

Dissertation in Partial Fulfillment of the Requirements for the Degree of
MSc in Learning and Teaching Research Proposal

An Exploratory Case Study into the role of using student
audio recordings/ Podcasts as an aide to develop
understanding and enhance student self-learning.

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LETTERKENNY INSTITUTE OF TECHNOLOGY

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ASSIGNMENT COVER SHEET

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Programme:	MALT
Module:	Research Methods
Assignment Title:	Masters Research Dissertation
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Submission Date	31 st July 2020
Word Count (if applicable)	14002

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Abstract

Abstract

For third level students', the way of learning and lifestyle, especially in the Covid 19 Epidemic year of 2020 has propelled into online and blended learning. The use of technology in learning and teaching is even more necessary to ensure the interaction between student and lecturer. The chosen technology used within the study was for students to produce Podcasts as an alternative assignment technique and as a reflective revision tool.

This study was conducted on final degree Veterinary Nursing students using a Podcast application platform to record two individual podcasts of Nursing Care Bundles (total of 64) and self-reflections post lectures for personal revision purposes. Due to the epidemic and change in final examinations, self-reflection revision podcasts were unable to be measured, but student opinion towards these were recorded and were favourable.

Nursing care bundles involve a step-by-step approach to any procedure to be done, for example – the placing of a support limb dressing. Each step needs to be researched for evidence based best practice. Students had the option of presenting the 'care bundle' to the class or producing the work as a Podcast – all students (32) elected to produce a Podcast. A few students also involved themselves in producing personal reflective podcasts for their own personal use for revision purposes prior to their final examination.

A survey filled out by all 32 students revealed that the majority enjoyed producing the podcast better than presenting to the class. Student comments included that they could ensure all information could be verbalized without the anxiety of standing in front of the class. However, students are aware of the important skills gained in presenting to a live audience, therefore a combination of Podcast and student class presentations adds value and fairness to all learner types.

The results also showed that Podcasting could allow the students to express themselves in a relaxed manner; therefore enjoying the process, which results in a memorable experience; this increases the likelihood of information to be recollected. The student also has a recording of the work presented for future use, unlike a live presentation, which is a one off performance. It also gives different user personas confidence in moving towards using technology, which has positive benefits to their future career.

This study has shown that incorporating other uses of technology such as Podcasts to the class gives confidence, student positivity and a modern day dimension to learning and teaching.

Acknowledgments

I would like to thank my supervisor Padraic Lynch in providing support and a positive attitude towards my study.

Thank you to all the Veterinary Nursing students that were involved in the case study, they were enthusiastic and I enjoyed listening to all the Podcasts and assessing how they felt about producing them.

I would also like to show my gratitude to my family, especially my husband who has always given me encouragement, time and patience to research and achieve my final thesis.

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1. Introduction

Fundamentally, teaching and learning begins from the day we are born through observation, listening and interaction. Evidence based pedagogies over the past one hundred years have been sought by educators to ensure that learners are gaining knowledge and skills in a wide variety of techniques and practices. To ensure satisfaction on both sides (the educator and the educated) everyday technology needs to be explored to allow the benefits that this can bring to the new generation of students.

This case study looked at a group of 32 final year veterinary nursing degree students that had volunteered to produce podcasts. A small number of students also partook in producing self-reflective podcasts as a revision tool. This originally was to be used to aid understanding and revision prior to the final written examination. Due to the Covid 19 pandemic, examinations were altered and written course work was used instead, therefore, the reflections were immeasurable to whether they helped with the examination process. However, by encouraging the student to involve themselves in this activity, it engages student centered learning which has been proven by many to be the way forward and requires that the student is highly involved within his or her own learning with guidance from the teacher (Farrelly, 2019). Originally, the ultimate objective of this study was to determine and produce an additional learning aid in the form of a reflective Podcast for student self-assessment and revision. Kolb (1984) identified the reflective theory, as “Learning is the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p38). This study has diverged to look at how podcasts may assist students through blended learning.

The combination of teaching and student interaction needs to be addressed to ensure the best quality of learning can be encouraged (Murphy, 2016). Ensuring the teacher is keeping up with the continually changing movement in technology and encouraging different techniques used within the classroom, it can be recognized that the millennial student (born 1982 onwards) is familiar with using their own devices and we should encourage the use of these within an academic structure (Cropley and Cropley, 2010; Blankenship, 2011).

The use of technology in higher education has increased, even before the need for blended learning; which makes it possible to teach in more diverse ways in terms of social, academic and language backgrounds (Beylefeld, Hugo and Geyer, 2008).

For this reason, encouraging the use of own personal devices to aid the students’ education could be a wasted opportunity. Students are also continually busy and may not have time or are academically not suited to writing, but are perhaps more used to listening, filming and

recording themselves. Reflections have become a common place within academia, specifically within nursing programs and have their place for ensuring the student understands the concept of what they have learned and areas that perhaps they did not, or that they need further research and understanding. Combining a self-reflection via audio recording in the form of a Podcast (a multi-media digital file) will give the student a library and log of topics that can be listened back to at any time (Kolb Cycle) Incorporating music and sounds within these recordings may trigger memories and ensure it is an enjoyable experience and pleasing to listen back to. When relaying information in an examination, thoughts may come back to the podcast and aid the student to answer questions on the specific topic. There are potentially three self-educational benefits to this process:

1. Reflecting – identifying areas that need further research or understanding
2. Verbalization and relaying information – this allows the student to reach greater levels of understanding and articulation (Smagorinsky, 2006).
3. Listening back to information with sounds – confirming knowledge and triggering memory. Echoic memory is the storage of auditory stimuli, which is heard, processed and stored (Buchsbaum *et al.*, 2005).

This can potentially be very useful for students revising for both written and practical examinations. Becoming accustomed to producing Podcasts should also instill confidence and enthusiasm for the subject and future career prospects.

If the involved students feel that the self-reflective Podcasts were of benefit as a revisionary tool, it could be another opportunity for students and educators to fortify this additional method of learning, which may prove beneficial to final grades and understanding.

2. Ethical considerations

For the progression of the study, ethical approval needs to be obtained and approved by the Institute Research Ethics Committee in Letterkenny Institute of Technology (LYIT). The Institutes ethics policy and procedure is outlined on-line with the goal to ensure all tasks conducted are in the best interest of the participants. When comparing this to other third level

organizations, the basis of why ethical approval is warranted is the same. Trinity University, Dublin has a clear outlining of the policy on ethics and advises precisely areas that need to be considered, and forms to be completed for approval (Trinity, 2019). Letterkenny Institutes ethical standard guidelines need to be clearly stated with more accessibility and clarity. Ethical standards and approval gives respect, ensures no unreasonable or unsafe demands required by participants. It also ensures transparency and clarifies areas that may incur violation to privacy (McKinney, 2019). To ensure this transparency, an information sheet is provided to the participant (Appendix A) and a consent form to be signed (Appendix B). Informed consent ensures that the participant is provided with adequate information and is able to withdraw from the study at any time (Day Ashley, 2012). The case study involves all persons over 18 years of age, but consideration needs to be taken into account of students with learning disabilities and older people. Students that will be asked to volunteer their time are already known to the researcher and deliberation of learner types have been identified via persona identification, ideation and iteration (Lynch, 2019). There have been no vulnerable students identified but care needs to be taken into account when using own student cohorts due to the unequal balance of student and teacher (Comer, 2009). For this reason, the study is completely voluntary and no marks will be awarded for their participation. They will also be informed that they can remove themselves from the study at any point and without penalty. When information is gained from the participants, all surveys will be kept anonymous to ensure general data protection regulations are adhered by. Surveys will also be collected by a gatekeeper to ensure to respect autonomy and privacy (Hammersley and Traianou, 2012). Data should be archived for at least five to seven years so that others can re-analyze the results, or if your findings are challenged, they can be reviewed again (Hickey, 2018). To ensure data is stored securely, and under the LYIT's policy, it will be maintained on a password-protected computer and password protected screensaver. All hard copies will not be accessible to any unauthorized persons and will be locked in a cabinet with access only by the researcher and supervisor on request. This is in accordance with LYIT's policy on data protection and storage of electronic data (LYIT, 2015). It can be accessed only by myself and upon request by my supervisor.

3. Literature review

3.1 Definition of an audio file and podcast

An audio file is the storing of audio data on a computer system or mobile device. A podcast is a digital audio file, which can be made available on the Internet, usually as a series. Applications for Podcasts are easily available and can be used to add music and sounds easily. Podcasts have increased in popularity in the last few years, with Reuters (2019) reporting that 37% of Irish people listen to them at least once a month (Newman, 2019).

Research as to the benefits of podcasts within a learning environment shows that it can help bridge prior and new knowledge. Listening to recorded lectures can help the student break down lecture topics and will stimulate a deeper sense of learning (Popova, Kirschner & Joiner, 2014). Podcasts are already being used successfully for content heavy lectures in a University of Technology in Cape Town, South Africa (Gachago, Livingston and Ivala, 2016). Research papers reviewed are all on recorded lectures without the student inclusion of the production of the podcasts. Identifying if it may be of a greater benefit to students to be engaged in the process, it can be seen that elementary schools are beginning to create their own podcasts (Felde & Rogers, 2017). When creating these recordings with friends, classmates or alone these students are learning and developing new skills. By creating podcasts, students learn the skills surrounding the recording, editing and publishing. Learning to create podcasts will also give the students the technological understanding of various recording and publishing applications, which will stay with the students for future learning and progression (Felde and Rogers, 2017; Goldman, 2018).

A study conducted by Chung and Kim (2015) to identify if the use of Podcasts in Higher education resulted in student motivation, revealed that simply the uploading of class lectures in a podcast format would not be particularly attractive or of any benefit to college students. Students instead need to be actively engaged with lecture materials and given opportunities that encourage the interaction of uploading and downloading podcasts of the students themselves. Engaging the students to produce self-reflections and producing a library for revision purposes engages the student for self-study and assessment.

Middleton (2013) highlights that audio has demonstrated benefits to facilitate authentic engagement, which allows students to connect in various ways to the outside world as both publishers and listeners. Audio recordings can nowadays be easily created with small digital recording devices such as smartphones and desktop tools.

Donnelly and Fitzmaurice (2005) imply that students should be given the opportunity to pursue topics in depth to understand the material for themselves. This technique could be described as being student directed learning (SDL) where according to Knowles; cited by Guiter (2014) this technique instills intrinsic motivation instead of extrinsic motivation, by allowing the student to develop own goals through needs and interest. Intrinsic motivation leads to deep learning through enjoyment and personal goals, whereas extrinsic motivation is induced when pleasing others or achieving certain grades (Lin *et al.*, 2003).

3.2 Blended and Remote Learning

Horn & Staker (2012, p. 3) define Blended Learning as: “A formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace and at least in part at a supervised brick-and-mortar location away from home”. This type of learning has become necessary in the year 2020, with very little notice. The use of technology to achieve blended learning sufficiently is highlighted in the fact that students and educators have been forced to learn by being thrown in the deep end. According to Gutierrez (2016) on average, students retain 25 – 60% more material when learning online compared to only 8 – 10% in a classroom. Students can learn at their own pace, going back and re-reading or accelerating through concepts as they choose, therefore e-learning requires 40 – 60% less time to learn (Chernev, 2019).

This extreme change of culture has swept across the educational platforms as a whole. This should be preserved and be used in response to the demands of the digital era.

Blended learning is...



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and



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(Definition of blended learning (Horn and Staker, 2012))

Blended learning cannot entirely work with Veterinary Nursing students, as a large section of the course is practical work within a veterinary laboratory where they build upon key day one skills. Podcasts are audio only, and in-depth details can be recorded on tasks being done and why. Video footage can show the actual task being performed and this is of importance in future times to come. Sterling-Fox *et. al.* (2020) conducted a study on 'nursing skills video selfies' to determine if producing self videos of tasks helped with learning. Initially, anxiety was a factor, but students overcame this with practice. It was also seen that producing visual selfies was difficult due to having to complete the task and record, therefore it ended up being group work. According to the authors, talking through the steps and understanding each protocol was where most learning was gained. Therefore, it can be argued that simply producing audio recordings can have greater benefit and ease than visual or video recordings. Understanding why you are doing a practical is fundamental before actually doing, especially when dealing with live animals or people. So in a teaching environment where no live patients are available, understanding theory initially is of most importance.

Ensuring all learner needs is provided for, audio notes and notes taking can be identified as a support for students with dyslexia (Knoop-van Campen, Segers, and Verhoeven, 2020). Notes that are given online should therefore have additional recorded sessions from the lecturer or if this is not feasible, the student should be encouraged to record them as an audio file or podcast themselves for better understanding and revision.

3.3 Reflective Practice

Webb and Scouler (2011) define a reflection as identifying an opportunity or achievement. Setting goals with steps to achieve these opportunities; review progress and act on outcomes; look for feedback, advice and research and then finally communicate the learning does this.



Figure 1.0 (Gibbs, 2013)

Reflection is a mental process to fulfill and achieve what we feel is the anticipated outcome. It can be broken down more simply into what happened (description), how you felt (good, bad, confusing), analysis of areas for further research and investigation and to conclude with an action plan (Gibbs, 2013). Alternatively, some people may simply ‘be reflective’, and the official process has not been broken down thoroughly, so then an outcome may be unexpected (Moon, 2018). The Kolb cycle for reflective thinking is similar and identifies areas for the use of student interaction with the Podcast. The four steps can be described in the first instance to have a concrete experience, to then reflect on this in observation, followed by abstract conceptualization, and resulting in active experimentation (McLeod, 2017). Traditionally the reflection is good teaching practice and is a suitable model for self-directed learning too. Reflection /reflective learning is likely to involve a conscious and stated purpose, with an outcome that is specified in terms of learning, action or clarification. A similar take to the reflection cycle was investigated by Hattie and Donoghue (2016) where they developed a model that ensured surface and deep learning; both having equal importance. Three major sources of inputs are involved in this model: the skill, the will and the thrill. The student’s prior or subsequent achievement of learning is the ‘skill’. How the student then relates to various dispositions towards learning is referred to a ‘will’. This in turn needs to give motivation to the students, in other words, the ‘thrill’. Relating these model thoughts with the reflective process may help the understanding and the thought process to a reflection. In other words, encouraging students to develop motivational tasks for their own deeper understanding through self-assessment should be encouraged.

Watkins, Carnell and Lodge (2007) stated that active learning includes three dimensions of learning: behavioral, cognitive and social.

Active learning can be separated into three different types: active, interactive and constructive (Chi 2009; Chi and Wylie 2014). Being active simply means, “doing something physically” (Chi 2009), for instance through rehearsing or repeating. Interactive means dialoguing and creating processes (Chi and Wylie 2014), for example through a reflective process. Finally, constructive behaviours can be depicted when the students produce externally for themselves an additional learning item (Chi and Wylie 2014). For the purpose of this study, the constructive behaviour will be to produce a library of revision podcasts.

3.4 Music and Sound

Music and dialogue has a prominent place in the day-to-day life of many people. With access to the Internet and radio on mobile devices, people will be listening from early in the morning until late at night wherever they may be. Because of its near ubiquity, music and sound has been identified as an important area in the construction of autobiographical recording for memories and making judgments about oneself and others (Jäncke, and Sandmann 2010). These sounds may help within the recording for personal self-reflections for academic knowledge.

Most people are uncomfortable with listening to their own voice; this is known as voice confrontation. The reason for this is that when we hear our own voice as a higher pitch than what we are used to. Tones would be heard at a lower frequency through conduction of vibrations through the bony structures within the ear (Fain, 2019). When adding background music and sounds to the background of the audio file, this takes away the uncomfortable silence and the single voice.

Early sound effect recordings originated largely from Jack Foley in the 1920's where he added realistic sounds to silent films (Owens *et al.*, 2016) This creates hyper-realism, which is the idea that a sound must be bigger, more impressive and ‘more real’ than the real world sound, so as to create a level of excitement or tension (Mengual *et al.*, 2016). To have the ability to control and interact with these synthesized sounds in a media file creates a feeling of a realistic memorable recording (Heinrichs and McPherson, 2014). Adding these sounds and music into a recorded podcast allows the student to feel in control and creates an original and notable piece of work to listen back to in the students own time.

Moffat, Selfridge and Reiss (2019) state that it is clear that sound effects add vital cues for listeners and viewers across a range of media content. They conclude that sound is a growing area for research on the development and benefits to all areas including learning and education.

Listening to these self-produced recordings repeatedly may have a large impact on memory performance and facilitates the formation of multiple memory traces within different contexts, known as the encoding variability hypothesis. The encoding variability hypothesis deems that when people are subjected to information more than once, the probability of retrieving that information thereafter is greater if the material is encoded differently (Burnkrat and Unnava, 1987). Another study conducted by Ezzyat *et.al* (2017) looked at memory and identified electrical stimulation of the brain to trigger memory stimuli with positive outcomes. This is of course one extreme to another, but applying repetition and stimulating sounds during a podcast may enhance memory and learning.

3.5 Learning Objectives of producing Podcasts

Podcasting and other online/ remote activities should complement the learning outcomes and objectives in a blended manner to facilitate different types of learners in the classroom and provide a relevant, meaningful and worthwhile learning experience (Mitchell and Former 2010).

When considering appropriate learning tools for a module, one needs to look at the learning outcomes and map these appropriately to each assessment or learning technique. The learning outcomes for this module are to;

1. Demonstrate understanding of the process of producing diagnostic images.
2. Compare different imaging modalities
3. Critique best practice nursing care of patients with acute and chronic diseases.
4. Describe the role nursing care plans in the management of disease states.

This module requires the student to be critical and have a deep understanding of disease states to ensure that the nursing is evidence based and up to date. Evidence based nursing and care plans ensure the patient receives the best practice patient care. Students are required to break down the nursing care into steps and research each step for up to date best practice from reliable sources. The students must understand the technique of research and then be able to

demonstrate how they would put this into action. They should present this in an appropriate written step-by-step approach; but with producing a Podcasting care bundle, they have the additional task of talking through each step; this adds clarity and understanding. It also gives some feel of doing – which can be lost in a practical sense in a written piece. These step by step nursing care bundles are essential for teaching and aiding student nurses and vets, it guides them through a chronic or acute illness and gives best up to date evidence based practice.

Another learning outcome was to compare diagnostic modalities, such as radiographs, ultrasound, Magnetic Resonance Imaging (MRI) and Cat scans (CT). Each has positives and negatives, depending on the illness being diagnosed. Podcasting in groups may give an opportunity for students to achieve group work, with a discussion around their experience and research. An added task could be peer reviewing each other's group work. This will allow students to hear other groups work and review how well they have done. Students can effectively learn a lot for looking at other students work – it can bring on their own work by looking at areas they could improve (Rollinson, 2005). By doing this task, one is potentially using group work, peer review and self-reflection within one task; all of which are valuable learning aptitudes.

Student-generated Podcasts could help in the development of in-depth knowledge in the subject area. It requires the student to think critically and progress problem-solving skills. It can also develop the students professional skills, such as public speaking, presentation skills and if producing in a group; teamwork (Kravcenko, 2016; Lee et al., 2008).

Students will still need to write out their thoughts and research, including references to ensure academic and trust worthy sources are used. Verbalizing the work achieved reinforces the information gained by the student.

3.6 Fairness and Inclusion

When considering if Podcasting ensures fairness and inclusion of different learners types, one can look at the guidance of the eight instructional approaches, which are subsequently listed (Kirkwood and Price, 2011; Hoe and Lee, 2016). The podcast tool is creative (1) and active (2), gives collaborative learning (3), as the students can do group work or listen to each other's work if appropriate. This can be shared on personal or public networks through social media (4) which encourages social learning (5) and flipped learning (6) For the purpose

of this study, the podcast will not be shared or placed publically, but future consideration of these aspects can be put into place if necessary. This type of learning is mobile which means they can access it at any point (7), and also allows the lecturer to monitor the competency of the learner (8). All of these allow flexibility, self-reporting and interaction (Kirkwood and Price, 2014).

4. Designing an additional learning tool to suit all learners

When designing a product or service, a design thinking process can be applied that considers all stakeholders, assists in objective definition, develops user personas, and highlights pain points via user journey scenarios and progresses through ideation, iteration towards implementation. A six-step process can be taken to identify areas that need deliberation;

- i. Define the objective
- ii. Generate appropriate user personas
- iii. User Journeys/ Journey Mapping/Pain Points
- iv. Ideation
- v. Iteration
- vi. Implementation

It is crucial that the objective needs to be defined. In this case the objective is to determine and produce an additional learning aid in the form of a reflective Podcast for student self-assessment and revision.

Each area needs to be discovered, researched and defined to ensure fairness and equality to the user. Once a design is in place this can be implemented and measured throughout feedback.

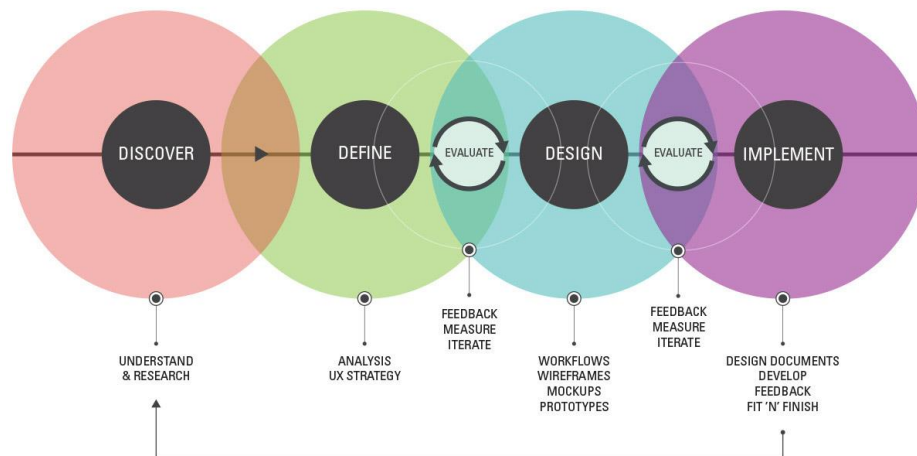


Figure 2.0 (Vladcdesign, 2019)

4.1 (ii) When thinking about whom this technique would suit, I decided to identify two user personas. Personas can be fictional characters that are created to help identify the users' needs, behaviours, experiences, needs and goals (Dam and Siang, 2019). Different students have different expectations, depending on character, learner types and background life. The ultimate goal is to create a memorable and useful learning experience that suits the target user group. All considerations need to be taken into account of students' lifestyles and learner types to ensure equality towards all students.

Therefore, two diverse personas were created. For the purpose of this study they will be identified as Ava and Daniel. Ava is a mature student and has always had the ambition to become a veterinary nurse. She is from Donegal, married young and is now a single mum with a teenage daughter. She has struggled somewhat through life but has a passion for animals, is dedicated to her studies and is a consistent high achiever. She juggles home life, college and works weekends in a veterinary clinic to sustain the financial commitments.

Daniel is 21 years old and is in his final degree year at college. He lives in a shared apartment with two others. Originally from Galway, he travels home often to see his girlfriend of three years. He stays at his parents' home and enjoys the comfort of home and mod cons that he currently doesn't have in the shared student accommodation. Daniel strives for the most up to date's devices and likes to work in the local pub to ensure he can afford these necessary luxuries. Daniel felt he needed a degree and was always told at a young age he was good with animals and should perhaps go into that line of work. Eventually, Daniel wants to go on and train as a veterinary surgeon but academically he needs to improve to attain the grades.

He is very happy to ensure he puts just enough effort into a project to sustain a pass grade throughout his three years at college and school.

Via the user persona process, we now have two characters that we need to engage (Daniel) and challenge (Ava). How would the Podcast revision tool help each of these students and how might they utilize it?

4.2 (iii) By progressing user journeys and mapping how the user might engage with the objective, we can consider the persona behaviours – e.g. Daniel is a millennial and craves technology. Involving him in a digital technology technique could inspire motivate and promote self-credit. Mobile devices and their use, come as second nature to him. He is accustomed to seeing himself on screen via video and photographs on his mobile phone.

Ava on the other hand may not feel she has time to produce these recordings and is anxious about using something she's not so familiar with. She's not a confident speaker in class and doesn't want to come across as being 'a know it all' in front of younger classmates. Recording self-reflections will allow her to demonstrate her strengths and weaknesses for her own personal use but at the same time give confidence through talking out loud. She may have to become accustomed to using the application and have difficulties with voice confrontation. She is juggling chores, family; a job and has very little time. On the other hand, the time she puts into the Podcasts, she will save time studying for exams by listening to the self-produced Podcasts whilst she is in the car, work or home.

Students' individual needs need to be considered. Why would Ava need another technique to help her study, as she already studies hard and gains good results? Avas' needs differ from Daniels' quite dramatically due to personal life more than anything. She puts pressure on herself to excel at everything she does but also feels the guilt of putting strain on the family and work life. Producing these Podcasts should potentially take stress off before final exams. Daniel has very little out-with college life other than his part time job and socializing with friends. He needs to keep up to date with technology and involving himself in it has benefits to self-recognition and motivation.

The user journey needs to be broken down into a typical scenario/s to ensure the podcast production suits all learner types and backgrounds. Pain points for each user persona may occur before, during and after the recording. These points need to be identified and developed to achieve success for equality between all students.

Pain points for Ava may consist of the uncertainty of being able to produce a Podcast; whereas Daniel may enjoy the thoughts of being able to apply his knowledge of technology. To ensure all learners are given confidence and equal opportunity, a clear and concise demonstration will be given in class. A prerecorded Podcast consisting of sounds will be played to show the finishing product.

During the recording, Ava should establish how to record, apply sounds and to become comfortable with listening to her own voice. Daniel may find he will leave the recording to a later date when he's at home as he has a busy social calendar in college. For this reason, time may need to be allocated after a lecture or practical to ensure immediate response and learning is taken on board. Sounds can be added at a later date if necessary. Once the recording has taken place and a library of revision materials are stored, both Ava and Daniel can listen to them in their own time before exams or written assignments. Both may be uncomfortable listening to themselves, but with added music, it may help trigger memory and create a more relaxed tone.

An uncertain journey can ultimately encourage learning. When we step away from the familiar and accept uncertainty, this inevitably accompanies new experiences and innovation (Liedka, 2011).

4.3 (iv) Ideation is the process of producing a broad set of ideas on a given topic, with no attempt to critic or evaluate them (Harley, 2017). When considering the Podcast idea and ensuring problems and positive aspects are dissected, some areas that were highlighted were identified with the recording of the podcast.

Accessibility to creating a podcast needs to be considered to ensure every student has the opportunity to be included; Raidió Teilifís Éireann (2019) reported from Deloitte's Annual Mobile Consumer Survey that 97% of Irish people between the ages of 18 and 75 years own smartphones.

The recording of Podcasts may be deemed difficult and time must be allocated for students to be able to reflect on a class soon after a lecture or practical takes place. The most likely place a student will record is at home in their own environment, so note taking during class in preparation of producing a recording later may be an option. Some students may have the facility of owning a car and this may create a quiet place to record; other opportunities for students wanting to record would be a specific virtual learning environment (VLE) room within the Institute or the use of an empty lecture theatre. Both these latter options may not be regularly accessible or guaranteed feasible.

The virtual learning platform currently does not avail of Podcast facilities, so sharing these Podcasts within the institute is not possible, unless the podcasts are made public. This may be a future aspect to further investigate post the case study.

Revision aspects of the podcast are the main final focus for production. Students can listen anytime via earphones or in an open space such as the car.

4.4 (v) Iteration is a design methodology based on a cyclic process of prototyping, testing, analyzing, and refining a process or product. Based on the results of the ideation, the most appropriate design, changes and refinements can be made. Wilkinson (2016) uses a positive user centered cycle of design where he looked at the users views and opinions, recognized their needs, developed an appropriate design and this lead to increased engagement.

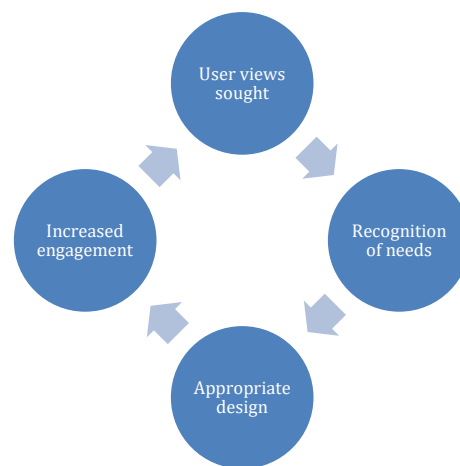


Figure 3.0 (Wilkinson, 2016)

4.5 (vi) Implementation of the design idea is the final step but the path ultimately weaves back and forth to ideation and iteration until the final implemented design is acceptable and of ultimate standard to suit the greatest number of students (Brown, 2005). Designer personalities will give empathy and enthusiasm towards a new idea and through experimental repetitions will produce a product or process to enhance productivity – in this case the students’ education (Brown, 2005).

Students as a majority have access to a smart phone and the ability to download the free App. Anchor. They will be given time to take notes in a reflective process and to ensure clarification of this, a reflective summary will be given verbally by the lecturer. This ensures all students understand the reflective process. Recording will be recommended to take place

in the students' home environment and sounds added at the discretion of the student. Listening back to the podcasts can be done at any time the student feels the need to.

4.6 The concluding fact to the researching of literature regarding the use of technology such as Podcasts to enhance and support student self-education comes to the necessity to keep up with the steadfast development of the Digi technological world. Different opportunities and privileges are apparent to the new generation, with expectations high (Talwar, 2019). Future use of robots and globalization (globotics) are becoming a conventional way of employment (Baldwin, 2019) and we as teachers need to be aware of this to ensure the education is not outdate before a student achieves a qualification. Human reaction and educational facilities continue to struggle to sustain change; therefore continued professional development in technology needs to be focused on.

5. Research Methodology

The original purpose of this research was to: (a) to ascertain if audio tools aide and develop student learning and memory using reflective technique and sounds; (b) to explore if the listening to the audio file preluding examinations supports the students' examination ability; (c) to determine if using Podcast/ Audio recordings gives motivation and confidence to future podcasting/social media experiences within the students' field of expertise.

Due to the Covid 19 pandemic, final written examinations did not take place; instead written essay assessments were used. Therefore unfortunately, a measurement of the use of a podcast for memory was not possible. Fortunately, 32 final year veterinary nursing degree students completed two podcasts each over the five weeks. A survey was given to these students to fill out anonymously.

This information was then analysed and if a constructive result is realized, then future use of personal student audio files or Podcasts should be considered and encouraged.

This chosen topic of producing podcasts as a reflective learning tool involves a case study due to its nature (Yin, 2009). It involved a small group of participants over a relatively short period of time of five weeks, with the involvement of an activity, in this case; recording a Podcast for revision and assignment purposes.

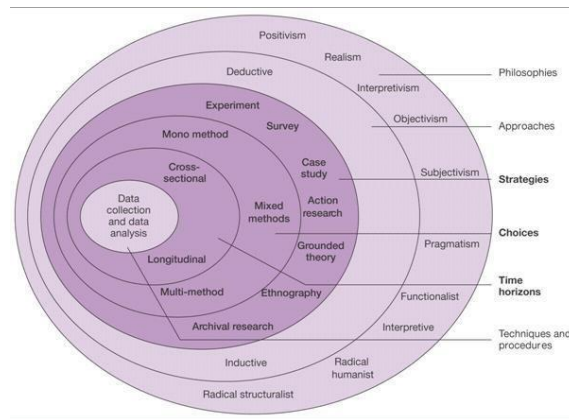


Figure 4.0 The Research Onion (Saunders *et al.* 2009)

5.1 To ensure the right methodology technique is used, the research onion identifies areas to deliberate and consider. For this particular study, it can be said to be objectivism due to the activity undertaken by the participants being a social phenomenon and how it may impact different learners (Saunders, Lewis and Thornhill, 2012). The second layer reveals that the study will be inductive as I wanted to create my own theory without measuring against an existing theory. The strategy that was used to gain the information needed was a participant survey. It allowed the researcher to receive individual opinions and which was evaluated and analysed.

5.2 Research strategy and approach is then identified. Understanding if this activity is of benefit to the student will provide an insight into the use of this formula for future students. Podcasts used in this way may be seen as phenomena due to lack of use or research. For this reason qualitative data through surveys was used. This form of data analysis will give “richness and holism, with strong potential for revealing complexity” (Miles & Huberman, 1994, p. 10). It allowed the researcher to make sense of and interpret the participant’s feelings towards the task (Denzin & Lincoln, 2005). Ideas from these results may be negotiated and evaluated to ensure all intercultural attempts are made to solve revision problems and busy lifestyles for future students (Chambers, 2000). Qualitative data can also be used in combination with quantitative data to strengthen intervention research design (Collins, Onwuegbuzie, and Sutton, 2006). It was hoped that quantitative analysis could also be used in loosely observing past years grades for this module with this year’s grades. This unfortunately was not possible due to the Covid 19 Pandemic; students were given alternative written final pieces of assessment opposed to written examinations in a controlled exam

environment. Comparing results therefore would not give a true reflection if the Podcasts were of use.

5.3.1 Implementing the podcast task to the students went as follows;

- a) Introduction of the concept of Podcasting
- b) Clearly communicated why the podcasts can add value to their learning
- c) The students were told exactly what was expected from them
- d) Time and information was given for them to come to grips with the podcast tool
- e) An example of a podcast is given – practice what you preach.

a) The researcher/ lecturer gave an introduction of the use of Podcasts as a learning and assessment tool to the students at the beginning of the six-week module.

b) The benefits of using an audio tool for their individual gain was discussed, such as producing a reflective tool to aid revision precluding final examinations. It was explained in such a manner that this was voluntary and students had the option of trying this learning technique. Giving students autonomous learning choices, and the ability to make choices can give increased motivation for learning (Hoecherl-Alden and Griffin, 2014). A few students decided to produce reflective podcasts for their own use; the researcher feels that these are now redundant due to the final examinations not taking place due to the pandemic. Fortunately, it was decided by the lecturer to give the students the option to produce a Podcast instead of doing an oral presentation assignment in class (before the pandemic). All thirty-two students decided to try the podcast.

c) The podcast task was to produce a veterinary nursing care bundle for an acute veterinary condition of their choice. A care bundle is a step-by-step approach to treating a patient for any particular disease or process. Each step needs to be researched with evidence-based literature to ensure it is up to date and reliable. This assignment was repeated the following week but on a chronic veterinary condition of the students choice. Again, all students (32) tried the podcast, rather than presenting to the class.

d) The students were given a full week to produce their podcast assessment care bundle – care bundles were discussed in depth in class and questions were raised on how they may

present their findings, through audio rather than visually. Apprehension on producing podcasts was noted but questions were encouraged and students were aware that there would be leniency for the first assessment. Feedback before the submission of the second podcast assessment was given. Examples of areas that students needed to improve were sound volume, length of podcast (usually too long) and academic referencing. Therefore in total, the students produced a total of sixty-four podcasts over two weeks.

e) To ensure students were able to access and use the Podcast platform, the researcher showed the students how to create the Podcast in class. Physically showing students a new practice helps the learner to digest and understand a new technique and gives an opportunity for questions (Barry, Gay, Pelkey, Rothrock, and Mnayer, 2019). According to Wlodkowski and Ginsberg (2017) this will reduce anxiety of the unknown and also creates motivation.

Students submitted their podcast recordings by email to the lecturer/researcher for grading. The podcasts were not published to the public and are stored in a secure password protected computer.

Additional Podcast tasks were assigned to another thirty-one second year veterinary nursing students during the online teaching due to the pandemic. Originally the students were to produce a 10-minute presentation to the class on Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis of a chosen veterinary clinic for the Veterinary Practice Management module. Instead, I assigned them to produce a Podcast, which again, I showed them how to do remotely with an open Blog available to ask questions or queries. Thirty out of the thirty-two produce a recording and submitted for marking. I then requested the students to voluntarily fill out a survey.

5.3.1 Data Collection Methods

To assess the benefits of the use of podcasts as a blended learning, the collection of data consisted of survey questions. The questions were worded in a way to evaluate if students were comfortable and enjoyed the process of producing these recordings.

An assigned gatekeeper, who will safeguard anonymity, distributed and collected the surveys at the end of the six-week module. This ensured the students didn't feel that they were penalized (this was explained with the participant information sheet and verbally). Gatekeepers ensure that ethically the research study is conducted fairly, and consideration should also be given to the chosen gatekeeper to ensure they are given support and guidance in their role (Singh and Wassenaar, 2016).

Thirty-two anonymous surveys were collected after the six-week module for evaluation.

Originally, the written exams would have been ten weeks later, with the hope that the students that have participated use their Podcasts to revise. A further survey would have been sent to all students to assess if these Podcasts had a positive effect on the examination.

The second year students were sent an email to ask if they would like to voluntarily fill out a survey for the Podcast they had produced for the SWOT analysis. Only five out of the thirty-one students responded.

5.3.2 Data analysis consisted of combining and analyzing the survey results, which will enable an insight to the future use and development of using Podcasts as an assessment and revision tool for students.

Each survey was broken down into individual questions with a percentage and overall evaluation being made. Evaluating if Podcasts are overall fair and inclusive to the majority of learner types by asking how they felt about doing the task, what type of learner they feel they are, thoughts group or individual work and benefits they may see to producing podcasts in the future. By analyzing this small sample group, it will give future teachers another dimension to aid teaching and student learning.

6. Results

Firstly, I wanted to know how much students knew or were aware of Podcasts, considering the millennial students are using technology daily. All students had heard of Podcasts with 63% admitting that they would never have thought of doing one.

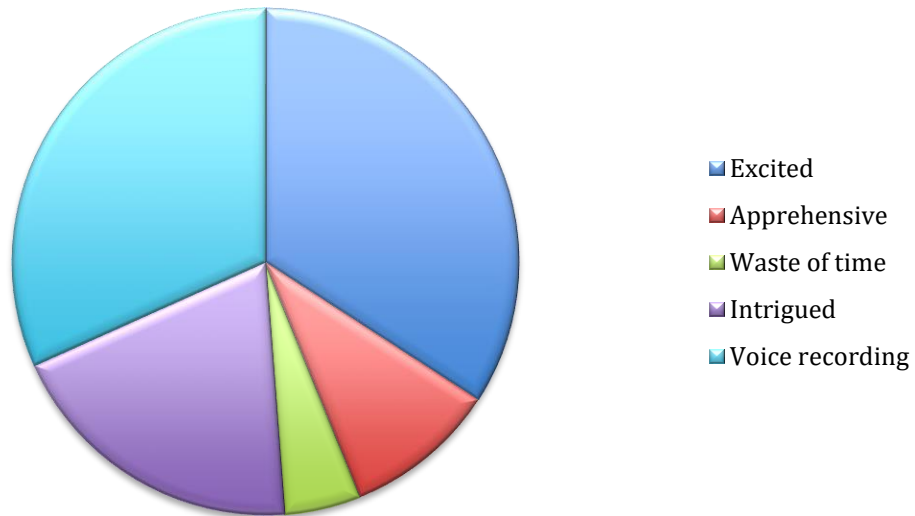
When asked how often they listen to them, 13% said all the time, 22% occasionally and 6% used them to help with research and study.



A couple of students commented that they listen to lifestyle and specific veterinary medicine podcasts, but also commented that there is very few veterinary nursing specific ones. Other comments included ‘I never realized how helpful podcasts could be’.

Secondly, I wanted to know how they felt when asked to produce a podcast; are they excited, apprehensive or felt it was something they just had to do, as it was an assignment. 44% students reported they were apprehensive and really didn’t want to hear their own voice. 25% students were intrigued, 13% excited by the prospect and 6% thought it was initially a waste of time.

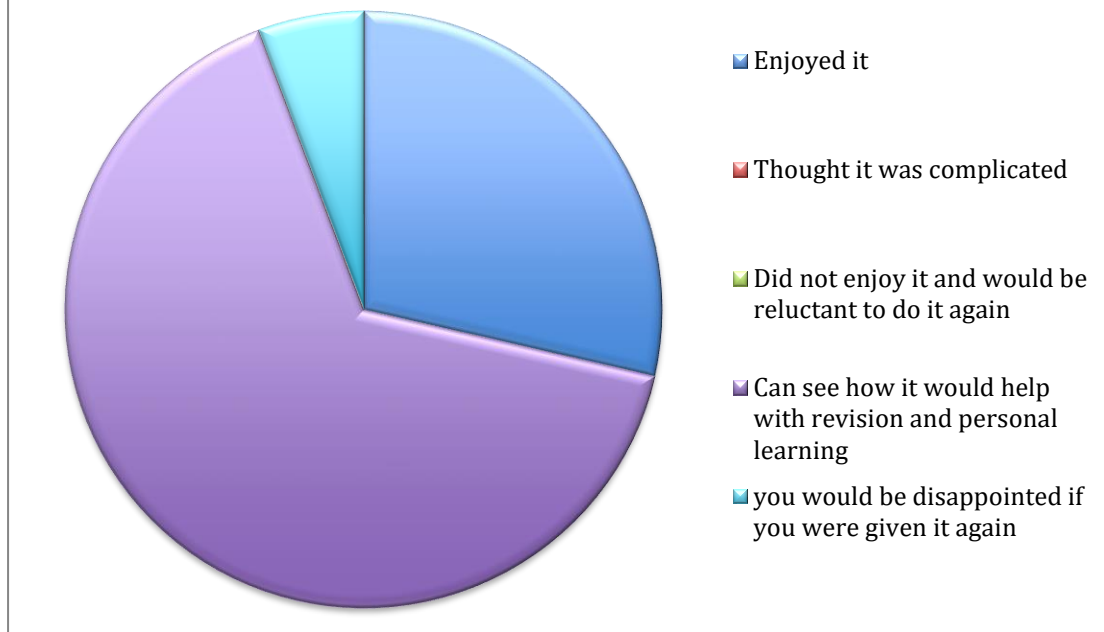
Podcast initial student feeling



A lot of students added additional comments that they preferred to do the Podcast over standing in front of the class presenting a PowerPoint presentation.

And thirdly, once they had participated, I wanted now to know how they felt. 31% reported that they enjoyed producing it, 72% said they could see how it would help with learning and revision. No one reported they thought it was complicated but 6% said they would be disappointed if they were given this task again.

When you completed a Podcast, how did you feel?



Additional comments for this question included;

'I though it was fun to make'

'I enjoyed it more than standing up in class, as I felt I got to say everything I wanted without forgetting it'

'I did not enjoy it the first time, but when I got used to it, I found it good'

'Was useful to talk through the assignment as a way of repeating the information'

I wanted to know if the music and sounds helped with producing and listening back to the podcasts. The majority (44%) said it did, 25% were unsure and 16% said they didn't think it helped.

Comments on this included;

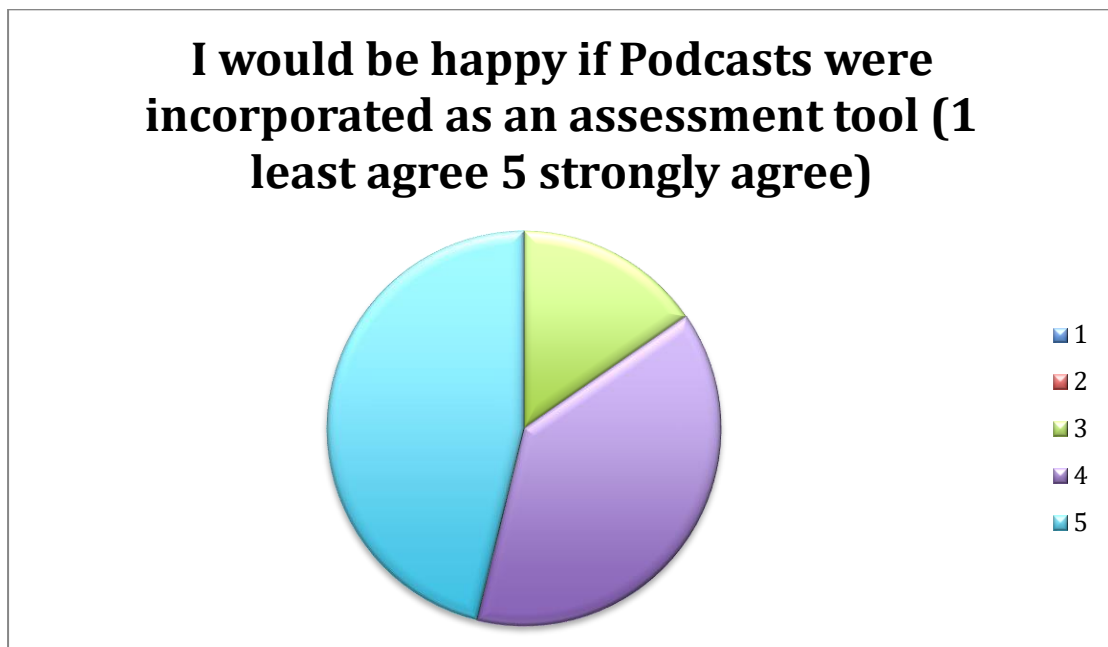
'Made it more personal and interesting'

'Made it easier to listen back to, voice was less monotonous'

'Sounds did not help but music did'

'I would be distracted listening to the music in the background'

When grading the use of Podcasts as an assessment tool from 1 – 5 (5 being the most useful), 38% rated them as 5, with 31% rating a 4 and 13% rating a 3. No students graded them at a 1 or 2.



Comments for this question included;

'Don't like presenting to the class'

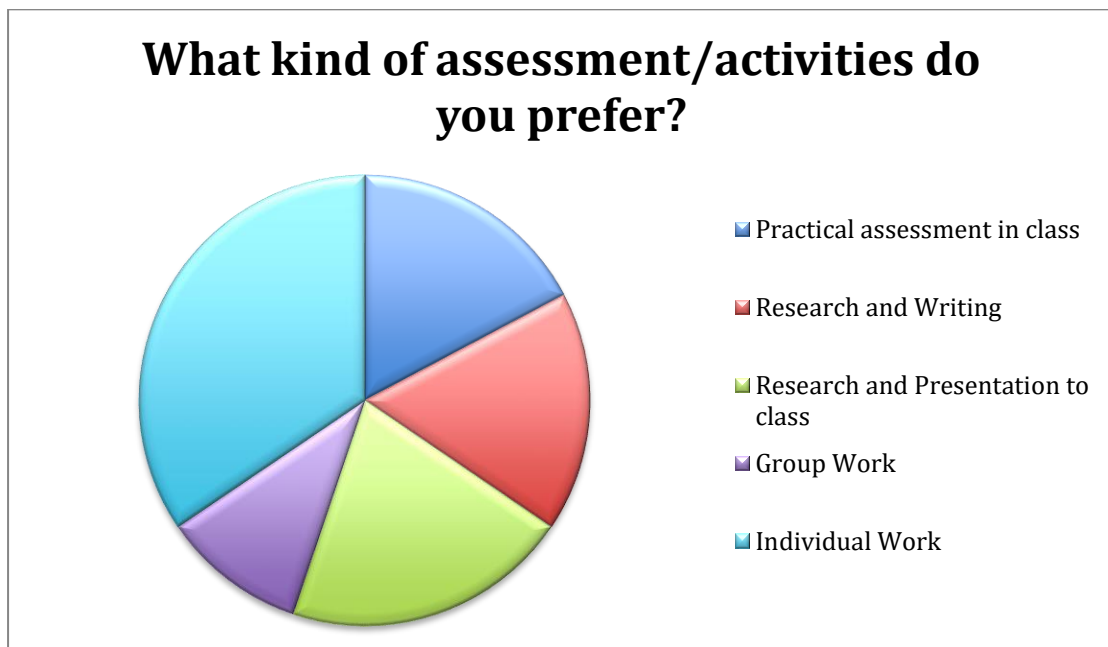
'Dependent on the type wanted, I feel it would be hard to do a podcast for certain assessments'

'I much preferred this to a class presentation and I think I retained the information better'

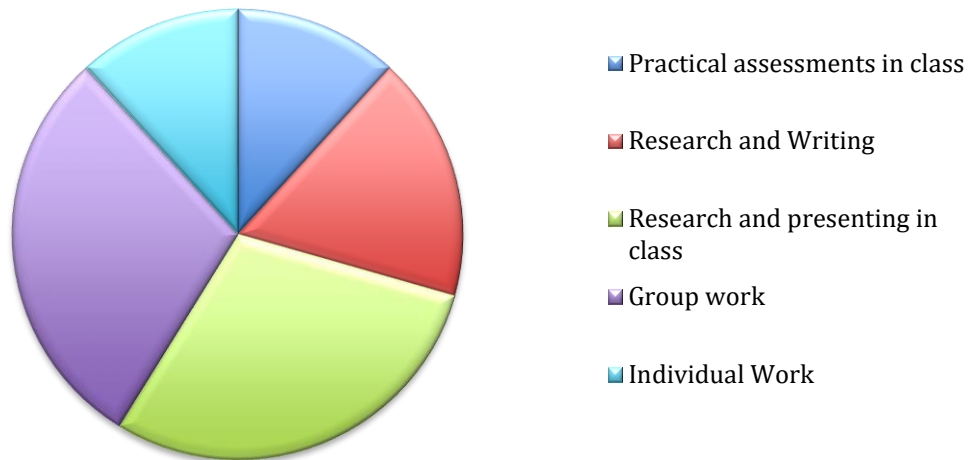
'Actually a good idea, but does not help with public speaking which I think is a very important tool to learn in college'

'Presentations bring a lot of anxiety'

I was then interested to assess what type of learners they feel they are themselves. The majority said they like working individually (31%) compared to working in a group (9%), presenting and researching in a presentation form such as PowerPoint was nearly balanced in like and dislike (55% like and 45% dislike). Research and writing was positive (63% like and 37% dislike).



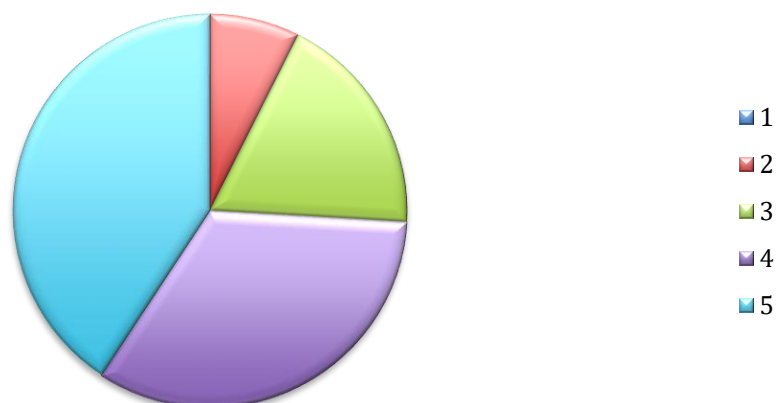
What kind of assessment/activities do you least prefer



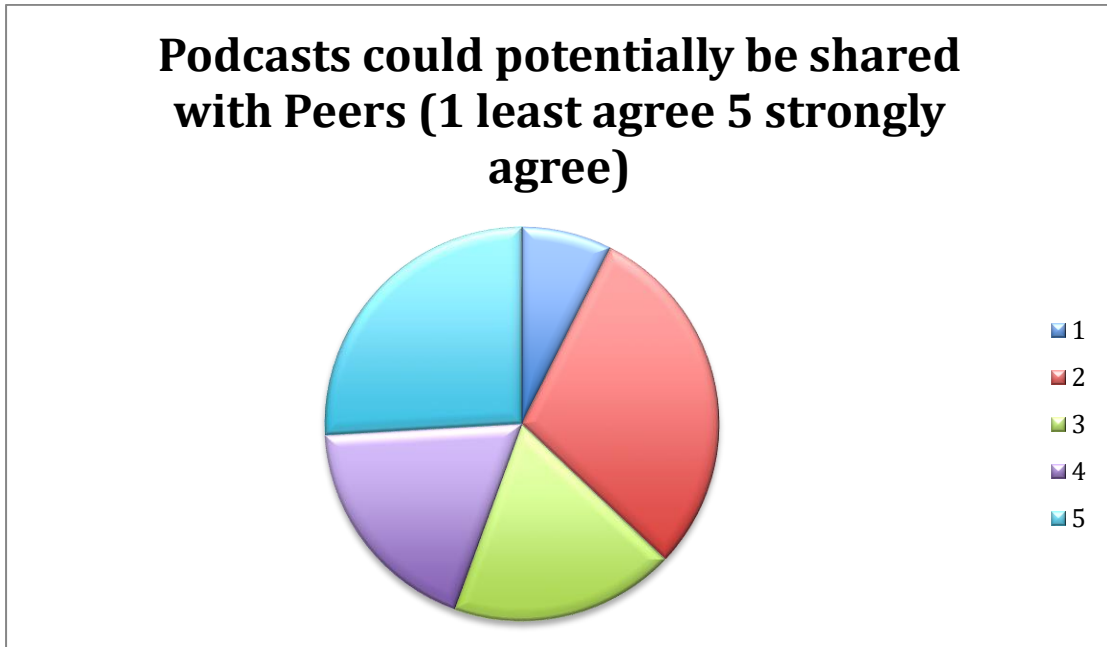
I wanted to know what benefits the students could see to producing podcasts, so I asked them to grade from 1 to 5 in agreement or disagreement – 5 being strongly agree.

The first was if they could see how they could end up with a bank of information for revision purposes, 41% graded this as strongly agree (5), 33% graded a 4, 19% graded 3 and 7% graded disagree (2), with no one strongly disagreeing.

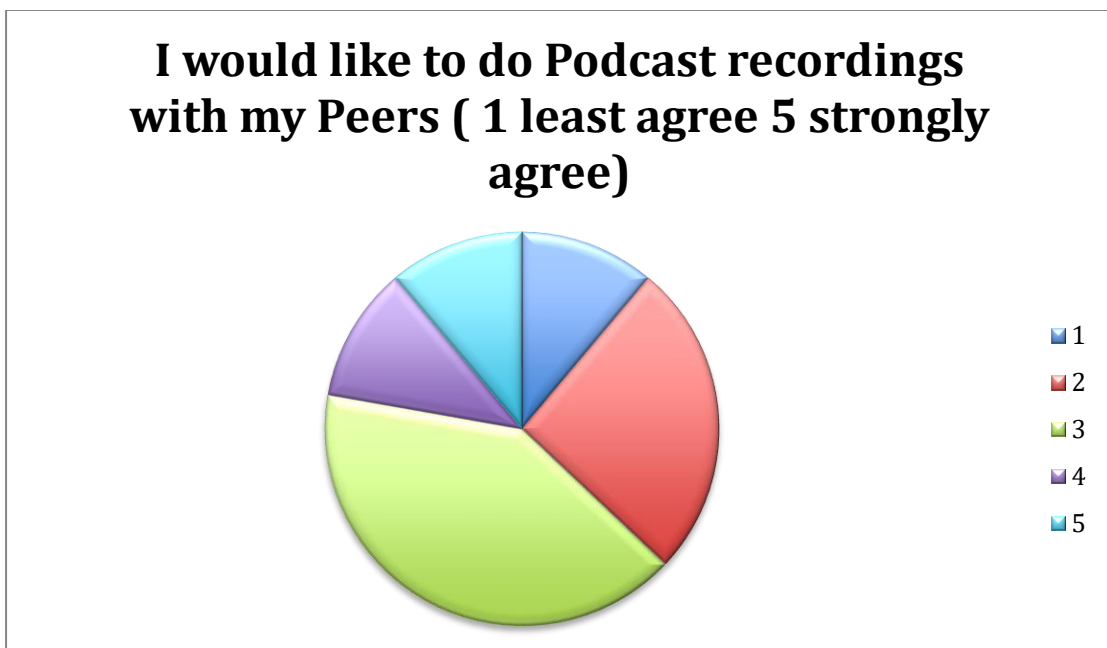
Podcasts could be used as a revision tool for students (1 Least agree 5 strongly agree)



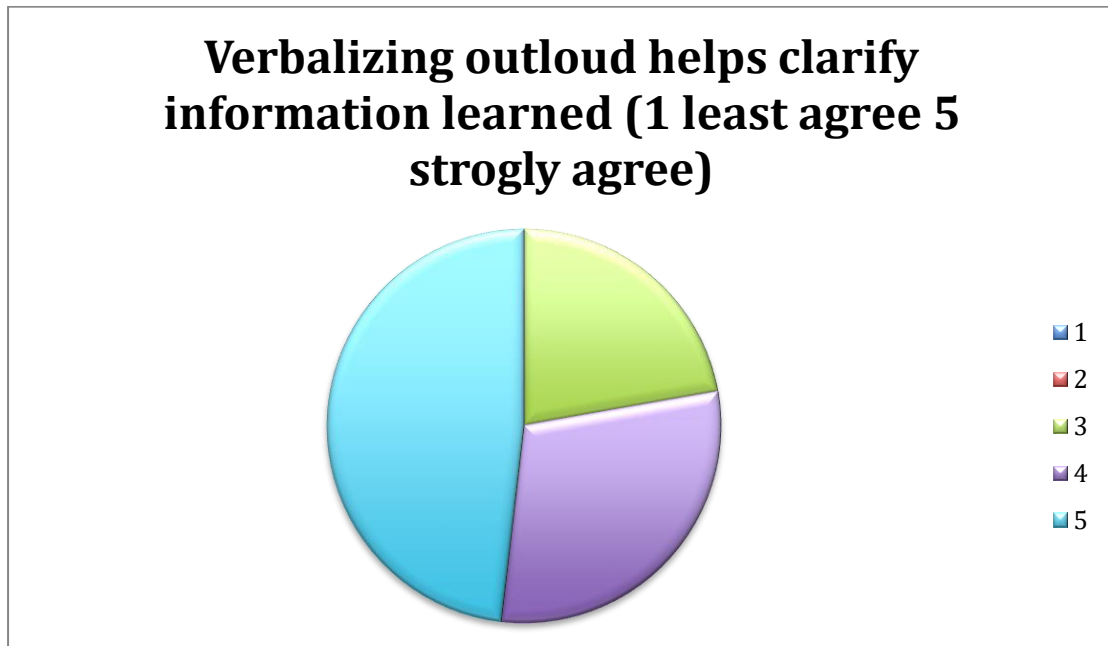
I wanted to see if they thought sharing with peers would be useful. The majority (30%) graded this comment at a 2 (disagree), followed by a strongly agree (5) at 26%, the other students graded between 3 and 4.



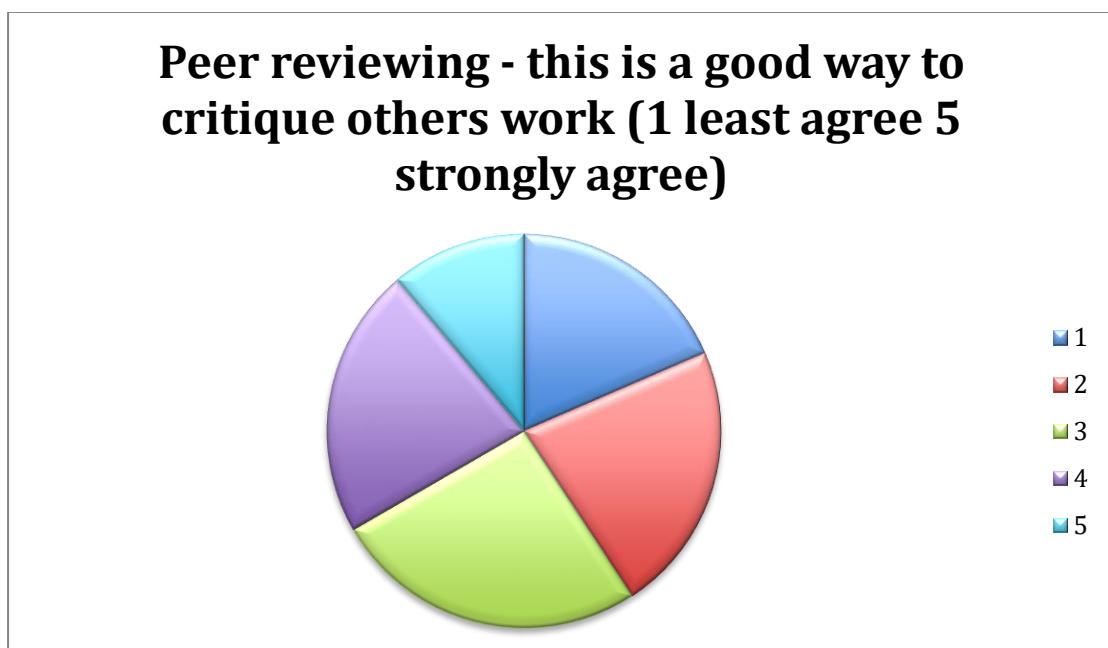
I was interested if the students would like to do group recordings with peers or friends. The majority (41%) graded this as 3 (unsure) and followed by (26%) a grading of a 2 (disagree).



Verbalizing information may help with retention and a deeper understanding. 48% strongly agreed with this, followed by 30% graded a 4 and 22% a 3 grade. No one disagreed below the 3.



Listening to peer podcasts may help with peer reviewing. Student's opinions on this aspect was 26% graded this as 3, with equal numbers (22%) grading at a 2 and 4. 19% strongly disagreed with peer reviewing with 11% strongly agreeing with peer review.



7. Discussion

The students' reactions to being involved in producing Podcasts initially were full of apprehension, mixed with intrigue and excitement. All students that participated had heard of Podcasts, which was not surprising. Steve Jobs and Apple in 2005 claimed that Podcasting is the next generation of radio users (Munford, 2016). The majority of the students had never thought of actually doing a Podcast, so being given this task has given them a skill that perhaps they would never have achieved if they were not assigned it. The Podcast assignment was a choice that was given to the student to participate, with guidance from the lecturer as to the possible benefits to this task. Students feel autonomous once they understand the value or relevance of a task, particularly if they believe that the task aligns with their values, interests, and goals. Once competent at a task there is belief that they know what to do to be successful and feel capable of mastering challenges (Parker, Novak and Bartell, 2017). To engender competence, if the student believes the given process is too complex, they will opt for an easier or known choice. If they are guided and given a little choice, for example; able to choose their own style, music or subject choice, then they are more likely to embrace this challenge. Once the students had tried and subsequently submitted their first Podcast, the majority agreed or strongly agreed that they would like to see future assessment in Podcast form. A large majority (72%) also reported that they could understand how it would help with personal revision.

As discussed previously, people do not like the idea of hearing their own voice and 44% of the students were apprehensive of this thought. The majority thought that adding the music to the Podcast helped with this. A few comments included that they found the music a distraction, so would not include it in the future. Lehmann and Seufert (2017) concluded that background music has no affect on memory or learning. But by simply adding music at the correct volume is more of a pleasing aspect rather than for memory or learning. Adding different sounds such as animal noises or cheers (included on the free app.) intermittently did not seem to help and caused more workload to include them. Overcoming the feeling of discomfort of hearing ones own voice may take time and building confidence. This would be similar as working with others in a group, or allowing others in the class to peer review ones work. The majorities of the students prefer to work alone and were not keen on the idea of peer review of the podcasts. Audio recording has potential to help with written academic

work and if done regularly by students, this will allow the normality of listening to own their voices. Smargiassi (2018) comments that if reading your own written work out loud is difficult and does not record well, then potentially, this will be difficult for the reader of the essay to understand. This puts into question if perhaps a percentage of written essays should be recorded and submitted to ensure a deeper sense of learning but should not replace the written language, only for the enhancement of student writing. If recording is encouraged early on, it can add value to words and encourages conversational aspects to written pieces by researching different author opinions. This may help students argue their own opinions and will give confidence and higher self esteem over time, including hearing their own voice. Many students surveyed commented on finding the Podcast an easier and less anxious approach than presenting in front of the class. One student felt they forgot aspects or areas when presenting, so therefore Podcasts may allow the student to feel they can achieve a better grade due to being able to include everything they have researched and feel is necessary to include. On the other hand, some may argue that if the student understood everything they had learned, they should be able to present this information to the class without reading or memorizing the information. Abrahams (2019) advises that memorizing a presentation is not a good idea and adds to the anxiety. Instead, confidence comes with knowing the subject. Reading and recording for Podcasts may prove that students have not got that deeper understanding for assignments.

Reflective personal podcasts may be considered as the first step to producing a professional or academic reflection. A personal reflection allows the learner to reflect in an informal way to ensure they allow themselves a full learning opportunity without being conscious of appropriate language or censoring oneself. Once the learner has developed arguments or thoughts, these can be worked through step by step to produce a written academic essay to show structure to their thoughts on how to promote their own learning; theoretically and personally (Edinburgh University, 2019).

The majority of the students identified positively towards the potential use of reflective podcasts for their own personal learning. I sometimes feel that students don't particularly understand what the effect of a written reflection has, they perhaps miss understand that it is for their own personal understanding, rather than the lecturer checking that they have researched an area of learning. Some unofficial feedback from past students of mine think reflections are just writing down what happened, what should have happened and how they could have done better – this work is submitted on the account of lecturers, but students miss

the point that a true reflection is for their own personal learning. By producing recorded personal reflective podcasts, this can give students a library of information for future use. If requested then to write an academic reflection, areas from the verbal reflection can be dissected and argued. It is hoped that students will automatically reflect on every area in life unknowingly and this will ensure problem solving and engaged veterinary nurses. If students enjoy producing their own recordings and feel this would help other students or veterinary nurses, then these could be published on a Podcast platform.

Verbalizing in addition to writing allows for different learner types. When considering the different personas, such as Ava and Daniel, it can be seen that providing another platform for their own development is necessary. Especially with third level education becoming more blended in 2020, students and lecturers have been pushed to become poised with online learning and using different technology. Daniel now has the opportunity to use his technological skills and Ava has learned that this is a skill that she can do and achieve well. One way of ensuring if digital technologies are appropriate for all third level students would be to do a digital innovation evaluation (Benson, 2019) which would help us understand the user experience and perceptions. Benson (2019) wanted to integrate the NASSS (non-adoption, abandonment, scale-up, spread and sustainability) framework with his own framework; the R-Outcomes measurement. These measure innovation readiness, digital literacy, adoption process, user experience and behavior change. For any new introduction of technology, whether in education or perhaps healthcare, a survey on the student or workers feelings or ability towards this technology needs to be listened to and acted upon to ensure sustainability and appropriateness to future organizations.

Some areas of difficulty with blended learning and using technology are online access and availability to use devices. In remote areas of Ireland, Internet access is not always guaranteed, especially if working from home with family and sharing online devices (Ava and Daniel). Podcasting and recording also require quiet areas, which may be more difficult in the future of working from home. These are all considerations to take into account if requesting students to record and send podcast links.

The results were interesting regarding group work, with only 9% indicating they liked working in a group. Group work can highlight areas of difficulty for students, such as time constraints, students being non committed and clash in opinions. Yet, it is important for

students to gain skills in high-order problem solving and the ability to work as a team (Johnson *et al.*, 2014); this is especially important for veterinary nurses whom need a tight, well communicative team in their future work in the veterinary clinic.

Due to the Covid 19 pandemic, blended learning is becoming apparent, therefore group work settings are going to be harder to achieve; this is a problem that will need to be overcome if we want to still give these invaluable group skills to students. It can be seen that employers value effective written and oral communication skills, as well as the ability to work effectively within diverse groups ((ABET 2016-2017; Finelli *et al.* 2011). Perhaps, online group work and recording as a podcast is potentially an option – more research needs to be done on the lack of group work skills, which could potentially be lost with blended learning.

Access to materials on virtual learning environments (VLE) such as Blackboard or Moodle will become more and more necessary due to the switch to blended learning, so potentially, these recordings could then be used as a learning source for future students if made accessible. Permission from each student would need to be gained. For students to hear past pupils discussing their own academic knowledge within the module, this can give a sense of encouragement within a non-hierarchical environment of the college.

8. Limitations

The Covid 19 epidemic meant a change in exams therefore revision podcast and measurement of use was not possible. The study was conducted on one class of 32 students, further measurement with different year groups, starting in first year to fourth year would give a greater understanding and range in opinions.

The use of audio files only, such as audacity rather than a podcast platform could have been used, but I feel it gave the students encouragement and confidence to use an application available on own mobile devices to try and explore new environments.

Further questions on the amount of time it took to record the podcast assignment may have been helpful to assess the length of time to advise the student to put by.

9.0 Conclusion and Recommendations

Podcasting is an additional learning tool available to lecturers, especially now that blended teaching and learning is becoming more apparent for future third level educators. There is a growing need for organizations to engage designers to consider the future within an increasingly complex and competitive product and service developmental landscape (Evans, 2010). Students embraced the idea of podcasting or audio files as an alternative way of presenting academic work and as a reflective learning tool for themselves. However, they should not entirely replace live class student presentations due to the necessity of students needing to acquire the skills of presenting for future careers. A combination of assessment via podcast form also ensures all types of learners are provided for and can give rise to confidence through achievement.

Recommendations

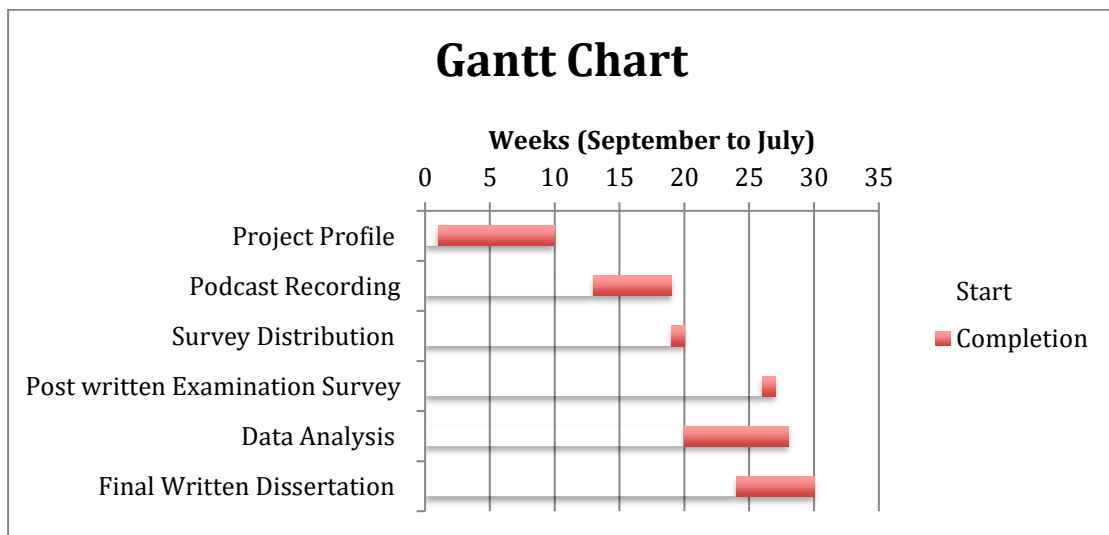
I would highly recommend the integration of podcasts or audio files to be used in third level education. Considerations that must be taken into account should be that;-

- Clear instructions on how to use the chosen application (Podbean, Anchor, Garageband or Audacity are recommended).
- Show the students in class or on a recorded Podcast on how to produce a Podcast but also expect students to be able to problem solve for themselves
- Play other course related Podcasts for discussion in class before students record their own
- Give a guidance to length of Podcast (15 – 20 minutes max)
- Be experimental with noise, music and ways of recording but prepare well in advance of recording
- Consider an additional document to explain underlying thoughts within the podcast
- Try interviewing someone, or have someone interviewing the student for them to listen back – critique themselves
- Read and record written essays to ensure the work reads well
- Record personal reflections before writing an academic reflection for grading
- Group work via recorded podcasts may be an aid with blended online learning where group activities are still appropriate
- Could third level institutions create their own Podcast application or Platform

- Disseminating academic knowledge to a public of peers has become an essential skill for the graduates of the 21st century

10. Gantt Chart

Research and design took place from September 2019. The research study itself was conducted from January to February 2020 and survey results collected and assessed soon after. The final written dissertation was finished July 2020.



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Participant Information Sheet

Study title: An Exploratory Case Study into the role of using student audio recordings/ Podcasts as an aide to develop understanding and enhance student self-learning and revision.

Researcher: Susie Law, School of Science

Supervisor -: Padraic Lynch, Department of Design

'You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this'.

What is the purpose of the study?

This study is intended to provide an insight into the effectiveness of reflective audio Podcasts as a personal revision platform. The Podcasts are solely for students' personal use and not for publishing.

Why have I been chosen?

The study focuses on 3rd year veterinary nursing students in preparation for final year examinations.

Do I have to take part?

Participation in the research is entirely voluntary. Students will be encouraged to participate because the outcomes may help individuals revise and the research may help future students. However, any student who decides not to participate will not be disadvantaged in any way. Your grades and assessments will not be affected whether you decide to participate or not. You may also withdraw from the research at any time.

What will happen to me if I take part?

If you decide to participate you will be asked to give your consent. The consent is necessary to allow the collection of data from survey questionnaires. All consenting participants will participate in completing a short questionnaire at the end of the taught module and the end of the written examination. It should take approximately 10 minutes to complete. The final collection of your Podcasts should be emailed to XXXXXXXX. The Podcasts will not be graded, but are collected to ensure the completion of the task for research purposes. All consenting participants will be required to commit to twenty minutes post lecture once a week to record their own personal podcast.

Will my taking part in this study be kept confidential?

All survey questionnaires will be completed and collected without any means of identifying participants. Questionnaires will be destroyed upon completion of the research. All data including the recorded Podcasts will be stored securely so that data cannot be accessed, altered, disclosed or destroyed by unauthorised persons. The data will be maintained on researcher's computer which has a password protected screen saver. The computer software is updated regularly and it contains Norton Antivirus software which is set for daily automatic updating. In addition to the antivirus software, a firewall also runs on the computer. All documents are password protected. Please note that assurances on confidentiality will be strictly adhered to unless evidence of wrongdoing or potential harm is uncovered. In such cases the College may be obliged to contact relevant statutory bodies/agencies.

What will happen to the results of the research study?

The results of the research study will be used to support the submission of a thesis for taught Masters. The results may also be used in publications of the research in research journals and conferences. Participants will not be identified in any published report.

Who is organising and funding the research? (If relevant)

The research is supported by the School of Science, Letterkenny Institute of Technology.

Who has reviewed the study?

The project has been reviewed by Letterkenny Institute of Technology

Research Ethics Committee.

Contact for Further Information

Primary Contact: Susie Law, School of Science — email: XXXXXXXX

Secondary Contact: Padraic Lynch, Department of Design – email: XXXXXXXX

Appendix B



Consent form

Title of Project: An Exploratory Case Study into the role of using student audio recordings/ Podcasts as an aide to develop understanding and enhance student self-learning.

Name of Researcher: Susie Law: B.Sc. (Hons) in Veterinary Nursing

By signing below you agree that the following statements are true:

- I confirm that I have read and understand the Participant Information sheet and understand what the study involves.
- I understand that my participation is voluntary and that I have the right to withdraw at any time up until data is collected.
- I am aware of how my data will be stored and that all information will remain confidential and for what purpose it will be used
- I understand that the researchers will hold all information and data collected securely and in confidence and that all efforts will be made to ensure that I cannot be identified as a participant in the study.

I confirm that I have read and understand the Plain Language Statement for the above study and have had the opportunity to ask questions.

I give my consent to be involved in the research through producing and participating in self-reflection audio-files/ Podcast (not to be made public), and to be surveyed both after the final podcast and after the written examination.

I give my consent that any research publication reference to my participation in completing any questionnaire will be by means of a pseudonym. I agree to take part in the above study.

Participant's Name: _____

Signature: _____

Date:

I, the researcher, have stated the purpose and procedure involved in this piece of research. I have answered any questions that the participant had in relation to the study and I am satisfied. I believe the participant has understood my explanation and purpose of this study and has given me informed consent. Researcher's signature: _____ Date: _____

For further information contact: Susie Law, School of Science — email: XXXXXXXX

Supervisor – Padraic Lynch – email: XXXXXXXX

Appendix C



Survey questions

Thank you for taking time to fill out this survey. It should take no longer than 5 minutes to complete. All surveys will be kept anonymous and will be stored securely. Please do not enter anything on the survey that may identify you.

1. How many podcasts did you produce?

1 2 3 4 5 6 7 8 9 10 10+

2. Did you add music and sounds into your Podcast?

- All had music as an intro, finish and sounds throughout
- Most had music but not all and a few sounds
- Some just had music on intro and finish
- Just sounds throughout
- No music or sounds

3. Once you knew how to do a Podcast did you find it easy to do and enjoy doing them?

- Yes
- No

If no, then can you identify why not?

4. Do you think it might help you to revise for your exam? And if so, why?

- It will highlight areas that I found difficult and therefore I shall research these areas before the exam
- The information I recorded may trigger memories of that subject
- The sounds I used throughout will help trigger memories for the exam
- I don't think it will make any difference
- I don't know

5. Where would you mainly listen to music or anything audio? Tick as appropriate

- Walking
- Public transport
- In the car
- At home
- Whilst doing fitness training

- In bed
 - Other_____
-

6. Do you listen to any Podcast productions?

Yes

- Have done in the past but not for a while
- Currently listening to one in my free time

No

- Never
- But I will most likely now

7. What type of learner do you feel you are? Please Grade - 1 being most like you

- _____ Reader and writer
- _____ Reader and talk out loud to process what you have learned
- _____ Listener and note taker
- _____ Memorize information (but perhaps not entirely understanding)
- _____ Physically have to do or see to understand
- _____ Reflector
- _____ Creative in your way of learning

8. When it comes to revision, what techniques do you currently do or think would help you the most?

Grade these from 1 to 8 in revision techniques

- _____ One to one tuition with lecturer – ask questions
- _____ Reading over the lecture slides and your own notes
- _____ Research areas within the module yourself when revising
- _____ Watch a video that you have researched and found yourself
- _____ Discuss with colleagues
- _____ Don't have time to understand everything so only revise areas that I do understand and hope to recall these for the exam
- _____ Listen back to your own notes and reflection
- _____ Look over written reflections that were done as assignments

9. If you had both written and recorded reflections, which would you most likely revise with -

- Past written reflections
- Listen to your audio reflections
- Neither

10. Do you feel confident in doing a Podcast in the future and publishing it?

- Yes
- No
- Don't know

Thank you for completing this survey.

Appendix D

Survey Post Written Exam



Survey Questions Post Written Exam

Thank you for taking time to fill out this survey. It should take no longer than 5 minutes to complete. All surveys will be kept anonymous and will be stored securely. Please do not enter anything on the survey that may identify you.

1. How many podcasts did you produce?

1 2 3 4 5 6 7 8 9 10 10+

2. Did you add music and sounds into your Podcast?

- All had music as an intro, finish and sounds throughout
- Most had music but not all and a few sounds
- Some just had music on intro and finish
- Just sounds throughout
- No music or sounds

3. Did you listen to the Podcasts that you produced before the examination?

- Yes
- No
- Very few

4. Do you think they helped with your written examination?

- Yes
- No
- I don't know

5. If yes, why do you think they helped? Tick as appropriate.

- I remembered the sounds that I put into the Podcast
- I became so familiar with the topic from listening to it, that I felt confident in answering the question
- Just by producing the podcast reinforced my understanding of the module
- Other _____

6. Would you produce Podcasts again for future revision?

- Yes

- No
- I don't know

Thank you for completing this survey.