

You can withdraw your questionnaire up to two weeks after returning your responses by contacting the researcher Toni Page.

If you have any questions please contact the researcher (Toni Page) on 01752 586593 or email her at toni.page@plymouth.ac.uk who will be happy to answer your questions.

If you are happy to complete the questionnaire, please turn to the next page to start the questionnaire.

1. Name:

2. Since your first visit from our nursing students have you used or visited any of the following?

	Yes, I have used it or been in contact	No, I have NOT used it or been in contact
General Practice (GP) 'Patient Participation Group'		
The Patients Association		
Healthwatch		
National Institute for Clinical Excellence (NICE)		
Patient Opinion website		
NHS Choices website		
Healthtalk online		

3. Since your first visit from our nursing students have you used any of the following on your GP website?

	Yes, I have used it	No, I have NOT used it	My GP doesn't offer this on their website
To access your general information			
To access a repeat prescription(s)			
To access your medical record			

7. Since your first visit from our nursing students have you visited any charity websites relating to your long-term condition(s)?

4. What, if anything, have you learnt from today's visit?

9. How did you find talking with our two nursing students?

8. Would you be happy to be contacted by Toni Page (by telephone) about your experience and explore how the project could be improved?

☐

Yes, I would like to be contacted

☐

No, I wouldn't not like to be contacted

9. Would you be interested in continuing to be a citizen contact?

☐

Yes, I would be interested

☐

No, I wouldn't be interested

10. Do you have any comments you would like to share?

Thank you for taking the time to answer our questionnaire.

If you are happy with your responses, please place the questionnaire into your pre-paid envelope (no stamp is needed). To return your questionnaire you can either:

- Post the questionnaire to the researcher.

OR

- Hand it to a member of staff from Age UK Plymouth who will forward the questionnaire to the researcher on your behalf.

Appendix 8: Topic guide for interviews with citizen contacts taken from the second cycle's implementation phase

My name is Toni Page, I am a PhD student based in Plymouth University's School of Nursing and Midwifery. I would just like to thank you for opting to take part in this telephone interview today.

The purpose of the interview is to explore your thoughts and experiences of your received visits. Sharing your experience of becoming and being a citizen contact will support the study's development and improve the experience of future citizen contacts informing my PhD.

I am really interested to hear from you. If you feel uncomfortable or would prefer not to comment that's absolutely fine. You can also stop the interview if you no longer wish to take part. Your comments will remain confidential and your name will not be attached to any comments you make. So in any report I write will say "a citizen contact said" rather than using anyone's name.

Before we begin, is it OK if I record this interview, this will act as an aide-memoire for me. Nobody else will hear the tape. But if you don't like the idea of me recording it, that's OK. I do understand that being record is not always liked by participants. Are you happy for me to record this session?

Do you have any questions? Are you happy for me to start recording (this depends on whether the participant gives their permission) and begin? *(If the interview is recorded confirm with participants on tape of their willingness to participate and be audio recorded).*

Ice Breaker

- You very kindly volunteered to become a citizen contact. What attracted you to becoming involved?

Learning and benefits

- Would you say that you have benefited at all from taking part in this study? If so how?
- Thinking about your experiences, what would you say were your key learning points if any?

Feasibility and improvements

- As a citizen contact what do you think has worked well (please think about the recruitment process, completing of questionnaires, the visits)?
- Have you experienced any problems taking part in this study? This includes any difficulties experienced during the recruitment process, the visits, and/or completing the questionnaires.
- How, if at all, do you think the project could be improved?

Worthwhile

- Did you find the experience worthwhile? What part of the experience did you find worthwhile? Why do you think that?
- Would you recommend a friend, neighbour or family member to become a citizen contact? Why do you think that?

Closing

- Do you have any final comments you would like to make about your role as a citizen contact or any of the questions I have asked today?

Thank you very much for taking the time to share your thoughts with me, I really appreciate your contribution to this study. If you wish, you can withdraw your interview from being analysed in the next two weeks by contacting me. I would like to confirm that you have my contact details.

Appendix 9: Topic guide for interviews with second-year adult nursing students taken part in the second cycle's implementation phase

My name is Toni Page, I am a PhD student based in Plymouth University's School of Nursing and Midwifery. I would just like to thank you for opting to take part in this interview.

The purpose of the interview is to explore your thoughts and experiences of visiting citizen contacts in the community. The data will be used to inform my PhD and further develop this study.

I am really interested to hear from you. If you feel uncomfortable or would prefer not to comment that's absolutely fine. You can stop the interview if you no longer wish to take part. Your comments will remain confidential and your name will not be attached to any comments you make. So in any report I write will say "a student said" rather than using anyone's name.

Before we begin I would like to ask you all for your permission to record this session, this will ensure I accurately capture your experiences and thoughts towards visiting citizen contacts in the community. If you feel uncomfortable or would prefer me not to record the session please let me know. I do understand that being record is not always liked by participants. Do you give permission for me to record this session?

Do you have any questions? Are you happy for me to start recording (this depends on whether the participant give their permission) and begin? (*If the interview is recorded confirm with participants on tape of their willingness to participate and be audio recorded*).

Ice Breaker

- What interested you in volunteering and supporting citizen contacts?

Learning points and benefits

- Thinking about your experiences in visiting your citizen contacts, what would you say are your key learning points?
- In what ways if any, have you benefited from taking part in this study? Why do you think that?
- How, if at all, do you think citizen contacts have benefited from this study? Why do you think that?

Feasibility and improvements

- Thinking about your overall experience in taking part in this study (this includes the recruitment process, training, completing reflective logs, visiting citizen contacts) what do think has worked well?
- Have you experienced any difficulties in taking part in this study, this includes any difficulties during the recruitment process, training, completing reflective logs, and/or visiting citizen contacts?

- In what ways if any, could the pilot be improved?

Worthwhile

- Thinking about your experiences in visiting citizen contacts, would you recommend other second-year adult nursing students to take part? Why do you think that?
- We are thinking of introducing this study to all second-year adult nursing students. What are your thoughts towards this?

Thank you very much for taking the time to share your thoughts, I really appreciate your contribution to this study.

Appendix 10: Ethical approval letters for the third cycle's home-visit model for child nursing students (Faculty, REC, and HRA)



17th August 2018

CONFIDENTIAL

Toni Page
School of Nursing and Midwifery
Room 105, 8 Kirkby Place
University of Plymouth
Drake Circus
Plymouth PL4 8AA

Dear Toni,

Application for Approval by Faculty Research Ethics and Integrity Committee

Reference Number: 17/18-960
IRAS Reference Number: IRAS ID 242858
Application Title: Introducing a Citizen Contact Model for Child Nursing Students

I am pleased to inform you that the Committee has granted approval to you to conduct this research.

Please note that this approval is for the duration of the research as stated on your application form (1st July 2018 to 28th February 2019), after which you will be required to seek extension of existing approval.

Please note that should any MAJOR changes to your research design occur which effect the ethics of procedures involved you must inform the Committee. Please contact the Faculty Research Administrator, Maurice Bottomley (email hhsethics@plymouth.ac.uk).

Yours sincerely,

Professor Paul H Arliss, PhD MCOptom
Professor of Eye and Vision Sciences
Co-Chair, Research Ethics and Integrity Committee -
Faculty of Health & Human Sciences and
Faculty of Medicine & Dentistry

East Midlands - Nottingham 2 Research Ethics Committee

The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

07 August 2018




Miss Toni Page
University of Plymouth
Room 105, 8 Kirkby Place
University of Plymouth, Drake Circus
Plymouth
PL4 8AA

Dear Miss Page

Study title:	Can Child Nursing Students Gain Person-Centred Skills while Supporting Citizen Contacts to use the Internet for Health?
REC reference:	18/EM/0198
Protocol number:	FHHS-242858-TP -204
IRA \$ project ID:	242858

Thank you for your letter, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved by the sub-committee.

 242858 Letter_of_HRA_Approval 09 08 2018.pdf .pdf File	 hra-schedule-events+for+242858 - HRA validated.xls .xls File
 statement-activities for 242858 - HRA validated.docx .docx File	

Dear Miss Page

RE: IRAS 242858 Introducing a Citizen Contact Model for Child Nursing Students. Outcome of Application for HRA and HCRW Approval

Please find attached a letter informing you of the outcome of your application for HRA and HCRW Approval. Also attached are statement of activities and schedule of events with HRA field completed.

You may now commence your study at those participating NHS organisations in England and Wales that have confirmed their capacity and capability to undertake their role in your study (where applicable). Detail on what form this confirmation should take, including when it may be assumed, is provided in the HRA and HCRW Approval letter.

If you have any queries please do not hesitate to contact me.

Kind regards

Simon

Simon Connolly

Appendix 11: Ethical approval letter for capturing students' thoughts towards the Digital Health Champion scheme as part of the third cycle (Faculty)



13th June 2018

CONFIDENTIAL

Toni Page
University of Plymouth
Room 105, 8 Kirkby Place
Drake Circus
Plymouth
PL4 8AA

Dear Toni,

Application for Approval by Faculty Research Ethics and Integrity Committee

Reference Number: 17/18-533

Application Title: Using Turning Point to explore second year nursing students' thoughts towards supporting their local community in using the Internet for health.

I am pleased to inform you that the Committee has granted approval to you to conduct this research.

Please note that this approval is for the duration of the project as stated on your application form (i.e. 10th May 2018 to 31st December 2018), after which you will be required to seek extension of existing approval.

Please note that should any MAJOR changes to your research design occur which effect the ethics of procedures involved you must inform the Committee. Please contact Maurice Bottomley (email hhethics@plymouth.ac.uk).

Yours sincerely

Professor Paul H Artes, PhD MCOptom
Professor of Eye and Vision Sciences
Co-Chair, Research Ethics Committee -
Faculty of Health & Human Sciences and
Peninsula Schools of Medicine & Dentistry

Appendix 12: Poster presented at the 18th International Conference on Integrated Care in Utrecht

Can Nursing Students Support Citizen Contacts to use the Internet for Health while gaining Person-Centred Skills?

Toni Page, Ray Jones, Helen Lloyd, Graham Williamson, Kim Young, Rachel Carter
University of Plymouth, Room 105, 8 Kirkby Place, Plymouth, UK, PL4 8AA
toni.page@plymouth.ac.uk

Background and Aim

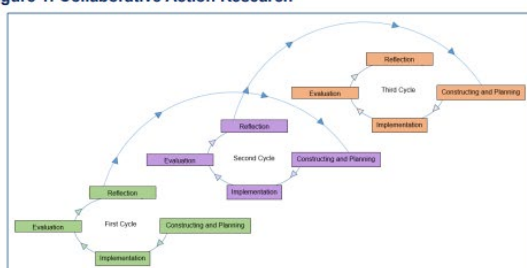
The University of Plymouth introduced 'Digital Professionalism' in 2014, providing nursing students opportunities to learn about digital health. Digital health services have been shown to be of benefit to service users [1,2,3]. General-practice surgeries are encouraged to register at least 20% of patients to access online health services [4].

There is an opportunity to build upon 'Digital Professionalism' and for nursing students to assist their local community. This study explores the feasibility of implementing a model that enhances both students' and citizens' knowledge in their social context.

Method

A collaborative action research approach has been used to develop and trial a model. This study has two iterative cycles using mixed methods, with a third cycle to be undertaken.

Figure 1: Collaborative Action Research



The first cycle explored with stakeholders the idea of students having the chance to support their local community in using the Internet for health. The second cycle trialled a home-visit citizen contact model, and the third cycle will further explore the home-visit model whilst developing a general-practice based model with a local Healthwatch.



UNIVERSITY OF
PLYMOUTH

- References
1. Jones RB, Goldsmith L. What is the evidence for the benefits and outcomes for digital health services? University of Plymouth 2009.
 2. Portney D, Scott-Sheldon L, Johnson B, Carey M. Computer-delivered interventions for health promotion and behavioral risk reduction: a meta-analysis of 75 randomized controlled trials, 1988 - 2007. National Institutes of Health Public Access. 2008;47(1):3-16.
 3. Mohebbi F, Mohebbi R, Jafari AR, Hamid JS, To T, Beyene J. Application of biomedical informatics to chronic pediatric diseases: a systematic review. BMC Medical Informatics and Decision Making [Internet]. 2009;2 June. 2016; 9(22). Available from: <http://www.biomedcentral.com/1472-6847/9/22>
 4. Royal College of Nursing and Higher Education England. Improving Digital Literacy. Available from: <https://www.rcn.org.uk/clinical-topics/health/comm-work>

Findings

First Cycle

- Six workshops were undertaken. Stakeholders generally agreed introducing a home-visit citizen contact model into the nursing curriculum was a good idea. Raised concerns included safeguarding of participants, recruitment of citizen contact and workloads.
- An online survey further explored the thoughts of workshop participants and stakeholders. All 57 survey respondents agreed that a citizen contact model would give students a better understanding of the thoughts and experiences of citizen contacts, and most (52/57) agreed citizen contacts
- All first year students demonstrated one digital health website to a known individual as part of an assessment. Preliminary findings show students reporting the use of and developing a number of skills such as communication and digital skills. Students reflected on their approach, and how they might undertake the task differently for unknown individuals, highlighting the need to research an introduced site and to tailor the task to an individual.



Second Cycle

- Three second year adult nursing students and five citizen contacts took part. Citizen contacts were carers or someone living with a long-term condition with access to the Internet and were recruited via a service user organisation.
- The evaluation phase is being undertaken. Reflective logs from students and questionnaires from citizen contacts are currently being collected. All participants will be invited to interview.

Tentative Conclusions and Next Steps

- The general principle of nursing students acting as digital health champions seems to be accepted. With further refinement, a variation of the models under trial will be feasible and acceptable.
- Completing the evaluation phase for the second cycle.
- Offering child nursing students the chance to take part in a home-visit model with families, and second year nursing students the chance to participate in a general-practice based model as part of the third cycle.