“An investigation into interactive teaching methods and their impact on student engagement in a third level Institute of Technology.”

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Disclaimer

"I hereby declare that this material, which I now submit in partial fulfilment for the requirements of the Masters in Learning and Teaching is entirely my own work and has not been obtained from the work of any other, except any work that has been cited and acknowledged within the text of my work."

Signed: *Máiréad Boyce*

Abstract

It is largely accepted that technology has the potential to improve many different aspects of one's life and there is no doubt that technology is everywhere; it features in every aspect of our lives. For some years in education, there has been a change towards Electronic or E-Learning; it forms part of the teaching and learning vision of most Irish third level institutes and universities (Donnelly and O'Rourke 2007).

This study aimed to investigate whether the use of technology will enhance the students' learning experience, and ultimately allow them to learn more deeply. A mono-method approach was undertaken using quantitative surveys distributed online to lecturers and students in a third level Institute of Technology. The surveys were used to establish perceptions and the prevalence of use of interactive methods of teaching and learning. Two hundred and thirty students and forty eight lecturers responded to the online surveys during the height of the Coronavirus pandemic. Responses were received from lecturers in every department in the institute.

Findings from this research were largely corroborated by extant literature. Most students revealed that they would be more likely to attend lectures where interactive methods of teaching and learning were employed.

Recommendations for future study would include duplication of this research as part of collaborative research with other Institutes of Technology across Ireland. Using focus groups for conversation on what methods are working and why could also prove helpful.

Acknowledgements

Sincerest thanks to my supervisor, Julia Wilson. Your support, time and knowledge was very much appreciated throughout this research project.

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Chapter 1: Introduction

1.1 : Background to Research

This study aimed to investigate whether the use of technology will enhance the students' learning experience, and ultimately allow them to learn more deeply. The researcher completed their B.Sc. (Hons) in Animal Behaviour and Welfare in 2017 and proceeded to undertake the Master of Arts in Learning and Teaching in 2018. A vast difference was noted by the researcher in the methods of content delivery between these two programmes. From the earlier degree programme, the researcher had many folders of printed notes, whereas when they moved into the Master of Arts programme, most notes were posted on the colleges' Virtual Learning Environment (VLE), Blackboard. This led the researcher to begin thinking about the learning environment they experienced, and whether having something physically in front of students, or available on their electronic devices, provides more substance to their learning journey.

It is largely accepted that technology has the potential to improve many different aspects of one's life and there is no doubt that technology is everywhere; it features in every aspect of our lives. For some years in education, there has been a change towards Electronic or E- Learning; it forms part of the teaching and learning vision of most Irish third level institutes and universities (Donnelly and O'Rourke 2007). However, the term E-Learning has only been in existence since 1999. After this time, terms such as virtual and online learning also began to emerge. Additionally, in the early 2000s, businesses began adopting online methods of training workers as it was both time and cost effective. Social and online learning also became popular in the early 2000s with the birth of YouTube and Facebook (Gogos 2013). The use of technology has modified numerous things in the classroom; how materials are distributed by lecturers, how attendance is logged, how notes are captured by students, discussion among student groups, and discussion between the lecturer and students, among other things. However, there are indications to suggest that the potential of interactive multimedia is not being fully realised (Cairncross and Mannion 2001). The researcher believes that regardless of advancements, technology is still being used as a means where necessary, as opposed to a method, in many third level classrooms in Ireland. Huberman in 1993 discovered that those teachers who involved themselves in classroom-level experimentation were more likely to experience career satisfaction going forward. If students want to use technology in the classroom, and research in education is suggesting teachers could have more job satisfaction

because of an engaged cohort (Guglielmi *et al.* 2016), then surely it is something educators should be implementing.

1.2: Research Site

Surveys will be available online for both students and lecturers to complete, and therefore can be completed anywhere at any time. The data will be analysed at the researcher's place of work, XXXXXX. XXXXXX which is based in XXXXXX between the two campuses in XXXXXX and XXXXXX, there are approximately 4,000 full- and part-time students enrolled.

1.3: Research Question/Objectives

In order to form a conclusion, questions must be posed, and answers found. The researcher hopes to answer the following questions;

1. Are students more likely to attend a class where the lecturer has moved away from the traditional PowerPoint to deliver content?
2. Are students more interested in the subject matter as a result?
3. Are students learning more deeply?
4. Most importantly, are students enjoying their learning experience?

The researcher felt that there were two groups of people best placed to answer these questions as they are involved with the delivering of and attendance at educational programmes daily, whether that be at the XXXXXX or XXXXXX campus. One group is the students that undertake either a part- or full-time programme at either campus, and the second group is the lecturers that deliver the programme material.

Chapter 2: Literature Review

This chapter examines and discusses previous research conducted by various organisations and individuals, which relate to the area of technology use within classrooms throughout Ireland and the world.

2.1 : Technology

Eshet (2004, p.93) states digital literacy is beyond simply the ability to operate software or a digital device; it involves a diverse range of *"complex cognitive, motor, sociological, and emotional skills, which users need in order to function effectively in digital environments".* Implementing a tool to the classroom that will enable students to learn more efficiently, in bite size pieces, while using a tool they are familiar with, is key to engagement and success, in the researcher's opinion. Mayer and Moreno in 2002 aimed to discover whether the use of animation was beneficial for learning; this report concluded that the use of multimedia has the potential to form a deeper level of understanding. It is crucial however that gains from a student perspective must be observed and enhancing the quality of teaching and learning is the central focus (Kirkwood and Price 2013).

Current literature identifies that while there are huge advancements being made in the area of Technology Enhanced Learning (TEL), there is a question over the value that this is bringing to the classroom. If there is a lack of knowledge on how best to use the technologies available, there will be nothing gained from someone not using the technology, but it could be counter-productive to use something that an educator does not actually know how to use correctly (Donnelly and O'Rourke 2007). Therefore, university management and staff must be able to maintain the pedagogy, even though the methods of delivery are changing (O'Donnell and Sharp 2012).

Koehler and Mishra in 2009 developed the Technological Pedagogical Content Knowledge (TPACK) model (Figure 1). They built on the model by Lee Shulman (1987), which is based on pedagogy, content and knowledge (PCK). Koehler and Mishra (2009) state that the core components of their Venn diagram – Content, Pedagogy and Technology – hold the same importance as each other and all should be regarded as such when developing lesson plans. Building on that, seeing them as being interrelated and being able to use them concurrently is

the work of expert teachers. TPACK is a practice of knowledge that goes beyond the individual components.

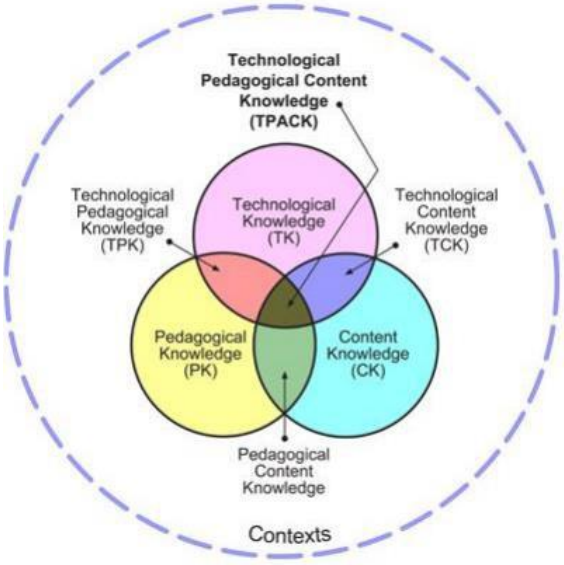

Figure 1: Koehler and Mishra 2009

2.2: Virtual Learning Environment

Dillenbourg *et al.* in 2002 considered if the concept of a virtual learning environment (VLE) is simply a popular label to describe any software used for educational purposes. They went on to note that those educators who became immersed in a VLE changed their teaching style inside the classroom and tended to include more collaborative learning practices. The chosen VLE in XXXXXX is Blackboard. It was created in 1997 in Washington in the United States of America and has been used ever since as a method of transferring knowledge from educators to students. Blackboard has many functions, some of which include but are not limited to; being a repository for lecture notes, allowing communication between lecturers and students and being a centre for formative and summative assessment throughout the academic year (Blackboard Inc. 2009).

2.3: Flipped Classroom

Bishop and Verleger in 2013 cited the flipped classroom as an innovative pedagogical technique, a combination of engaging, problem-based learning using activities both inside and outside of class. Research thus far has focused on the perceptions of students and are based on the single-group study designs (Figure 2) (Bishop and Verleger 2013).

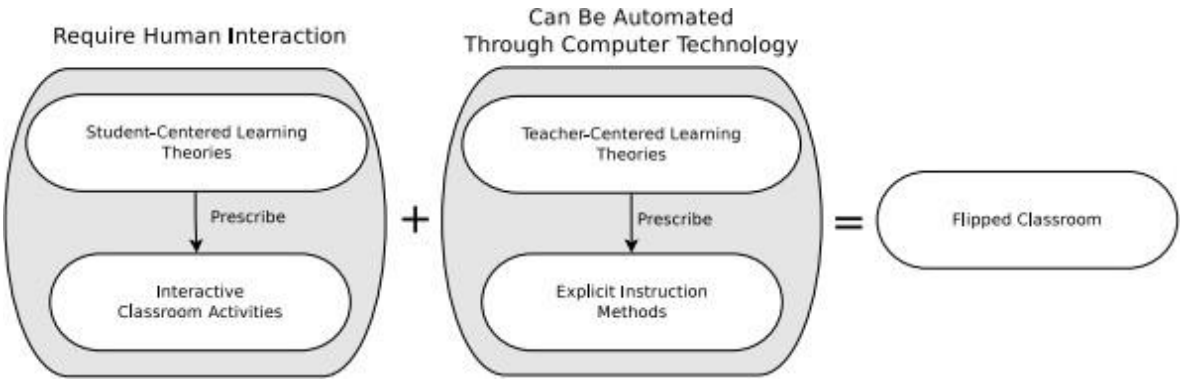

Figure 2: Bishop and Verleger 2012

In recent times, there has been a hike in fees among many universities across America which in turn has led to an increased pressure on educators to enrich the learning experience of students (Hess 2019). The flipped classroom has become increasingly popular in academic circles with an emphasis on promotion of the learning technique in online blogs and news articles. The features of the flipped classroom include online computer-based learning outside of class while class time is designated to group problem-based learning activities for students, essentially 'flipping' the proceedings that used to take place in the classroom to now occur outside of class time and vice versa. Bishop and Verleger in 2013 conducted a literature review in relation to the flipped classroom involving undergraduate students; twenty four studies were identified. Eleven of these studies were excluded based on numerous criteria, one of which being that the in-class activity could not be a lecture. The remaining studies focused on student perceptions except for two whereby student performance was examined. Studies examining student perceptions of the flipped classroom are generally consistent, whereby most students favoured the learning experience with few opposing the conversion. The two studies examining the performance of students found that; students had a twenty one percent increase in performance on exam questions instructed using the flipped classroom, and those taught in a flipped classroom performed significantly higher on all assessments in the semester. Although there are various limitations of such studies, future research could include control groups to depict an accurate representation of the impact of the flipped classroom.

While the flipped classroom approach does not necessarily have to involve technology, with technology as an aid, a flipped classroom can be a precursor to a blended learning environment (Water-Perez and Dong 2012). It can only be termed blended when the learning combines the use of technology with face-to-face teaching (Garrison and Kanuka 2004). It is a method of delivery that requires more involvement from students. This approach has been found to create a more student-centred environment, and therefore, encourages increased engagement, critical thinking and an improvement in student attitude (Moravec *et al.* 2010).

The flipped classroom can vary from the approach of traditional teaching whereby students prepare for their class by engaging with materials prior to the lecture, during the lecture they are involved in active learning such as debates on certain issues, the lecturer takes a back seat during the lecture becoming the "guide on the side" (King 1993), and after the lecture there is a synthesis period whereby students reflect on the materials presented and discussed. In a university study by Gilboy *et al.* in 2015, two undergraduate nutrition/dietetics modules were identified to apply the flipped class; Professional Skills in Dietetics which had 148 students enrolled and Community Nutrition in which 48 students were enrolled. An anonymous survey was completed by the students (72%, n=142) to evaluate their perception of the effectiveness of the flipped classroom experience. Most students felt connected to the lecturer during the delivery of the online content (70%) and preferred the online lecture over a face to face lecture (76%). This study exhibited that the flipped classroom had a positive impact on students of nutrition courses, with potential to expand into further universities and institutions. With that said, the evaluation of the flipped classroom approach in this study was lacking as it only reflected on the students' fulfilment. There was no evaluation of how, or if, the approach influenced student grades.

2.4: Quizzes

Quizzes can be put together by an educator on the VLE. However, an educator may want to use something outside the VLE and applications such as Mentimeter or Quizizz could satisfy this requirement. These software applications, for delivering presentations and online assessments, are both free of charge to use for a certain amount of questions and can be edited numerous times. Mentimeter, developed by Swedish entrepreneur Johnny Warström in 2014 in response to fruitless meetings, is described as interactive presentation software. It currently has over 20 million users and was ranked as Stockholm's fastest growing company in 2018 (Dagens Industri Gasell Award 2018). Quizizz entered the market the following year, in 2015,

and allows an educator to develop formative assessments that students can complete at their own pace.

Narloch *et al.* in 2006 found that students who received either matching or fill-in-the-blank pre-lecture quizzes, likened to those who received no quiz, achieved better results on both multiple-choice questionnaires (MCQs) and essay exam questions. They also rated the lectures as a better preparation for exams and as being clearer and more structured. Additionally, it was found that the quizzed students asked more high-level questions.

Within the classroom, applications like Mentimeter or Quizizz can be used as audience response systems (ARSs). Students join like they would at home, and it can be set up so that the responses remain anonymous or whereby they compete against their peers. Many students can answer MCQs at one time; their responses are instantly amassed and displayed to the audience. Prevalent use of ARSs began in the early 2000s (Kay and LeSage 2009) and they are being used increasingly at conferences and workshops in order to gauge, for example, the level of knowledge of the audience on a topic. Studies have cited significant quantitative and qualitative evidence suggesting that students are positive about the use of ARSs in higher education (Caldwell 2007; Durbin and Durbin 2006; Fies and Marshall 2006; Hu *et al.* 2006; Simpson and Oliver 2007). In their literature review, Kay and LeSage in 2009 state the following benefits of using ARSs: improvements in attendance; more attentive students, more participation due to anonymity; increased student engagement; improved interaction; better discussion; teaching can be based upon feedback received from the class; increased learning performance; better quality of learning; and real-time feedback in relation to formative assessment and both teachers and students can compare their progress with other students – anonymously or not.

Kay and LeSage further state the challenges associated with using ARSs. These include such things as: technological challenges – device compatibility and Wireless Fidelity (Wi-Fi) issues; the ability of an educator to respond to the feedback from students; some educators and students believe that less content may be covered than with traditional forms of teaching; forming original questions can be time consuming for teachers; resistance from students to new ways of learning and some students do not like the idea of being monitored (2009).

2.5: PowerPoint versus Prezi

In their 2015 study, Chou *et al.* examined two digital presentation technologies, PowerPoint and Prezi and their impact on the education of students in a public elementary school.

PowerPoint, released in 1987 by Microsoft, is a widely used digital application for presenting information to students in a linear manner (Microsoft 365 2020). The ability to utilise multimedia elements throughout PowerPoint encourages students to remain engaged and attentive, yet some have argued that condensed information on slides limits the learning ability of students (Chou *et al.* 2015). Prezi is an application that enables the use of online presentations alongside multimedia elements, its chief feature is the non-linear style of presentation and infinite canvas. Prezi is a relatively new application (2009) therefore research is somewhat lacking, however to date, the learning experience of students using Prezi has generated positive results (Chou *et al.* 2015). The Chou *et al.* study had three experimental groups; one class of students received course content using PowerPoint and the other class was instructed using Prezi. A traditional learning style (use of Blackboard, static images) was used in the control group. To examine the impact of such digital tools, a formative evaluation was completed by students in each group (n=78) at the end of a lesson unit in the form of a quiz. At the end of the intervention, the students were administered an exam (formative evaluation). Two weeks following the summative evaluation, the exam was completed once more to examine the impact of such learning styles on long-term learning (delayed summative evaluation). Students who were instructed using PowerPoint performed significantly better in the delayed summative evaluation than those who received traditional instruction, displaying a positive effect on long-term learning. Instruction using Prezi resulted in a significantly better performance in formative, summative and delayed summative evaluation. With that said, there were no noteworthy differences in performance between PowerPoint and Prezi instructed groups. This may be explained by the presence of multimedia in both instructions while the sequence of information did not have an effect. Confines of this study include the small number of participants, the restriction of education to geographical knowledge, and the fact that the slides were developed by teachers, perhaps if the students were involved in the development of such slides there may have been significant differences between the two digital presentation technologies (Chou *et al.* 2015).

2.6: Reusable Learning Object

Reusable learning objects (RLOs) are digital learning activities that are created in advance of a lesson or module (Billings 2010). RLOs offer students flexibility of study through *"anytime, anywhere"* availability (Boyle and Cook 2003, p.31) and are intended to be reusable in different contexts (Wiley 2000). In addition, they arise through educator and student-centred processes, which ensures they associate with real-world learning needs (Windle *et al.* 2007).

RLOs can be utilised across many disciplines and levels, and each of the following Prezi, ARSs and Quizzes, can be used as such, providing time and cost-saving benefits to teaching staff and third level teaching institutions.

2.7: Conclusion

The impact of the use of technology and making the classroom a more interactive experience is well documented. The literature outlined in this chapter is very conclusive and positive in relation to technology enhanced (TEL), or interactive, learning. This study will go on to reveal whether the experiences and opinions of students and lecturers in XXXXXX corroborate with that of the literature already discussed, or not.

Chapter 3: Research Methodology

3.1: Introduction

The Research Methodology chapter outlines in detail the methods of research adopted for this dissertation. A researcher must select a methodology that they believe will answer their research question(s). A methodology is an arrangement of comprehensive principles or rules from which more precise methods or procedures may be obtained to decipher different problems within a discipline. A methodology contrasts to that of an algorithm in that it is a set of practices, as opposed to a formula (Business Dictionary 2019). The methodology selected to answer the research questions in this study is outlined below.

3.2: Introduction to Ethics

Ethics can be explained as the set of perceptions or principles that guide people in making decisions, based on whether a particular decision or action will help or harm those participating (Paul and Elder 2003). Research on human subjects must meet certain ethical standards and all new research proposals involving human subjects should be subjected to an ethical analysis. The requirement for such review, and its rigour, is largely governed by the potential risks to participants. The use of ethics when conducting research is to ensure the safety and protection of the researcher, the participants and their right to confidentiality and respect and it sets boundaries preventing unethical use of information (Wiles 2012). For this study, the researcher will offer anonymity by excluding any personally distinguishable details of participant's description (King and Horrocks 2010). DeFranzo in 2012 found that anonymity of surveys allows participants to respond with more honest and valid opinions and that this will aid in the most accurate data being collected. This was taken into consideration when designing the survey. The researcher also feels that it is important to address a potential power balance when asking students whom they may teach to complete tasks – it will be made very clear that students are under no obligation to participate in the data collection process, should they not wish to and there will be no negative consequences if they choose not to participate. This will be clearly stated in the participant information sheet, which all participants will agree to by ticking a box on the survey link, ensuring they give voluntary informed consent to participate in the survey.

It is likely that there will be participants with undiagnosed or diagnosed learning difficulties, issues with mental health or other disabilities in the targeted groups for this research. From an

ethical perspective, this should not affect their ability to participate as all potential research subjects have the choice whether to participate or not. The research does not relate to disabilities in any way and all participants must be over 18 years of age, this is clearly stated within the participant information at the beginning of the survey. The researcher completed a detailed LYIT Ethics Approval Application Form and this was approved by the School of Business Ethics Committee before any data collection commenced for the study.

3.3: Data Storage and General Data Protection Regulations

The General Data Protection Regulations (GDPR) came into effect across the European Union on the 25th of May 2018. These regulations allow for more protection for individuals with regards to their personal data and inflicts more stringent obligations on organisations who handle data (Citizens Information 2018). For the purpose of this study, data was collected, analysed and stored, and for these reasons, the researcher must be compliant with the regulations. The ways in which the researcher was compliant are detailed below.

The data collected was and will only be used within XXXXXX for academic purposes and will not be transferred to third parties. Participating in the survey was possible without participants indicating their name and without registration. All information is thus anonymous and highly confidential. It must be noted that protection of this data is subject to legal constraints. Data has the potential to be *"subject to subpoena, freedom of information claim or mandated reporting by some professions"* (O'Connor 2017, p.9).

The data was collected on the Google Forms server and will be stored until the end of the research period, which is July 31st 2020 at the latest. The data collected has been saved on the servers of XXXXXX's software provider also. The data is encrypted and secured in compliance with relevant data protection legislation and in compliance with LYIT's Guidelines for StoringElectronic Research Data Policy 2018.

All data has been accumulated, handled, and kept in compliance with relevant data protection legislation and in compliance with LYIT's Guidelines for Storing Electronic Research Data 2018. All data is saved securely on the researcher's work computer; this data is encrypted, and the PC requires a password to gain entry. Data will be retained for a maximum of five years in line with LYIT's Data Retention Policy 2018, thereafter, it will be destroyed in accordance with the policy.

3.4: Informed Consent

Informed consent is consent that is founded on an understanding of the possible consequences; in other words, participants should have a clear idea of what they are agreeing to (Selinger 2009). Permission was acquired from all participants who provided data for the research study. Participants were asked to read a description of the study which was provided in the Participant Information Sheets (Appendices 8.2 and 8.3). This description included details in relation to their role in the research, as well as details of any potential risks and benefits of participation in the research.

As the survey for this proposed research is online, all participants ticked a box on the survey link before they could proceed and answer the survey questions. It was communicated to participants that they were free to withdraw from the study at any time, up until they submit the last answer on the survey, regardless of the reason, without any negative consequences for them. Withdrawal after the point of the submission of the survey was not possible as all responses were anonymous.

3.5: Comparison of other Higher Education Institute's Ethical Guidance

In relation to the ethical assistance at Letterkenny Institute of Technology, ethics training and support to the researcher was received from the MALT co-ordinator and from the LYIT Quality Assurance Handbook Version 3.1 (2019). The researcher also used this as an opportunity to examine the ethical guidance provided by both Trinity College Dublin and University College Dublin (UCD). Both universities have a substantial amount of information in relation to research ethics publicly available.

3.6: Theoretical Approach

A principal issue for researchers is not associated with choice of methodologies but with acknowledgement of the research paradigms. A methodology is only one of the four elements of a paradigm that researchers work within, the other elements are axiology, ontology and epistemology (Guba and Lincoln 1994). Essentially, ontology is reality, epistemology is the relationship between that reality and the researcher, axiology refers to the researchers' values and ethics and methodology is the techniques use by the researcher to discover that reality.

Therefore, a paradigm is an overall conceptual framework within which a researcher works. In research, the term paradigm is used to depict a researcher's worldview (Mackenzie and Knipe 2006). The worldview is the perspective, or school of thought that informs the meaning or interpretation of research data. A paradigm *"hence implies a pattern, structure and framework of scientific and academic ideas, values and assumptions that a researcher will use"* (Olsen *et al.* 1992, p.292).

As a researcher, one should place themselves within the structure of Saunders Research Onion (Figure 3) (2012). This allows the researcher to deliberate each layer of the research in relation to its context in the broader research design (Saunders and Lewis 2012). The proposed methodology is mono method and quantitative by means of a survey, and falls within the deductive, positivist paradigm.

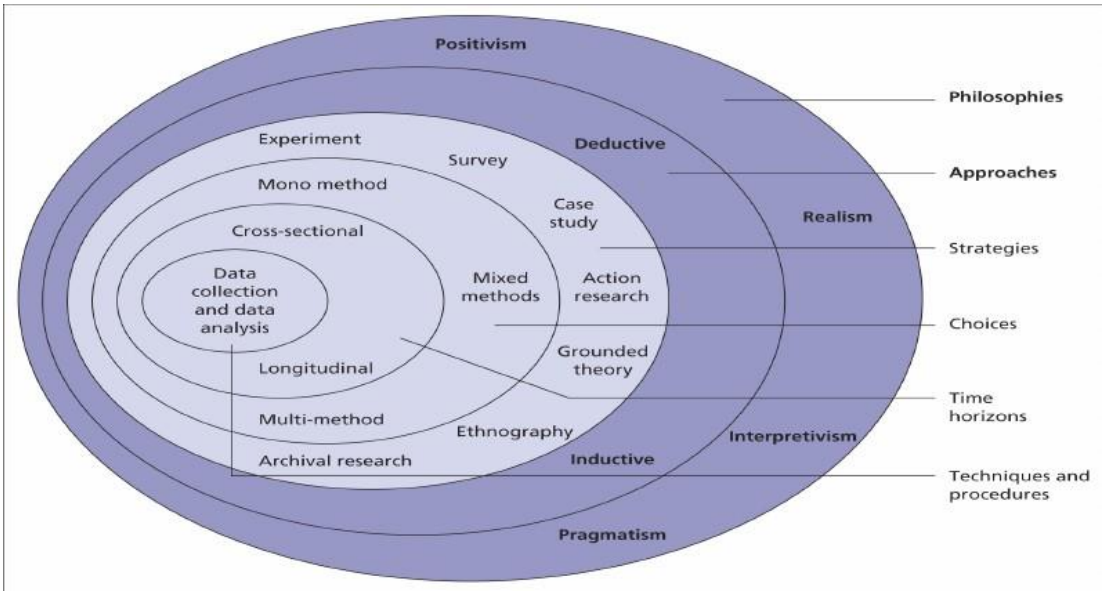

Figure 3: Saunders *et al*. 2012

3.6.1 : Research Philosophy

Positivism is as an expansive term that describes the belief that there is one truth independent of the investigator and this is discovered via following strict procedures (DePoy and Gitlin 2015). Carson *et al.* 2001 state that quantitative research or logical positivism focuses on quantifying quantities and relationships between elements, following a set of scientifically set processes. It collects highly structured data and is deductive in approach and expresses the theory of a positivist paradigm which maintains that behaviour can be rationalised through objective facts. Carson *et al.* in 2001 also contend that positivists consider the world to be

extrinsic, so researchers aim to remain neutral and detached from their research to avoid influencing their findings. The methodology used is highly organised to facilitate replication and emphasis is on quantifiable observations to allow statistical analysis. Cohen in 2011 implies that insights provided by positivist researchers have high validity and reliability.

3.6.2 : Research Approach

Prior to undertaking research, it must be decided as to whether the approach will be inductive or deductive. The deductive approach develops a hypothesis based upon an already established theory and then formulates the research approach to analyse it (Silverman 2013). It is believed to be particularly suited to the positivist approach, which allows for the formulation of hypotheses and the statistical testing of expected results to an accepted level of probability (Snieder and Larner 2009). Bryman in 2012 states that the inductive approach allows researchers to create a theory rather than adopt a pre-existing one. The inductive approach is characterised as a move from the specific to the general. In this approach, there is no framework that initially informs the data collection and the research focus can then be formed after that data has been collected (Bryman 2012)

For the purpose of this study, the researcher firstly developed a theory regarding the use of technology within the classroom and the engagement levels of students. They then devised two quantitative surveys to gather data to see if it would fit with their theory or not. For that reason, the research approach in this study is deemed to be deductive (Figure 4) (Zalaghi and Khazaei 2016).

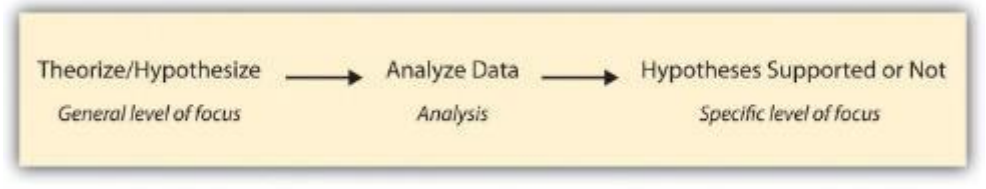

Figure 4: Zalaghi and Khazaei 2016

3.7 : Methodology

The researcher used mono-method data collection using a quantitative survey. The use of a survey allows quantitative data to be collected through closed-ended questions but will allow additional responses by use of an “Other” option for participants also. An “Other” option can gather information that the researcher may not have not originally considered when preparing

survey questions and to gather additional information from participants relevant to answering the research questions.

The quantitative approach arises from the proposal that human phenomena and variables in human behaviour can be studied objectively (Parahoo 2006) and so, this method has been chosen as an appropriate way to answer the research question. Furthermore, quantitative research was chosen to emphasise the objective of the research through statistical, mathematical or numerical analysis (Babbie 2010). Brians *et al.* in 2016 highlights the following as some characteristics of quantitative research: the data is collected using structured research instruments; the results are based on larger sample sizes that are representative of the population; the research study can usually be reproduced, giving it high reliability; there are clearly defined research questions to which objective answers are sought; all aspects of the study are carefully considered before data is collected; results are in the form of numbers and statistics, and arranged in tables, charts, figures; and the researcher uses tools, such as questionnaires or computer software to collect numerical data.

3.8: Data Analysis

All data will be displayed using descriptive statistics, following analysis in Microsoft Excel. The researcher has decided that the use of inferential statistics and data analyst packages such as Statistical Package for the Social Sciences (SPSS) will not be necessary.

3.9: Advantages of using Quantitative Data Analysis

There are many benefits to using a quantitative method of data analysis. Collecting data through a survey for example, allows for an extensive study, involving more participants, and enhances the generalisation of the results (Carr 1994). This is when compared with a qualitative method of data collection like interviews, whereby a greater amount and type of information may be gathered from the participant, but often due to time and financial constraints, it is not be possible to interview as many people, thereby findings cannot be generalised (Anderson 2010).

Quantitative data analysis is likely to allow for greater objectivity and accuracy of results (Creswell 2005). The researcher felt that this was appropriate given that the information gathered could potentially change the delivery of an academic programme in future. The researcher's aim was to gather many views in a short space of time and felt that a quantitative survey would allow this. Generally, quantitative methods are designed to provide synopses of data that support generalisations about the phenomenon under study. In order for this to occur,

quantitative research usually involves few variables and many cases, and employs prescribed procedures to ensure validity and reliability. Using a set of specific standards means that the research can be repeated, and then analysed and contrasted with similar studies (Nardi 2018). Kruger in 2003 confirms that quantitative methods allow a researcher to condense substantial sources of information and facilitate comparisons across categories and over time. A further advantage is that personal bias can be avoided by researchers using a greater number of participants than would be known to them and not requiring participants to use personal details like their name. Finally, analysing the data itself is less time-consuming as a researcher generally employs statistical software such as SPSS (Connolly 2007).

3.10 : Disadvantages of using Quantitative Data Analysis

There is no doubt that a quantitative data analysis method, such as a survey, has the potential to collect a narrow and occasionally superficial dataset (Rahman 2017), when compared with qualitative methods such as an interview. Results can be limited as they provide numerical descriptions, rather than a detailed narrative and generally provide less elaborate accounts of human perception.

Moreover, pre-set answers may not necessarily reflect how people really feel about a subject and in some cases; they will pick the closest match. To aid in alleviating this concern, the researcher included “Other” as an option in some of the survey questions. In certain instances, the development of standard questions by researchers can lead to 'structural' bias and false representation, where the data reflects the outlook of the researcher instead of the participant (O’Neill 2006). In order to counteract potential issues with the aforementioned, the researcher ensured that questions within the survey were carefully worded. It was important that the researcher used clear language in short questions that would not be ambiguous and double negatives were avoided (Saunders *et al.* 2012). The researcher also studied surveys on a similar subject matter and consulted with her supervisor to guarantee their understanding and clarity. In addition, both sets of survey questions were assessed by the School of Business Ethics Committee in LYIT to ensure the wording was appropriate.

Another way in which the researcher relieved potential issues was by piloting the survey. It was anticipated that any issues would be picked up at that time and the researcher could correct any issues before the survey went live. The researcher carried out a pilot with four colleagues and eleven students in the final year of their degree. Piloting proved to be very insightful for the researcher as those who completed the pilot reported back on any ambiguities in question

or answer wording so that these could be corrected. The pilot also allowed for the researcher to determine how long survey completion would take on average.

3.11 : Data Collection

The collection of quantitative data must be objective, methodical and repeatable (Gerrish and Lacey 2010). Robson in 2014 insists that a researcher should use the most straightforward manner of accumulating the data to get answers to the research question and should not gather any more data than necessary for ethical reasons. Bearing in mind these requirements, the data collection instrument chosen for this study was a survey with three to four options for answers that should take no more than six minutes to complete. The survey was created and available for completion online on Google Forms.

Many factors will influence a participant's decision to respond to the survey; having the means to respond, keeping the survey short, as well as an interest in the survey topic, are all reasons likely to positively impact on response rates (Saleh and Bista 2017). Research also suggests using reminders could help improve response rates (McColl *et al.* 2001). The researcher had initially planned to send out email reminders to both lecturers and students if the surveys had been administered online in late February/March as originally intended. In order to do this, consent from the various Heads of Department within XXXXXX was required. There was a significant delay in obtaining this consent and the survey release was delayed as a result. Further to this, all schools and colleges in Ireland closed on March 12th, 2020 due to the Coronavirus pandemic. Therefore, the delay caused by both of these events resulted in surveys only being available for a short two-week window mid-late May so reminders were not sent. The impact of the pandemic on this research will be discussed in later sections.

3.12 : Participant Selection

The researcher asked all full or part-time students who were over the age of 18 to answer the student surveys. This occurred after the researcher asked and received permission of the Heads of each of the Departments within XXXXXX to gain access to their students (Appendix 8.9). Only after each Head of Department gave consent, was the survey circulated via an online link to students. Students could then access the survey at any time and in any place. One Head of Department did not reply to emails asking for consent to survey their students, and therefore the students in their department were not contacted. Whether students chose to complete the survey or not, was entirely their decision as participation is voluntary. The researcher then asked all lecturers in XXXXXXX and XXXXXX campuses to complete the lecturer

survey. This survey was also circulated via an online link and lecturers chose whether to complete it, or not. All survey participants were supplied with an Information Sheet (Appendices 8.2 and 8.3) and gave voluntary informed consent by ticking a box before being allowed to complete the surveyonline.

3.13 : Validity and Reliability

Validity is about getting the right question and reliability is about getting the question right (Reece *et al.* 2006). Content validity is critical to any survey, and it refers to the extent to which the items within that survey are representative of the entire realm the survey seeks to measure (Salkind 2013). Reliability denotes the consistency of scores over time, test administrations, and sampling (Buckendahl and Plake 2006). In other words, reliability relates to whether the results are reproducible. Sometimes reliability is described as the repeatability or the test-retest reliability.

Methods employed to ensure validity and reliability included the use of carefully worded survey questions, survey questions that were short, clear and unambiguous based on review of similar studies, supervisor help with wording of these questions, piloting of the surveys, approval of the survey questions by the School of Business Ethics Committee and by the provision of a detailed, clear information sheet for participants (Saunders *et al.* 2012).

3.14 : Conclusion

Choosing the correct methodology is crucial to a study. The various research methods employed have been outlined in this chapter. It provided an in-depth description of the population involved in data gathering for this dissertation and the sampling methods employed.

Chapter 4: Research Findings

4.1 : Student Survey Results

Two surveys were distributed by the researcher to answer the research question(s). The following are the results of the student survey. There were 230 responses in total, which equates to a response rate of 5%. This response rate is undoubtedly low. A possible reason for the lower response rate is due to the shutdown of XXXXXX with all schools and colleges nationwide due to the Coronavirus pandemic, which occurred on March 12th, 2020. Surveys were delayed due to the pandemic and delays in receiving consent from heads of departments, as discussed previously, and not disseminated until May for a period of two weeks. During this period, students were preparing for exams and/or completing assessments to finish the college year. Subsequently, the researcher feels the student focus was quite correctly elsewhere and completion of surveys was not a priority for them at that time. Other possible reasons for such a response rate may be because online survey response rates have been decreasing over the last twenty years (Adams and Umbach 2012; Nair and Adams 2009). Many reasons have been cited to explain this, including technical issues, surveys being put into junk folders by host providers, or it may be due to survey fatigue because students in higher education are one of the most surveyed groups in society (Sax *et al.* 2003).

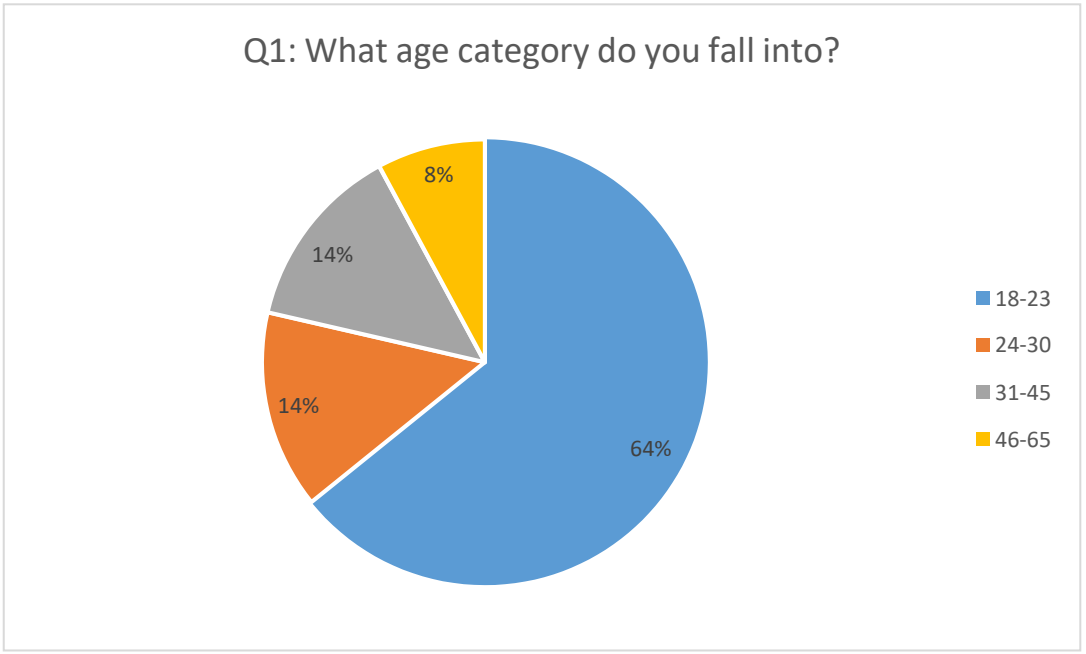

Figure 4.1.1: Age profile of students

The majority (64%, n=147) of students who answered the survey fall within the 18-23 age group. This is reflective of the age profile of students who attend XXXXXX and is generally reflective of the profile of most third level students in Ireland (HEA 2019). There was a further option on the survey in relation to age category, 66+, but no student selected this option.

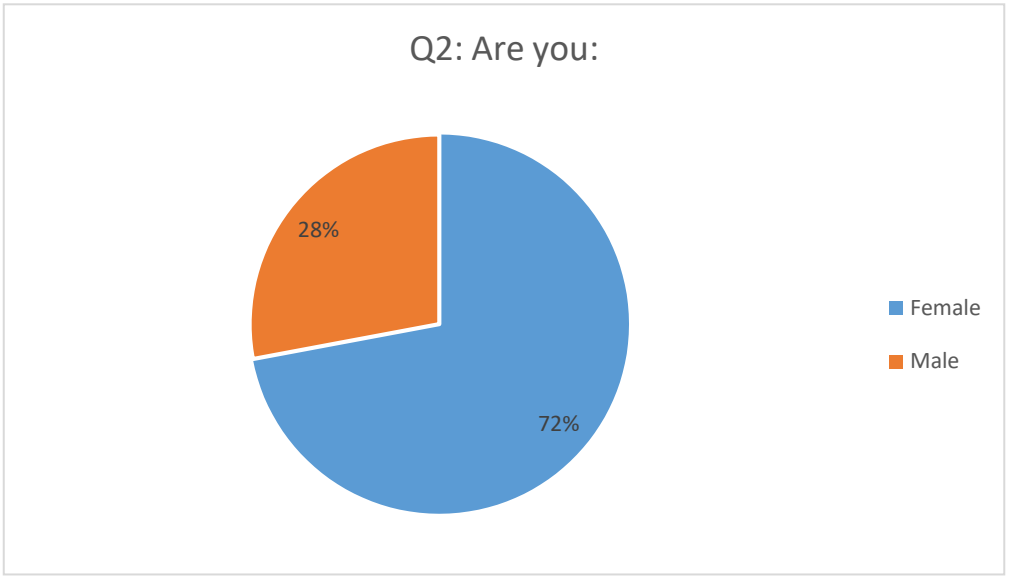

Figure 4.1.2: Gender profile of students

It was found that nearly three quarters (72%, n=165) of students who answered the student survey were female, while 28% (n=64) were male. There was another option for those students preferring not to reveal their gender, but no student selected this option.

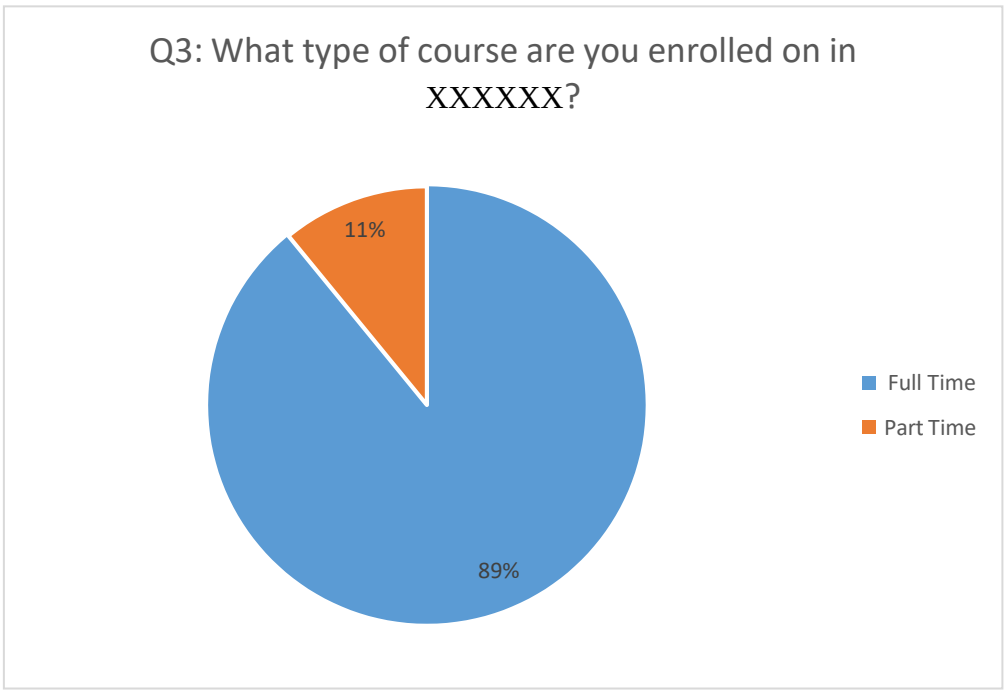

Figure 4.1.3: Course breakdown of students

The survey found that 89% (n=204) of all participants who completed the survey are attending a full-time course at one of the campuses and 11% (n=26) of students were attending a part-time course. There are 3212 students enrolled on full-time programmers between the two campuses, and 1048 enrolled on part-time programmes (Examinations Office 2020).

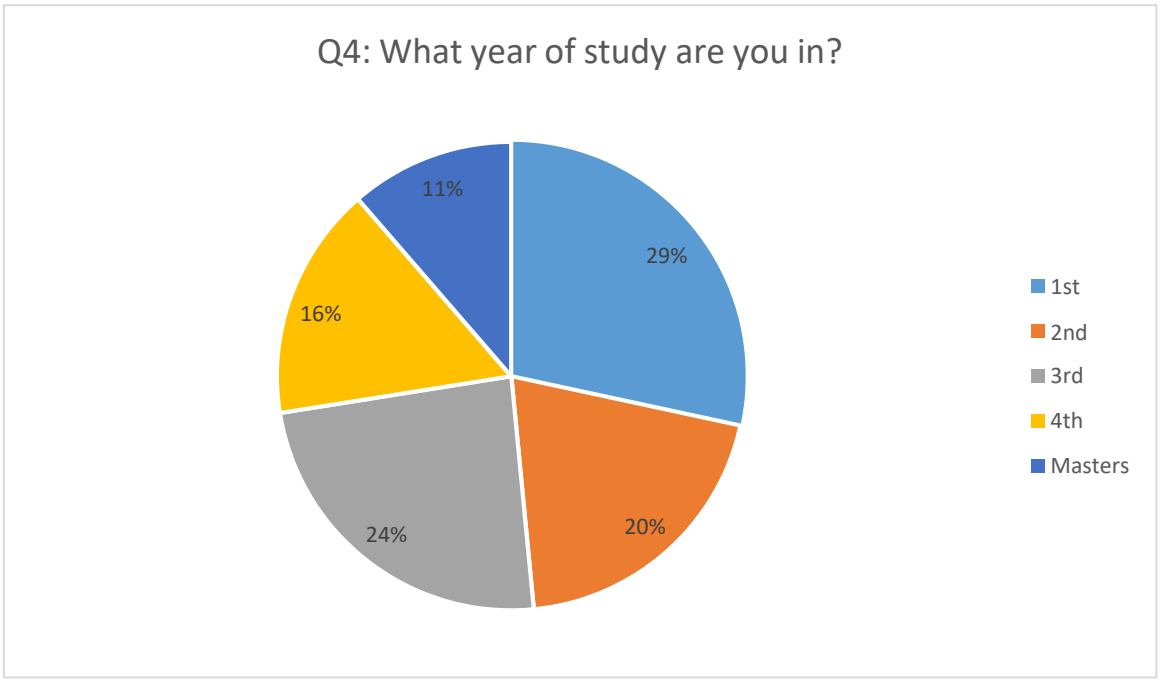

Figure 4.1.4: Year of study of students

It was found that first and third year students (53%, n=120) made up most of the participants in this survey, while 20% of students (n=46) were in their second year of study, 16% (n=37) were in their fourth year of study and 11% (n=26) were undertaking a Masters. There was a sixth option to this question for those students completing a PhD but no participant selected this option.

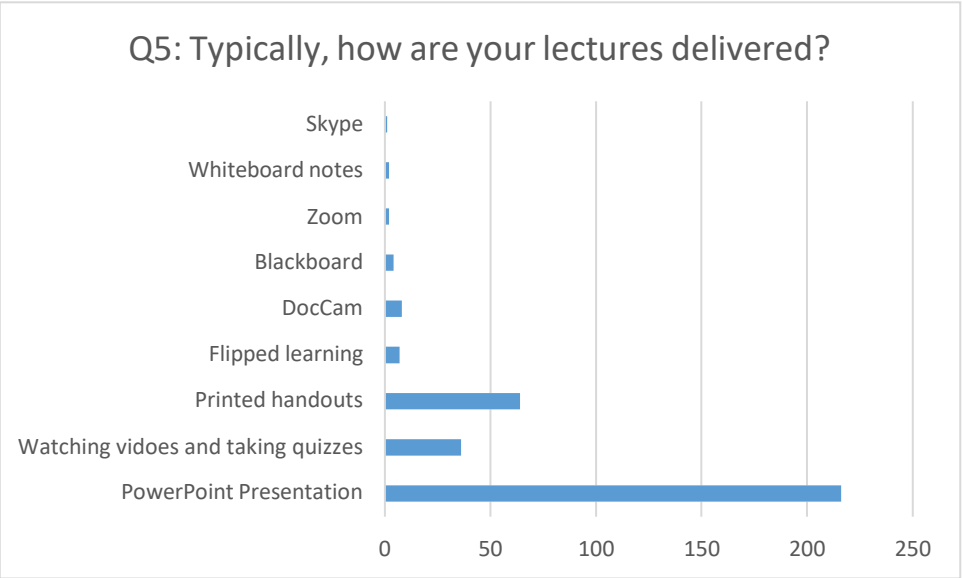

Figure 4.1.5: Methods of lecture delivery

This question allowed students to pick multiple options. Almost all students, 94% (n=216) said that their lectures are delivered via PowerPoint Presentation. The next most popular method of delivery was printed handouts (28%, n=64), followed by watching videos and taking quizzes (16%, n=36). Other methods of delivery cited were DocCam (8), flipped learning (7), whiteboard notes (2), Blackboard (4), Zoom (2) and Skype (1).

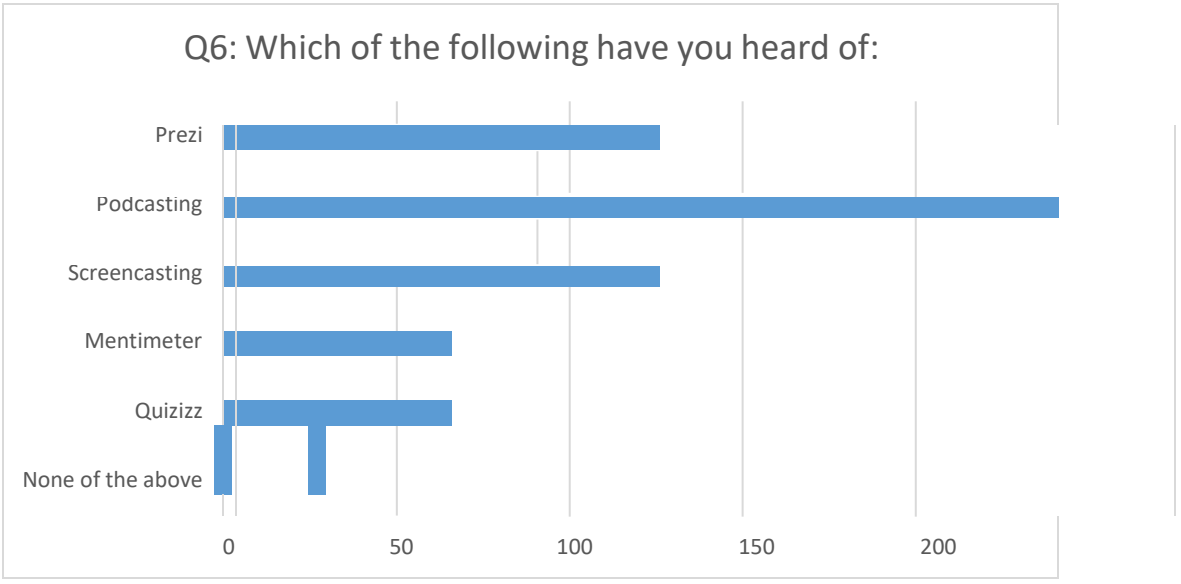

Figure 4.1.6: Student awareness of technology

The survey revealed that 180 students (35%) had heard of Podcasting, followed by 66 (29%) who had heard of Prezi, 64 (28%) had heard of Screencasting, 27 (12%) had heard of Quizziz

and 25 (11%) had heard of Mentimeter. Five students (2%) reported that they had not heard of any of the options listed.

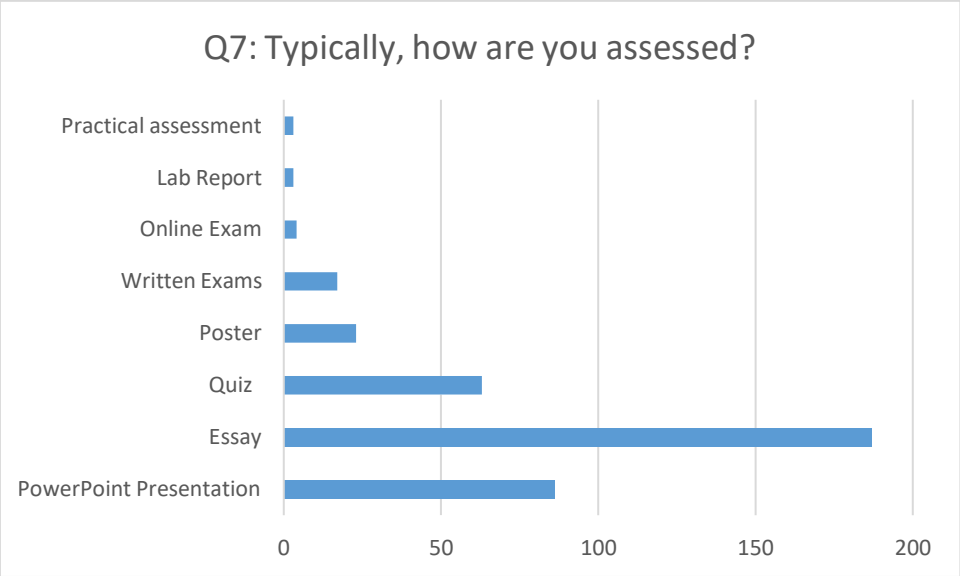

Figure 4.1.7: Methods of assessment

Most students (n=187, 81%) reported that they are assessed by means of an essay. This was followed by PowerPoint Presentation (n=86, 37%), quiz (n=63, 27%), poster (n=23, 10%), written exams (n=17, 7%), online exams (n=4, 2%), lab reports (n=3, 1%) and practical assessments (n=3, 1%).

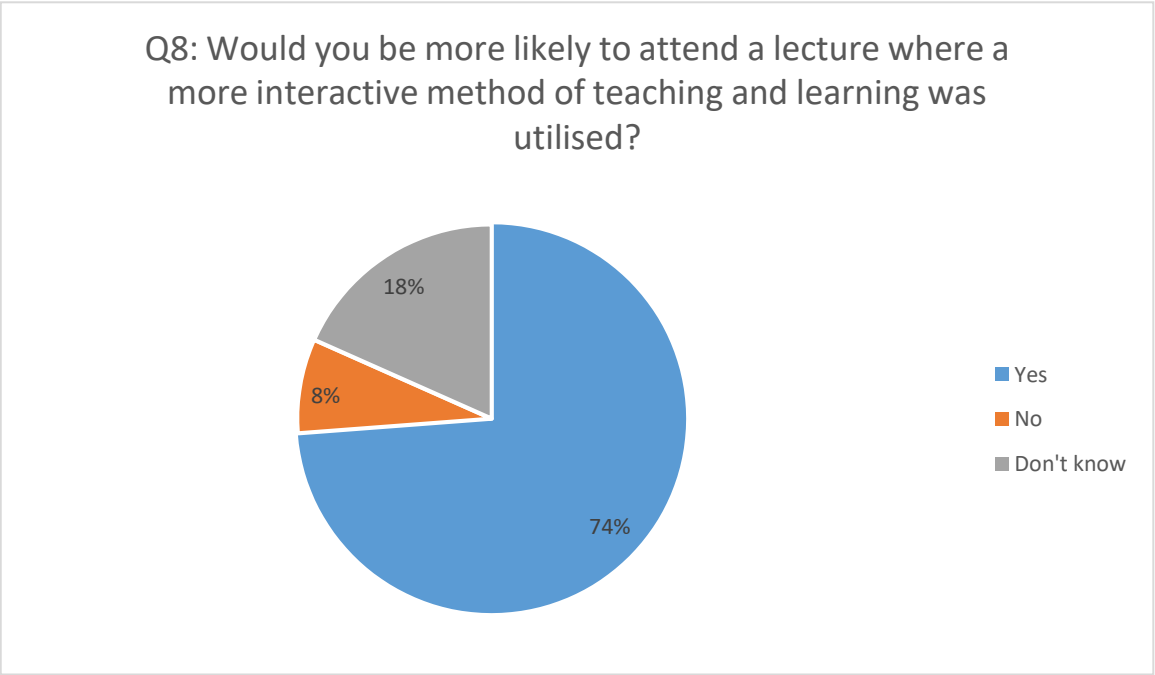

Figure 4.1.8: Student opinion on attendance

It was found that 74% (n=170) of students were more likely to attend a lecture where a more interactive method of teaching and learning was employed. 8% (n=18) of students reported that they would not be more likely to attend, while 18% (n=42) of students reported that they did not know.

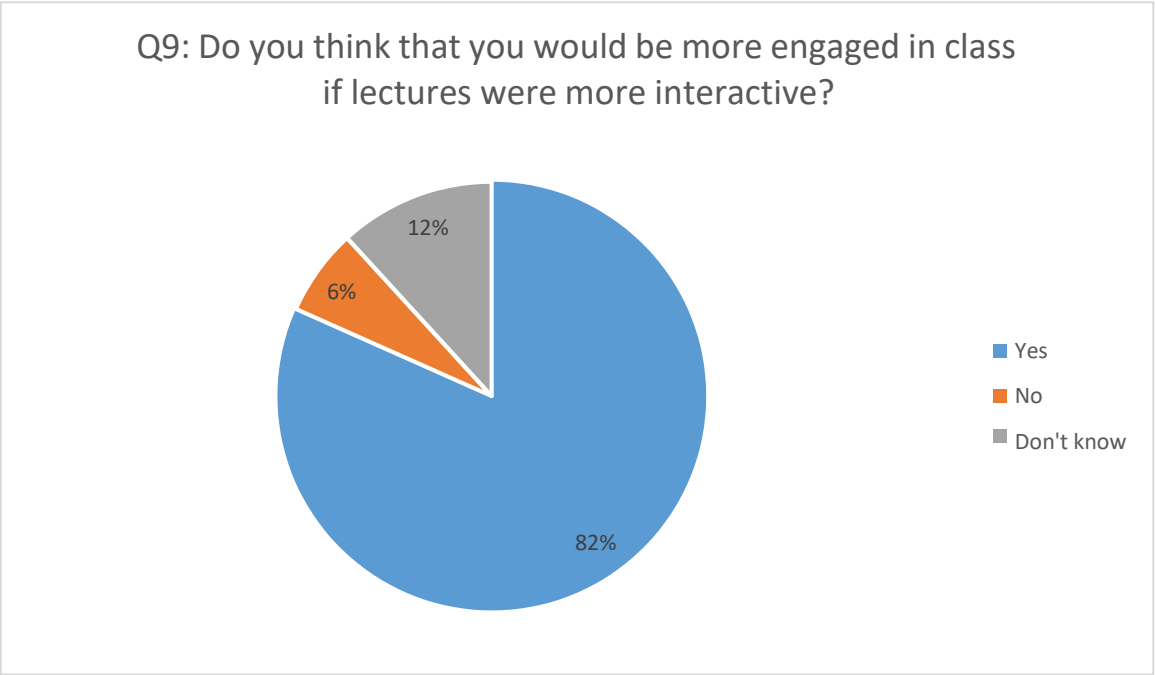

Figure 4.1.9: Student opinion on level of engagement

It was found that the majority of students 82% (n=189) think they would be more engaged in class if lectures were more interactive, while 6% (n=15) do not think they would be more engaged and 12% (n=27) did not know.

Finally, students were given the option of describing what their understanding of interactive teaching and learning is. All student responses can be found in Appendix 8.7.3, some of the responses were as follows;

"Use of online services and computers"

"Hands on learning, using what you're being taught in real life application"

"Using tech"

"Where students and teachers are both involved in learning"

"Full interaction and attention from lecturers with each individual whether it be in the classroom or as simple as answering an email from a student."

"Lecturers getting the class involved in the lecture"

"Two way"

“Online learning using applications such as MS Teams”

“Learning by doing as well as reading”

“I would consider a practical class interactive teaching and learning rather than a lecture”

“When the lecturer thoroughly engages with the students, placing their best efforts on explaining the topic at hand with use of quizzes, objects etc. rather than simply reading from a Power point.”

“Learning that involves the student rather than just information being thrown at them.”

4.2: Lecturer Survey Results

The following are the results of the lecturer survey. There were 48 responses in total – the survey link was sent via email to approximately 248 lecturers in mid-May. This represents a low response rate of 19%. Again, because of the delay in circulating the surveys caused by the pandemic, this low response could possibly be explained by the fact that lecturers were likely more pre-occupied with arrangement and delivery of alternate assessments and online exams rather than in completion of the survey during the two weeks that it was available.

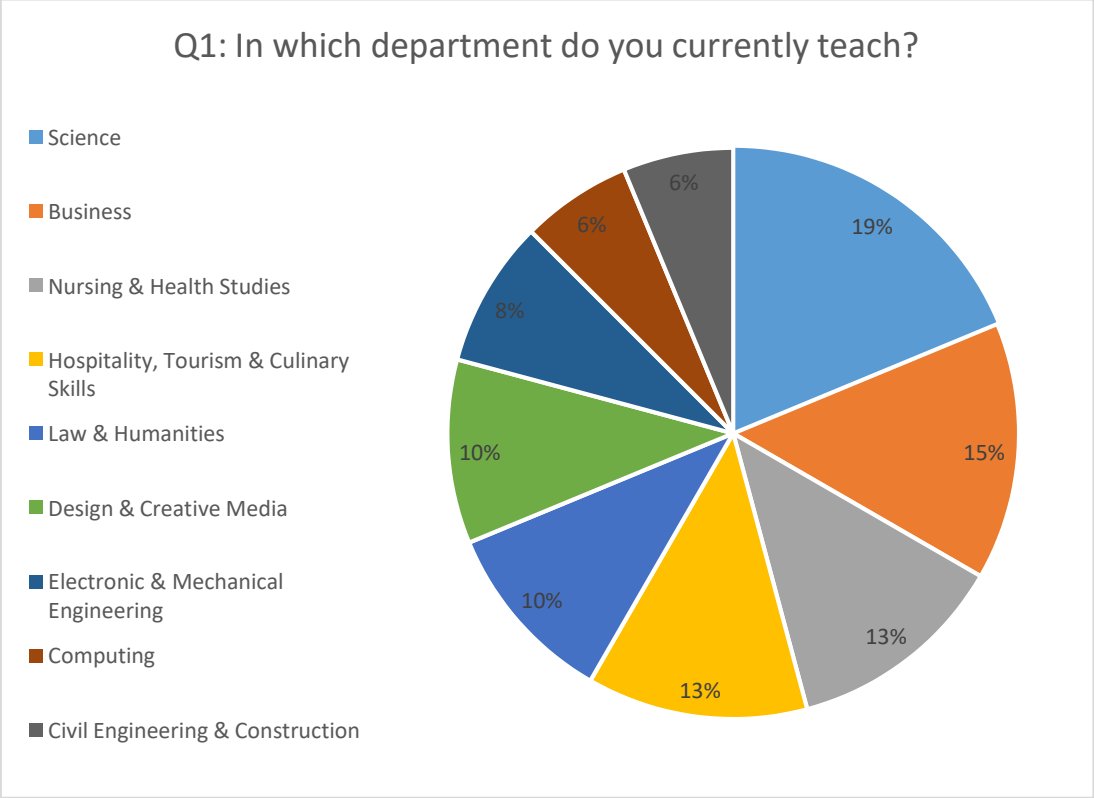

Figure 4.2.1: Departmental Breakdown

Most lecturers (19%, n=9) who responded to the survey teach in the Science department in XXXXXX. This was followed by Business (n=7), Nursing and Health Studies (n=6), Hospitality (n=6), Law & Humanities (n=5), Design (n=5), Electronic & Mechanical Engineering (n=4), Computing (n=3) and Civil Engineering (n=3). Survey responses were obtained from lecturers across all XXXXXX departments. Therefore, the findings may be more generalisable to the teaching staff in the Institute as a whole, despite the low number of responses.

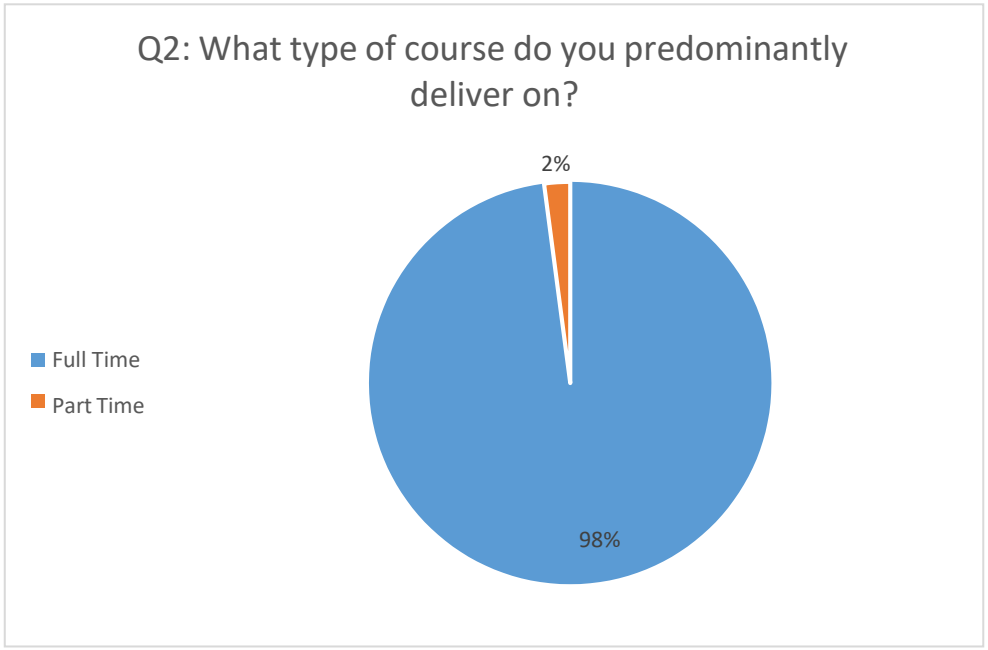

Figure 4.2.2: Type of programme delivered

It was found that 98% (n=47) of lecturers that completed the survey teach on full-time programmes while the remaining 2% (n=1) of lecturers teach on part-time programmes.

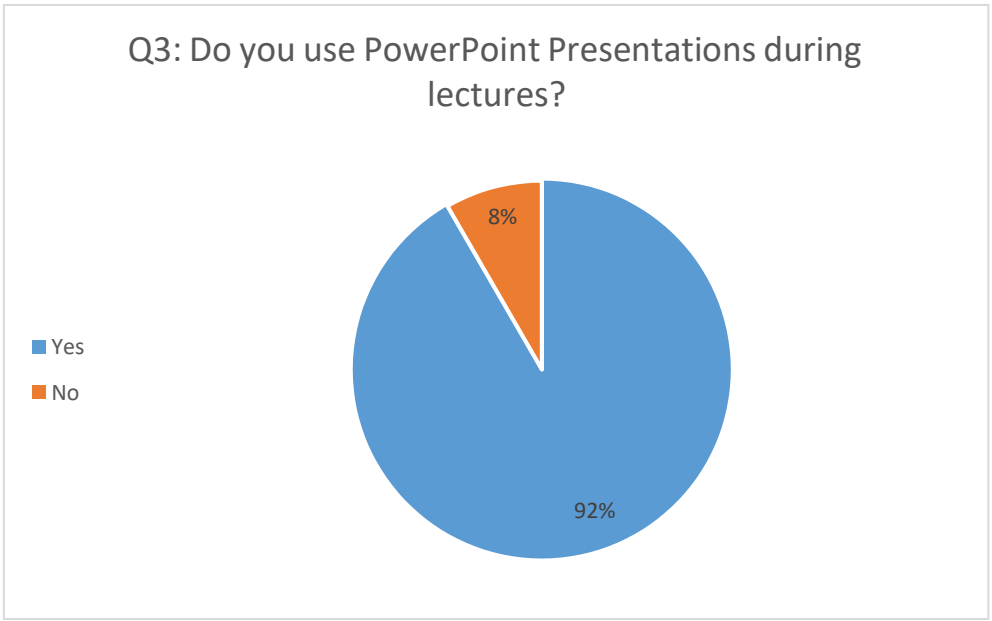

Figure 4.2.3: Use of PowerPoint Presentations

It was found that most lecturers 92% (n=44) noted that they use PowerPoint presentations during lectures, while the remaining 8% (n=4) do not.

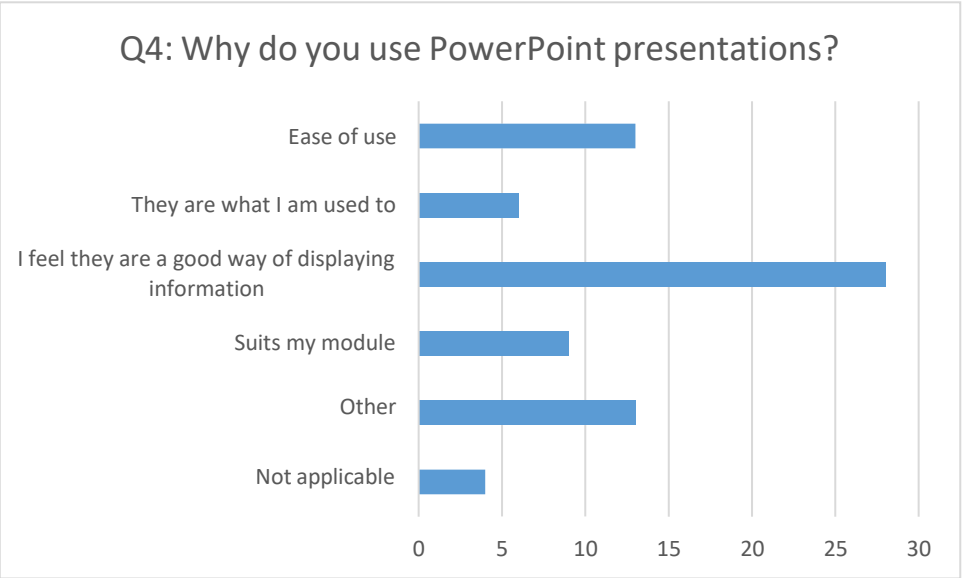

Figure 4.2.4: Reasons for using PowerPoint

This question allowed for multiple selection of answer choices by lecturers in order to gain a more complete picture of their reasoning for use of PowerPoint presentations. It was found that most lecturers (n=28, 67%) felt that PowerPoint Presentation was a good way of displaying information. This was followed by ease of use (n=13, 27%), other (n=13, 27%), that PowerPoint suited the particular module (n=9, 19%) and it was what the lecturer was used to (n=6, 13%). This question was not applicable to 4 lecturers (8%). Some of the "Other" responses were as follows:

• *"Can be accessed in all computers and doesn't rely on internet, can be interactive and visually engaging!"*

• *"Other options are not well supported."*

• *"Efficient format for theory topics with pictures, videos, web links etc."*

• *"Not particularly good for delivery, used as a repository of lecture material"*

• *"Students expect notes. They also organise my lecture delivery. My lectures are a summary of the directed reading and do not replace the directed reading."*

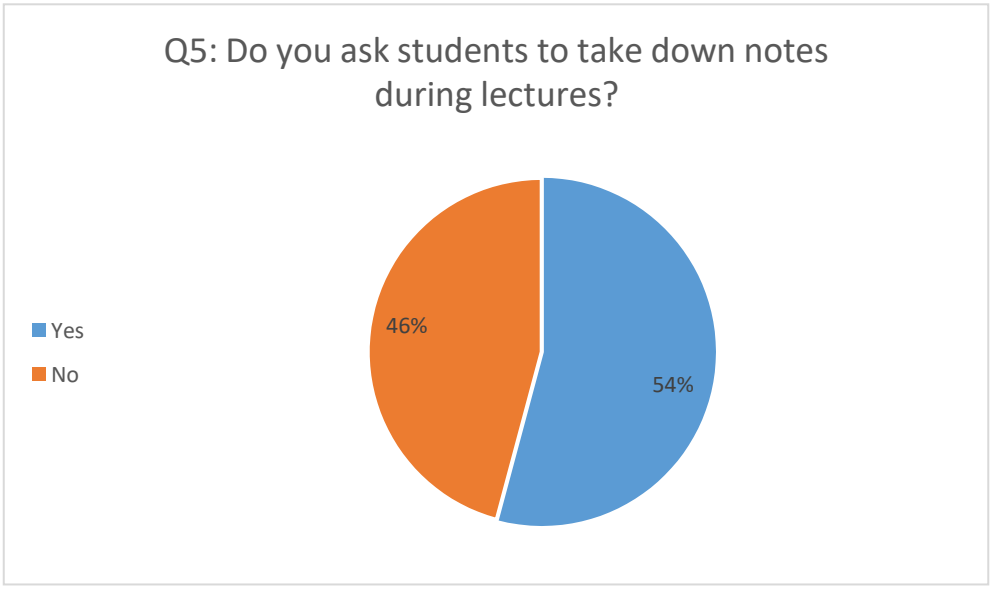

Figure 4.2.5: Use of note taking

It was revealed that just over half of lecturers who responded (54%, n=26) ask students to take down notes during lectures, while 46% (n=22) do not.

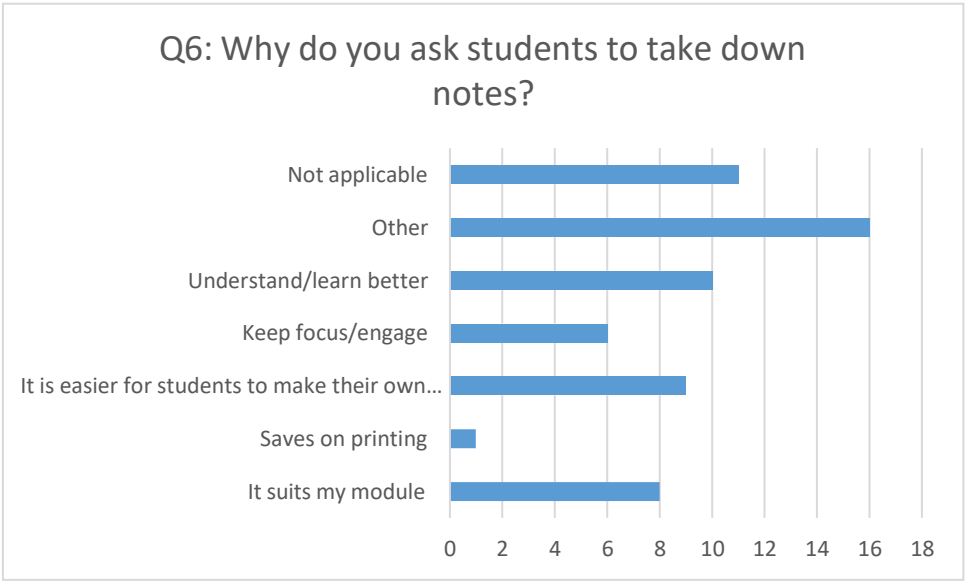

Figure 4.2.6: Reasons for note taking

Again, this question allowed for multiple selection of answer choices by lecturers. The survey revealed that lecturers feel it is easier for students to make their own notes (n=9, 19%). Lecturers also felt that students understand/learn better using their own notes (n=10, 21%), that it suited their module (n=8, 17%), that it is a method of keeping students focused/engaged (n=6, 13%) and that it saves on printing (n=1, 2%). This question was not applicable to 11 lecturers (23%) and there were 16 "Other" responses (33%). Some of these were as follows:

• *"They wouldn't do it! Rather take a photo"*

• *"the notes I ask them to take are regarding the discussion not transcribing content"*

• *"Ask them to take supplementary notes, core lecture notes available on Blackboard"*

• *"Process and develop thoughts on content."*

• *"if we are doing a class problem in the room, if there is something I want to discuss that is not on the slide"*

• *"To break up the tedium, to get them to come to class, PowerPoints skeleton upon which class lecture is based. Not all detail is on slides."*

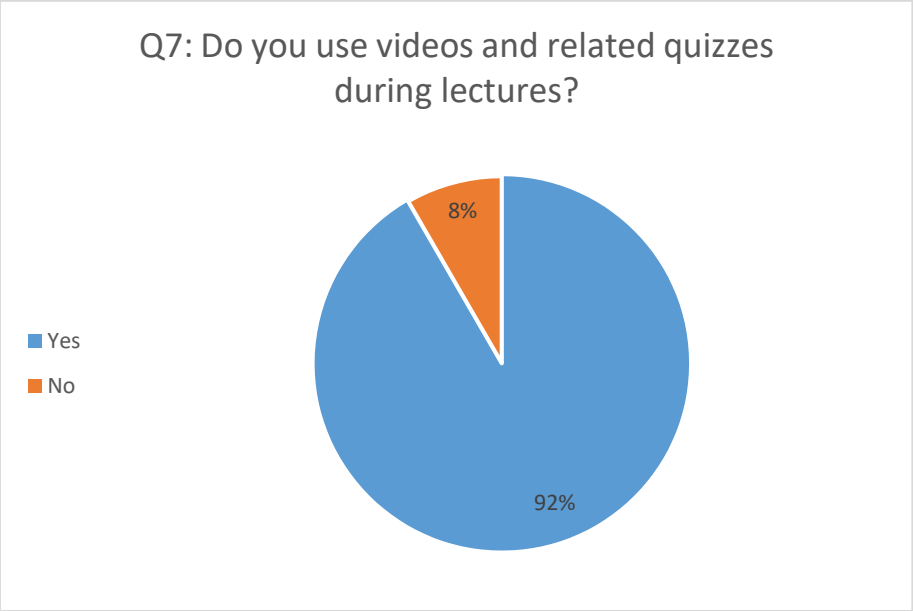

Figure 4.2.7: Use of videos and related quizzes

The survey found that the majority of lecturers 92% (n=44) used videos and related quizzes in their lectures, while 8% (n=4) do not.

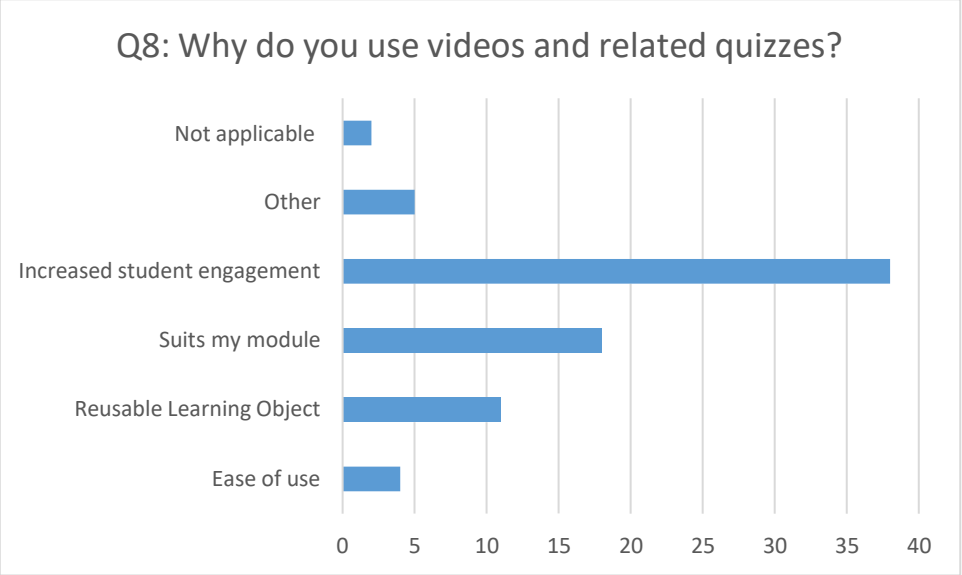

Figure 4.2.8: Reasons for using videos and related quizzes

It was found that most lecturers (n=38) used videos and related quizzes in their lectures to increase student engagement. Lecturers also feel it suits their module (n=18), they are easy to use (n=4) and they are a reusable learning object (RLO)(n=11). This question was not applicable to 2 lecturers and "Other" responses included:

- *"Can show subject matter in a different perspective than my lecture"*
- *"Good teaching aid. Students like being able to pause etc."*
- *"Very often a video can show how the theory covered looks in real life which provides a greater depth of learning"*

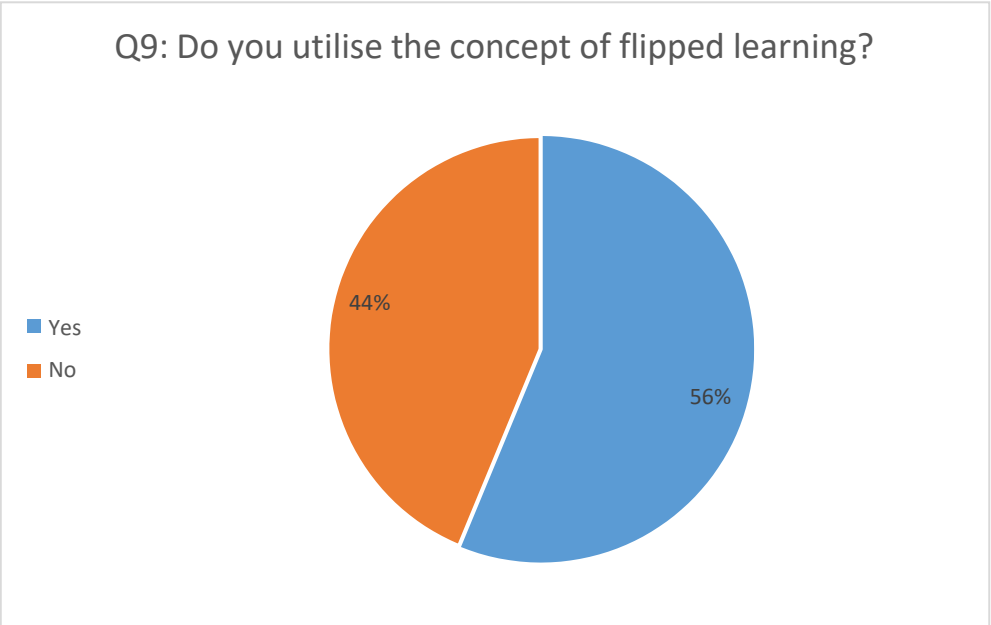

Figure 4.2.9: Use of flipped learning

It was revealed that 56% (n=27) of lecturers utilise flipped learning with their students, while 44% (n=21) do not.

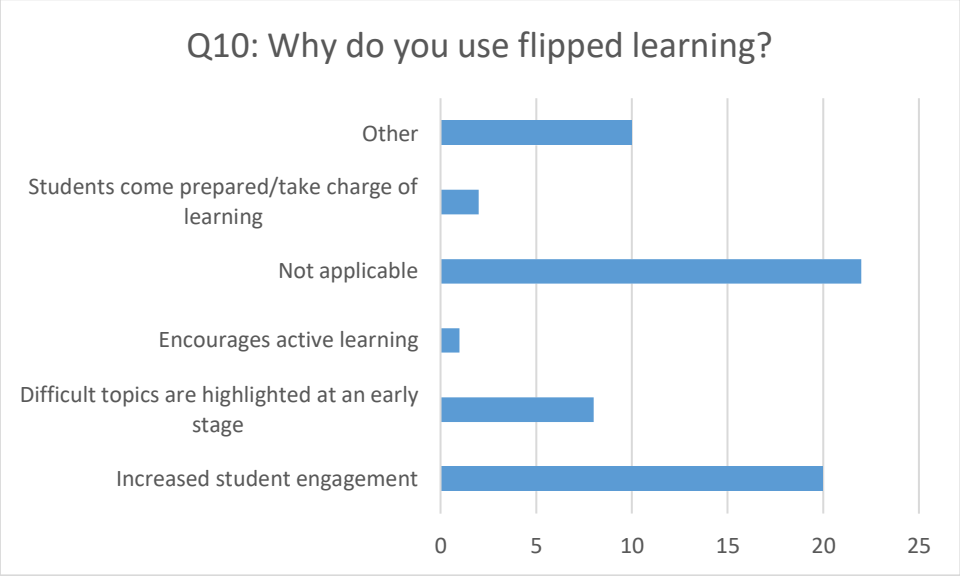

Figure 4.2.10: Reasons for using flipped learning

It was found that most lecturers (n=20) feel flipped learning increases student engagement. Lecturers also felt that difficult topics were highlighted at an early stage (n=8), that it encourages active learning (n=1) and that students come prepared/take charge of their own learning (n=2). This question was not applicable to 22 lecturers and some "Other" responses were as follows:

• *"Students love videos as they support self-paced learning. Increased student engagement, retention and attainment. Flipped transformed my teaching practice."*

• *"It allows the learners to share with each other in a collaborative way."*

• *"it's essential to the course learning that the student follows their own trajectory"*

• *"only 1 hour contact time with fourth year subject - a lot of independent reading expected/needed"*

• *"Students have some knowledge of the subject. Saves time as we have so much content to cover"*

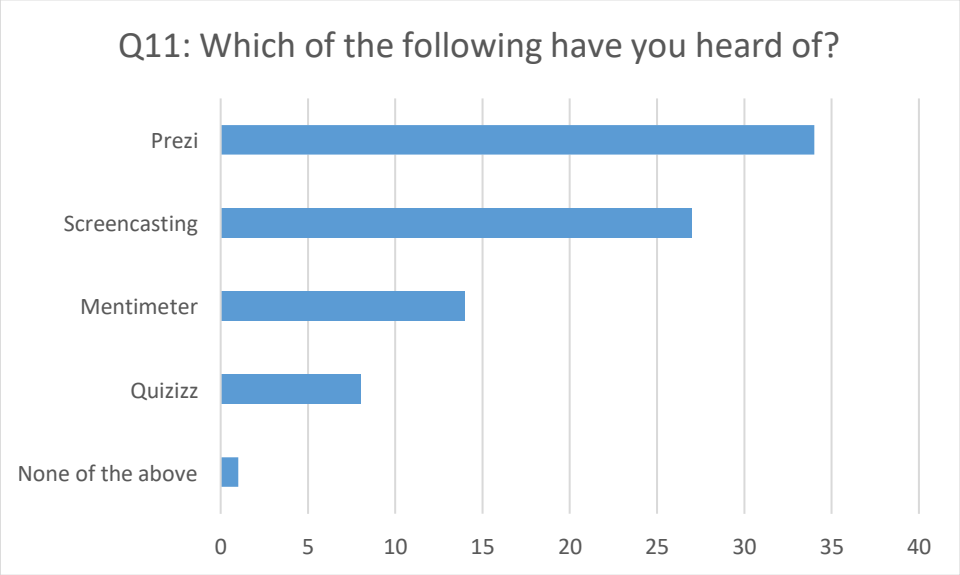

Figure 4.2.11: Awareness of technology

The survey found that 34 lecturers (71%) have heard of Prezi, 27 lecturers (56%) have heard of screencasting, 14 (29%) lecturers have heard of Mentimeter and 8 lecturers (17%) have heard of Quizizz. One lecturer had heard of none of the above.

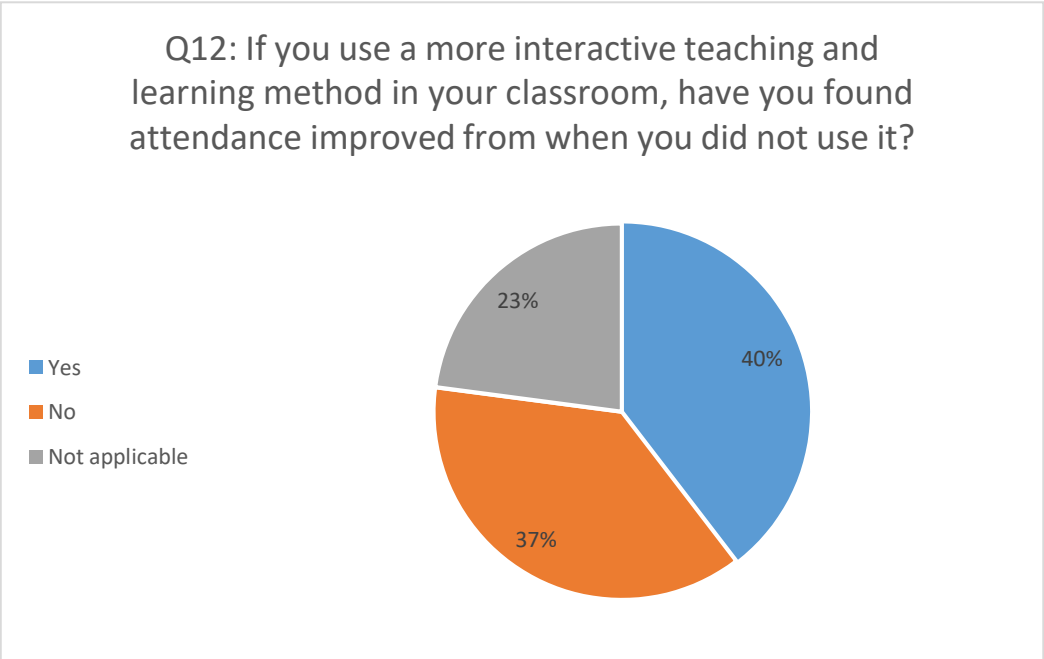

Figure 4.2.12: Student awareness in interactive classes

It was revealed that 40% (n=19) of lecturers that already employ interactive methods of teaching and learning found the attendance in their classrooms had improved, while 37% (n=18) did not, and this question was not applicable to 23% of lecturers (n=11).

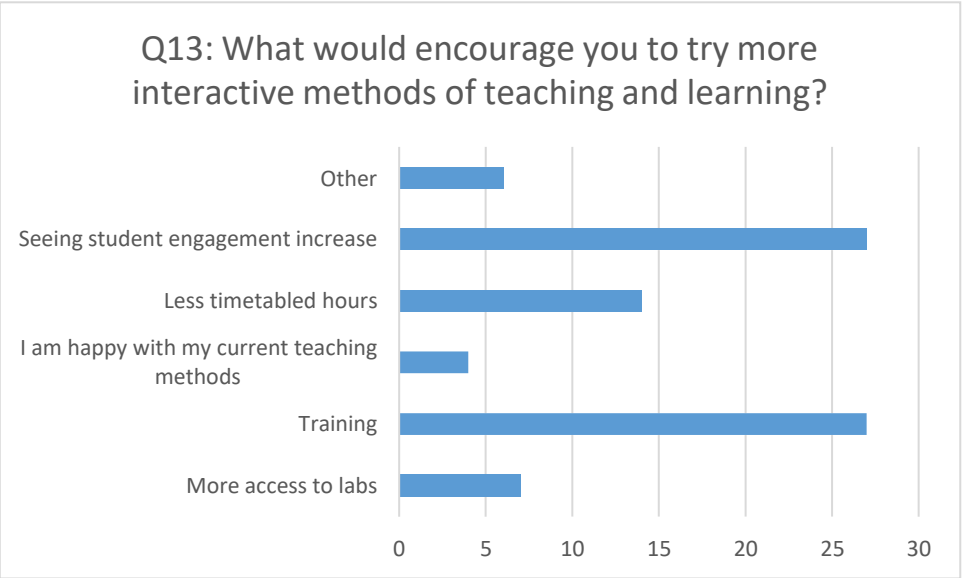

Figure 4.2.13: Encouragement incentives

The survey found that lecturers would be equally encouraged to try more interactive methods of teaching and learning were they to see evidence of increasing student engagement (n=27) and if more training (n=27) was provided. It was also found that less timetabled hours (n=14) and more access to labs (n=7) would prove to be beneficial. Whereas four lecturers were happy with their current teaching methods and "Other" responses were as follows:

- *"The collaboration with colleagues who already use it has given me confidence to engage in differing ways"*
- *"Time to prepare and test"*
- *"A teaching strategy within XXXXXX that encourages and promotes teaching excellence and innovation in teaching practice and is informed by pedagogic research and best practice internationally."*
- *"Smaller classes and tutorials"*

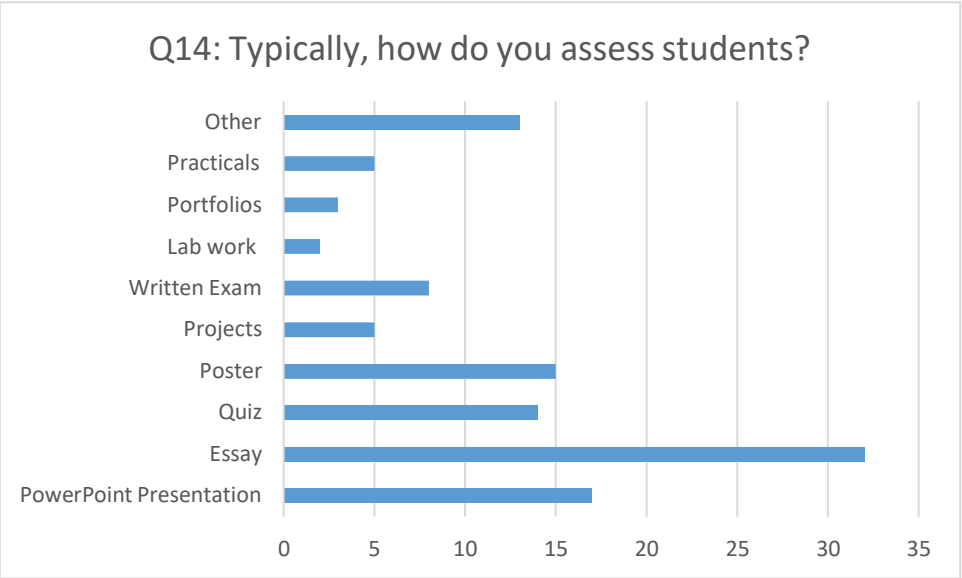

Figure 4.2.14: Methods of assessment

The survey revealed that most lecturers (n=32) use essays as a form of assessing students. This was followed by PowerPoint Presentation (n=17), poster (n=15), quiz (n=14), written exams (n=8), practicals (n=5), projects (n=5), portfolios (n=3) and lab work (n=2). "Other" responses included:

- "*Peer assessment*"
- *"Reflective diaries"*
- *"Socrative"*
- *"Calculation example"*
- *"Problem based learning questions or scenarios. Online short questions also"*
- *"questions in class"*
- *"pecha kucha"*

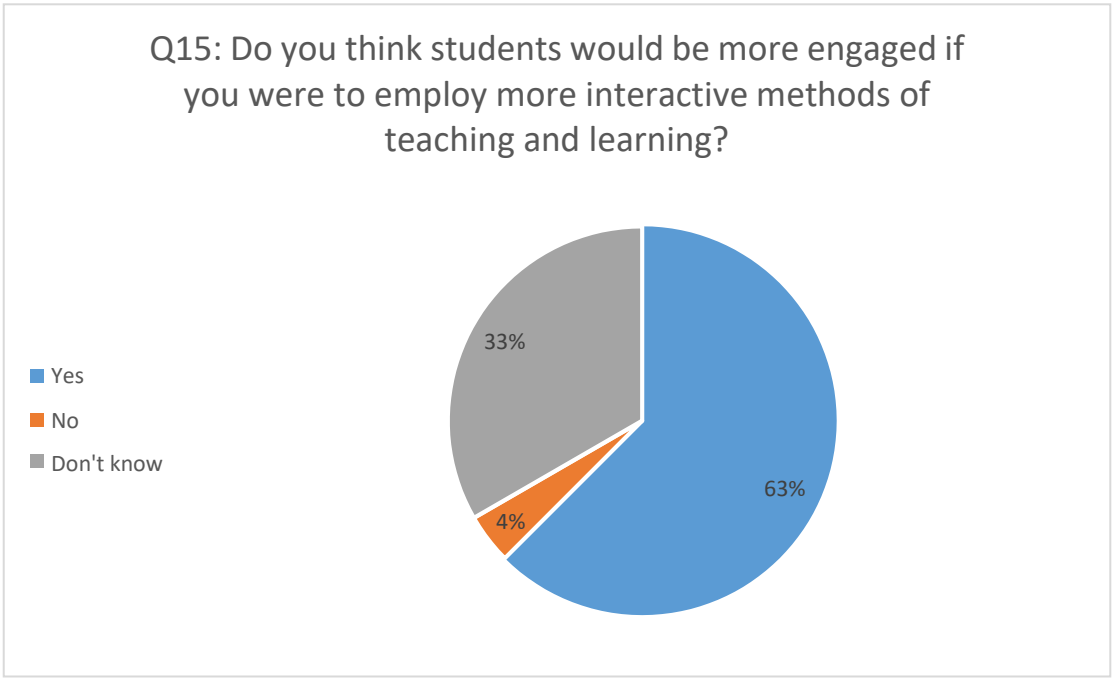

Figure 4.2.15: Opinions regarding improved engagement

It was found that 63% (n=30) of lecturers feel their students would be more engaged in they were to employ more interactive methods of teaching and learning, while 33% (n=16) of lecturers did not feel that this would be the case, and 4% (2) did not know if it would have any impact on student engagement.

Finally, as with the student survey, lecturers were also asked for their definition of interactive teaching and learning. Some of their responses were as follows:

- *"Two-way dialogue"*
- *"Learning with engagement of both parties"*
- *"Two-way communication. Student contributions. Active learning opportunity. Problem based learning. Lecturer support and guidance."*
- *"The teaching and learning of students who are able to freely interact and be more involved with their learning."*
- *"Use of technology in the learning environment"*
- *"where teaching and learning is an interactive process between students and students and students and teachers"*
- *"Sharing with students. Allowing communication between students, lecturers and a computer to be open and easily exchanged"*

- *“It is all about instructing the students in a way they are actively involved with their learning process.”*

Chapter 5: Analysis

5.1 : Student Results

5.1.1 : The majority of students who participated in the survey were in the 18-23 age group (64%, n=147). This is reflective of the age profile of students who attend XXXXXX, according to information provided by the XXXXXX Examinations Office 2020. It is potentially also reflective of the age group who use the internet and access emails most often. The Central Statistics Office (CSO, 2019) reported that fifty six percent of 16 – 29 year olds use the internet "several times a day", while twenty eight percent use it "nearly all of the time" and five percent use it "all the time". Students attending XXXXXX range in age from 17 – 71 (Examinations Office 2020), however students must have been at least 18 years old to partake in this research study.

5.1.2 : In relation to the gender profile of students, it was mainly females who participated in the survey (72%). Smith (2008) notes that more understanding is required in relation to gender demographics when conducting surveys. Some investigations stated that men may answer online questionnaires in greater proportions than women (Kehoe and Pitkow (1996); Kwak and Radler (2002); Smith and Leigh (1997)), while others document that women may respond in greater numbers to a traditional questionnaire (Kwak and Radler (2002); Sax *et al.* (2004); Underwood *et al.* (2000)). There are only slightly more female students (2236, 52%) attending XXXXXX than male students (2024, 48%), so this was not likely to have had a significant impact.

5.1.3 : Eighty nine percent of students that participated in the survey were enrolled on a full-time programme in XXXXXX. According to the XXXXXX website, there are 92 part-time and 136 full- time programmes operating between the campuses XXXXXX and XXXXXX. The number of students enrolled on a part-time programme is 1048 and the number of students enrolled on a full-time programme is 3212 (Examinations Office 2020). Part-time programmes in XXXXXX generally have a smaller cohort of students and this is reflective of the number registered.

5.1.4 : It was found that first and third year students made up just over half of respondents in this survey (53%). The researcher would speculate that this is due to the fact that these cohorts of students could be more conscientious in checking their emails; first year students are

potentially seeking instruction from lecturers and third years for the same reason due to the fact that most courses in XXXXXX have an exit award at this point. The survey results gathered could be generalisable to all year groups however, as every year group from first year to Masters level was represented. There are very few students studying at PhD level in XXXXXX and the lack of response from this cohort was expected.

5.1.5 : For this question, students were asked to choose multiple answer options by which their lectures were delivered. It was not unforeseen that ninety four percent of students (n=216) chose PowerPoint. It was unexpected however that the next most popular form of delivery was by way of printed handouts, with 64 students (28%) choosing this option. In recent years, academic staff were instructed by management to refrain from printing due to the associated costs. The results to this question are notable in that the college had closed due to the COVID-19 lockdown when the survey was distributed, but lectures were still being delivered via PowerPoint presentation. This could be due to the fact that lectures had a very short time frame to turn around their material, or due to the fact that as it was coming to the end of the academic year that there was very little left to deliver and so lecturers did not feel the need to change their methods. There is also the possibility that while students were experiencing a new reality, they could have answered the survey reflecting on their time spent in college as opposed to what they were experiencing at that point in time. The next most popular answer cited was watching videos and taking quizzes. This is a very positive result given the research that those students learning by way of quizzing ask higher order questions and feel better organised for exams (Narloch *et al.* 2006). Other methods cited were DocCam, flipped earning, whiteboard notes, Blackboard, Zoom and Skype. Those responding with Zoom and Skype may have been referring to the period of time during lockdown, or this could be a normal method of delivery for their programme(s) if these students are completing online programmes. Only four students cited Blackboard as their method of delivery, which is remarkable as Blackboard is the preferred Virtual Learning Environment (VLE) at XXXXXX. The researcher would suggest that while PowerPoint presentation is the most cited response, that those accessing the presentations likely go through the VLE in order to access those presentations and therefore this response isin fact one and the same.

5.1.6 : This question was another whereby the students could choose multiple options. Again, it was not unpredicted by the researcher that 180 students (78%) have heard of Podcasting as it is currently extremely popular amongst all ages in society. The researcher is aware of one

lecturer within XXXXXX that uses Podcasting as a way of assessing students but obviously does not know if any of their students completed the survey. The researcher was very interested to learn how few students had heard of Mentimeter or Quizziz, given how popular videos and related quizzes in the classroom are (Kay and LeSage 2009). The researcher also found that five students had heard of none of the available options.

5.1.7 : This question addressed how students were assessed in their classroom. Eighty one percent (n=187) were assessed by writing an essay, followed by PowerPoint Presentation (n=86, 37%). There are well-documented disadvantages to continually assessing students via essays, especially for students with disabilities such as dyslexia or for those students for whom English is not their first language. As far back as 1992, Bos and Anders were encouraging the use of interactive methods of teaching and learning for students with learning disabilities in order to promote text comprehension and content learning. Sixty three students cited that were assessed by quizzing (27%). This was an interesting finding as so few students had reported that they had not heard of Mentimeter or Quizziz in the last question. Possibly, the researcher should specifically have used additional options here such as multiple-choice questionnaire (MCQ), Mentimeter or Quizziz. This could have given a clearer result; however, this was not picked up during the piloting of the survey. Options such as written exams, online exams, lab reports and practical assessment were also cited but not often.

5.1.8 : For this question, seventy four percent (n=170) of students noted that they would be more likely to attend a lecture where a more interactive form of teaching and learning was utilised. The researcher was not surprised by this result, however found it interesting that more students chose that they did not know if they would be more likely to attend than "No". Students' views of interactive teaching and learning will be discussed in a later section (section 5.1.10). To compare with the lecturer survey, forty percent of lecturers (n=19) stated their attendance rates have improved since employing a more interactive method of teaching and learning so there is some corroboration between the two sets of results.

5.1.9 : In this question, eighty two percent of students (n=189) believe that they would be more engaged in class if it were to involve more interactivity. This is similar to the result of the previous question – the corroboration of these findings helps show validity in the survey and also indicates that participants were being truthful. This finding is noteworthy as most students think they would be more engaged in a lecture were it to involve more interactive teaching and

learning, but from the previous question and answers, not all of the same students would have gone to this lecture just for this reason. Sixty three percent of lecturers feel their students would be more engaged in they were to employ more interactive methods of teaching and learning, a somewhat lower result than the students, but still just short of three quarters of participants and a positive finding, nonetheless.

5.1.10 : The final question in the survey gave students the opportunity to define interactive teaching and learning. It gave the researcher an insight into what students felt the terminology means. Some responses were unexpected, for example, there was an element to some answers that the onus was on the lecturer to deliver and be available to students at all times. There were, however, a notable number of responses that referred to students taking responsibility for their own learning, two-way communication and students getting involved in the class, which was satisfying to see. All student responses can be found in Appendix 8.7.3.

- *A place for students to submit work and get teachers feedback*
- *Getting students involved*
- *A balance of lecturer interaction as well as the use of the computer labs*
- *Full interaction and attention from lecturers with each individual whether it be in the classroom or as simple as answering an email from a student.*
- *Using resources online such as zoom and skype.*
- *Use of different teaching aids to maintain engagement between the teacher, the material being taught and the learner.*
- *Education which incorporates technology and social media*
- *Learning/teaching using technology sources*
- *Teachers helping students learn by talking to them and providing help to them personally.*
- *Communication*

These responses varied from the lecturer response in that there were very few lecturers who placed the onus on either party, but rather used terms such as “sharing”, “allowing communication”, “open”, “engagement of both parties” and “actively involved” in their definitions. This poses the question – are many students ready to take control of their own learning trajectory, or are they still programmed into a rote system of learning like their experience when studying for the Leaving Certificate? Dr. Denise Burns, of Dublin City

University (DCU), in her analysis of Leaving Certificate Examination papers, notes that higher level skills such as problem solving and critical thinking are largely absent and also that students rely heavily on rote learning to get through. However, in this instance, Dr. Burns did go on to state that students found problem solving and being creative an enjoyable and challenging experience.

5.2 : Lecturer Results

5.2.1 : Most lecturers who completed the survey work in the Science department (n=9), followed by the department of Business (n=7). This is not surprising as the researcher also works in the department of Science and encouraged their colleagues to complete the survey. This Master of Arts in Learning and Teaching (MALT) belongs to the Department of Law and Humanities and five lecturers in this department completed the survey. This number, along with those in the department of Business, potentially account for lecturers that are involved with the MALT programme, as Law and Humanities comes under the School of Business, and lecturers would answer surveys in order to help their students. Survey responses were obtained from lecturers across all XXXXXX departments despite the los number of responses.

5.2.2 : It was found that ninety eight percent of lecturers that completed the survey teach on full-time programmes, while two percent teach on part-time programmes. While this seems to be a huge discrepancy, this finding does reflect the student survey finding whereby only eleven percent of students that responded are attending a part-time programme. The fact that there are less part-time programmes within the two campuses – 92 part-time while there are 136 full-time (Examinations Office 2020) also contributes to this response. The researcher would further speculate that some lecturers teach on both part- and full-time programmes, but there was no option to choose "Both" and therefore lecturers could have chosen the option they lecture most frequently on.

5.2.3 : It was found that ninety two percent (n=44) of lecturers use PowerPoint Presentations as a means of content delivery. This finding corroborates the findings of the student survey, where students stated that ninety four percent of their lectures are delivered via PowerPoint presentation, and so was envisaged by the researcher. There is no way of telling whether the lecturers surveyed teach the students that responded, and therefore this is a way of measuring the validity of the survey. This question however did not address whether lecturers use this method exclusively or as part of a combination of other methods of delivery and this is where

it differs from that of the question asked in the student survey. PowerPoint has been in operation since the late 1980's and while there are other options out there such as Prezi, it is obvious that lecturers do still feel it is appropriate. The literature notes that those taught using Prezi or PowerPoint performed better in summative evaluation as opposed to those receiving traditional instruction (Chou *et al.* 2015) so this is a positive finding.

5.2.4 : This question delved into the reasons why lecturers chose to use PowerPoint as a method of content delivery. Most lecturers (n=28, 58%) felt that PowerPoint is a good way of displaying information. There were an equal number of lecturers (n=13) choosing that the software is easy to use, as those who inserted their own reasoning in the "Other" section (Appendix 8.6.1).

5.2.5 : Fifty four percent (n=26) of lecturers indicated that they ask students to take down notes during their lectures, while forty six percent (n=22) do not. While some may argue that this is an outdated practice, for many programmes within XXXXXX, note taking is still an important aspect of the lecture. The researcher for example teaches drug and fluid therapy calculations to their students, and students are required to take notes during these lectures. XXXXXX offers many science and engineering based programmes, all of which have a mathematical element to them therefore calculations on paper are intrinsic to the programme learning outcomes (PLOs). There is no way of knowing if the lecturer participants were referring to written text notes or calculations for this question, perhaps the question could have been re-worded slightly in order to clarify this point. Winter and summer final examinations in XXXXXX are completed on paper, so writing is still a valuable requirement as part of the formal assessment process ofthe college.

5.2.6 : Nearly one quarter of lecturers (n=10) feel students understand/learn better when they make their own notes. Note taking is undoubtedly an invaluable skill, whether one is an academic or not and it involves many mental processes at once. Friedman in 2014 notes that the "working memory" of those students trying to record everything a lecturer says can reduce their ability to understand content during a class. However, Friedman goes on to state that studying from a lecturer's notes is not as effective as studying from a students own notes as the student does not have the ability at that point to review the connections they made between ideas during the class.

5.2.7 : The survey found that ninety two percent (n=44) of lecturers use videos and related

quizzes during their lectures, while only eight prevent do not. This is a welcome result given the positive literature in relation to this area and the fact that students are positive about the use of ARSs in higher education (Caldwell 2007; Durbin and Durbin 2006; Fies and Marshall 2006; Hu *et al.* 2006; Simpson and Oliver 2007). Videos and related quizzes are forms of RLO that can be used together or separately and align with real-word learning needs (Windle *et al.* 2007). Narloch *et al.* in 2006 found that students who received pre-lecture quizzes, compared to no quiz, performed better in essay exam questions. This finding could raise questions in relation to the student survey, whereby only twenty seven percent of students stated they were assessed via quiz, however this question did not specifically ask lecturers if they were assessing by way of quizzing or if they are using it as an interactive tool for engagement.

5.2.8 : This question asked lecturers why they use videos and related quizzes, but again not specifically in relation to assessments, more so in relation to the benefits of using them. The finding of this question potentially answer the query in the previous question as seventy nine percent of lecturers (n=38) stated that they use videos and related quizzes to increase student engagement. Lecturers that use videos and related quizzes agree they are an RLO (n=11), that they suit their module (n=18) and that they are easy to use (n=4). Again, this finding corroborates the previous research on the benefits associated with use of RLO's and quizzes in class by Windle *et al.* 2007 and Narloch *et al.* in 2006.

5.2.9 : Just over half of lecturers (56%, n=27) that completed the survey use the concept of flipped learning as one of their teaching tools. This is a very positive finding, given the extensive literature that welcomes its use (Bishop and Verleger 2013; Moravec *et al.* 2010; King 1993).

5.2.10 : This question was not applicable to forty six percent of lecturers who completed the survey, however those that do utilise flipped learning believe it is a way of increasing student engagement (n=20). Moravec *et al.* in 2010 found that the student centred environment in a flipped classroom encourages engagement, critical thinking and an improvement in student attitude. Flipped learning is by nature a method that requires more involvement from students. Bishop and Verleger in 2013 highlighted instances whereby students' grades increased by twenty one percent when a flipped classroom approach was adopted by their teacher. Lecturers also feel using flipped learning means difficult topics are highlighted at an early stage (n=8) and that it encourages active learning (n=1), this is likely due to the early involvement of

students in their learning. Two lecturers agree that flipped learning allows students to take charge of their learning, which affirms the assumption made by King (1993) that lecturers take a back seat in this process. "Other" responses to this question such as *"flipped transformed my teaching practice"* and *"students have some knowledge of the subject"* verified the benefits of this teaching practice. All lecturer responses in relation to flipped learning can be found in Appendix 8.6.4.

5.2.11 : Seventy one percent of lecturers (n=34) who completed the survey had heard of Prezi, fifty six percent (n=27) had heard of screencasting, twenty nine percent (n=14) had heard of Mentimeter and seventeen percent (n=8) had heard of Quizizz. In relation to Mentimeter and Quizizz, these findings state that more than half of lecturers, fifty four percent, had not heard of either. This is a remarkable result, when one takes into account that ninety two percent of the lecturers stated they use videos and related quizzes in their teaching practice. Videos and related quizzes are very simple to put together on many different platforms, however, so there is the potential that the researcher was unaware of another notable quizzing platform when developing this survey. One lecturer had not heard of any of the options for this question.

5.2.12 : Forty percent of lecturers that use an interactive method of teaching and learning in their classroom found that their attendance has improved from when they did not use it. Notably, thirty seven percent of lecturers who use an interactive method of teaching and learning state that attendance at their lectures did not improve. This is a very large proportion of lecturers and does not corroborate with literature (Kay and LeSage 2009; Moravec *et al.* 2010; Gilboy *et al.* 2015). In relation to the student survey, seventy four percent of students stated they would be more likely to attend a lecture that includes an interactive method of teaching and learning so this finding concurs with previous literature findings but does not concur with the lecturer survey outcome either. The researcher would speculate here that an interactive method of teaching and learning varies between individuals, and without definition or example, a complete picture cannot be drawn.

5.2.13 : Twenty seven lecturers (56%) reported that they would be encouraged to try an interactive method of teaching and learning were they to see an increase in student engagement and more training in the area. The researcher would comment that these are both valid points and it is understandable that teaching staff will need both evidence and training on order to change their current practices in order to improve student attendance and learning. There is no

way of telling whether the same lecturers chose both options, as this was a questions where they could choose multiple answers. Fourteen lecturers felt they would need less timetabled hours in order to make changes to their teaching practices, this finding is not surprising as changing delivery methods may initially be somewhat time-consuming. Four lecturers were happy with what they are currently doing. These four lecturers could be the lecturers that previously stated they use interactivity in the classroom and have seen attendance rates increase as a result or they may not use much interactive teaching in class currently but their particular modules are more suited to this approach as there are a wide variety of modules taught across the Institute.

5.2.14 : This finding substantiates the student survey in that most lecturers (n=32, 67%) are assessing students via essay and gives rise to the concerns raised in that section. Other popular methods of assessment are PowerPoint presentation (n=17), poster (n=15), quiz (n=14) and written exams (n=8). While lecturers in XXXXXX seem to focus on the same few types of assessment methods, students with dyslexia for example may not do well in these assessments and could therefore be disadvantaged. Connolly *et al.* in 2006 established that college students with dyslexia wrote essays of poorer quality because they "*wrote more slowly and made more spelling errors"* (p.8). The same could potentially be said for those whose first language is not English. Using more methods of assessments, or potentially giving students the option to choose, is student-centred and more inclusive.

5.2.15 : This question on the lecturer survey asked lecturers whether they think using a more interactive method of teaching and learning would improve engagement in their lectures. Sixty three percent of lecturers believe it would, four percent do not and thirty three percent do not know. The researcher found some of these answers' contradictory as in a previous survey question thirty seven percent of lecturers stated that attendance did not improve when they employed a more interactive method. It has to be pointed out that there is a difference in the question; one is asking about attendance and the other is asking about engagement, but in most instances the two are linked.

5.2.16 : The final question on the lecturer survey gave lecturers the opportunity to define interactive teaching and learning. The definitions are encouraging and would indicate that lecturers have a better understanding of the term as opposed to some of the students who completed the survey. All lecturer responses can be found in Appendix 8.6.7.

- *Is a way of engaging students with each other and that students are involved in thelearning process*
- *The learner is an active participant in the learning process and technology is used where appropriate to benefit the class*
- *It involves independent learning and active participation by learners in their education and learning.*
- *Two-way communication. Student contributions. Active learning opportunity. Problem based learning. Lecturer support and guidance.*
- *It facilities the learning process of both learner and tutor by using medium which may allow for better engagement of learning styles (e.g.VAK)*
- *having a two-way communication, engaging the students in a variety of learning techniques, not just lecture/PowerPoint*
- *Involves active engagement and exchange information between learner and facilitator*
- *Learning with engagement of both parties.*

Chapter 6: Recommendations, Limitations and Conclusion

This chapter will present recommendations to overcoming some of the instances whereby the researcher feels there were gaps in the surveys distributed as well as recommendations from the findings. Another aspect to this chapter will be limitations to the research. Finally, the researcher will draw conclusions from the study conducted for the purposes of this dissertation.

6.1 : Introduction

While E-learning is a relatively new phenomenon, it has advanced rapidly over the last 10 years. Research would suggest that it is not being used to its full potential and that there is room for improvement (Cairncross and Mannion 2001). We use technology to turn on our heating before we arrive home from work, so why are our classrooms and lecture halls not reaping the benefits? This dissertation firstly aimed to highlight the reasons that technology would be a welcome addition to classrooms across Ireland and to draw attention to numerous simple methods that could be employed. It stressed the need for a quantitative survey in order to gauge opinion on the topic, and to ascertain whether the researcher deems the current literature to be applicable to students and lecturers in a third level Institute of Technology in the northwest of Ireland. With the addition of the survey, it aimed to reveal and understand the reason(s) why technology is not being utilised as much as it could be.

6.2 : Recommendations

6.2.1 : Define interactive teaching and learning

While it was interesting to read different definitions of interactive teaching and learning, the researcher would speculate that the difference in opinion on the definition of teaching and learning could potentially have skewed participant's decision making in certain questions. If perhaps the definition was set out from the beginning and it was clear that participants had a good understanding, the findings could have been somewhat different.

6.2.2 : Be clearer with terminology

This recommendation follows on from the last in relation to the readers' understanding of different terms. While this was not something that came up in piloting of the survey, the researcher could have included a glossary with the participant information sheet to aid in participants' understanding.

6.2.3 : Involve one or more Institutes of Technology

It is always advisable for a quantitative study to involve as many participants as possible. Accessibility issues and time constraints did not allow this to happen in this study, however, in future, the researcher would involve a bigger population of students in order to make more robust conclusions.

6.2.4 : Ask students more questions

While the researcher did not want to overstep the mark, finding out what department students were in may have been beneficial to the study, however, asking this question may have provoked a negative response from some students if they felt that it may have helped identify them and this may have result in them being less truthful in their responses. The researcher only realised toward the end of the study that she did not explicitly ask the students her research questions. Questions such as "do you feel you do/would learn more deeply using interactive teaching and learning methods" and "are you enjoying your learning experience" were omitted from the survey. This was an oversight on the researcher's behalf; however, it is not clear whether students could have answered these questions now knowing that there are only a few lecturers undertaking interactive teaching and learning practices in XXXXXX.

6.2.4: Lecturer response

Overall, lecturers seem to be willing to engage with interactive teaching and learning and the researcher feels this should be facilitated where possible. Lecturers have noted they would like to see more time being allocated to this as well as training being offered. Towards the end of the academic year 2019-20, the researcher attended numerous workshops in XXXXXX hosted by the Department of Flexible and Online Learning. These workshops had up to 20

attendees and were beneficial to those with little to no experience of online teaching and learning or concepts such as flipped learning. Throughout the coronavirus pandemic, this department held various workshops on all aspects of online teaching in order to help academic staff with the abrupt changeover. The researcher would like to see this assistance continue and grow into the next academic year.

6.3 : Limitations

6.3.1 : Gaining consent

Gaining consent from the Heads of Department (HoDs) throughout XXXXXX proved to be a challenge far greater than the researcher anticipated. Should this consent have been granted sooner, the surveys could have been distributed earlier. The researcher believes that this would have increased the response rate from both students and lecturers as the surveys would have been distributed when they would have been in the college under normal circumstances and would not have been pre-occupied with matters in relation to the Coronavirus pandemic and end of term exams and alternative assessments.

6.3.2 : Coronavirus pandemic

The delayed distribution of the surveys due to the delay in gaining consent from HoDs was confounded by the proceeding Coronavirus pandemic and the closure of all schools and colleges across Ireland on March 12th 2020. Undoubtedly, the effect of the national shutdown has had an effect on this research. The researcher strongly believes that if a similar larger study related to the use of technology in third level classes were to be administered when the pandemic is over, the findings would be more substantial.

6.4 : Conclusion

To draw conclusion from the research, it is imperative to look back upon the original research questions:

1. Are students more likely to attend a class where the lecturer has moved away from the traditional PowerPoint to deliver content?

2. Are students more interested in the subject matter as a result?
3. Are students learning more deeply?
4. Most importantly, are students enjoying their learning experience?

This research has investigated the use of interactive methods of teaching and learning in XXXXXX and student and lecturer perceptions on same. In relation to the first research question,it is clear from the student response that most are willing to attend classes where a more interactive form of teaching and learning than PowerPoint is being used. However, some lecturers stated that even though they had employed a more interactive method, their attendance rates had not improved. This is not a finding that the researcher expected, however, it is important to take it into account when developing content for interactive classes going forward. If would be interesting to know what methods were employed, for how long, how many students took part and could one work out what the reasons for the lack of success were.

The Coronavirus pandemic arising March 2020 meant that lecturers and students were forced to accept a new online classroom. There was no option to communicate in person for approximately twelve weeks so alternative methods of content delivery had to be explored. There is no other way that e-learning would have been embraced as quickly as this, and in most cases, as efficiently. Both students and lecturers had to learn quickly, and all reports considered, the researcher believes the process went well. It seems that the academic year 2020/21 will proceed with a lot of classes remaining online so it would be interesting to revisit the survey questions and see if opinions have changed this time next year. It would seem from this research that academic staff were reluctant to try new methods of teaching due to time constraints and lack of training, however, it was not possible to alleviate any of these strains during the pandemic.

In relation to the other three research questions, unfortunately the researcher does not believe they were answered. Literature would suggest that these are likely outcomes of using more interactive methods of teaching and learning in the classroom, but the researcher feels that there is not enough “alternative” teaching and learning occurring within XXXXXX to give definitive answers to these questions. Perhaps a focus group with the lecturers and students who are using interactive teaching and learning practices could have been beneficial. This was not possible due to the Coronavirus pandemic; however, it is something to think about for future study.

Chapter 7: References

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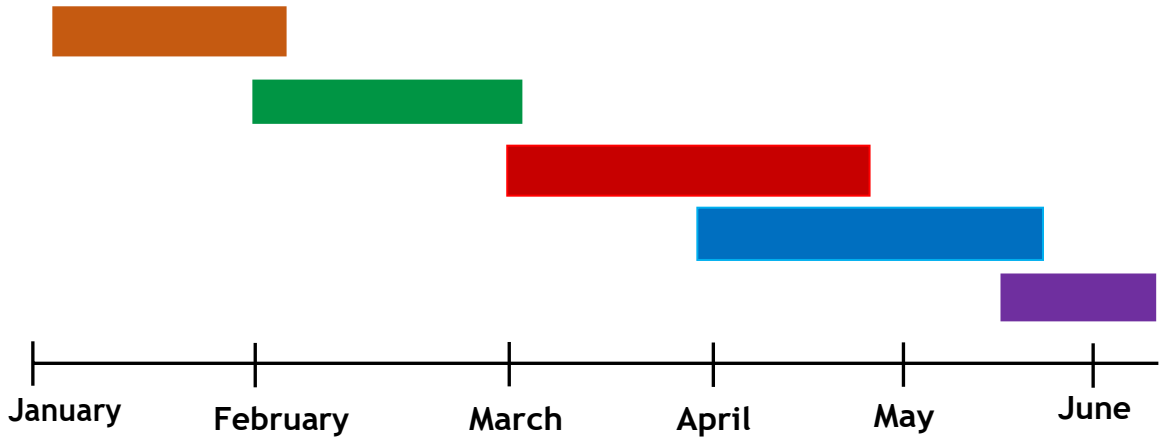
Chapter 8: Appendices

8.1 : Schedule – Gantt Chart



January

- Ethical results approved
- Risk assessment completed
- Survey distributed via email, online and in class

February

- Survey results obtained and recorded

March - April

- Results are critically analysed and compiled

April - May

- Complete draft of Research Project

June

- Submit final copy of Research Project

8.2: Participant Information Sheet - Lecturer

The principal researcher, Máiréad Boyce, is a Registered Veterinary Nurse (RVN) and holds a B.Sc. (Hons) in Animal Behaviour and Welfare. She has been employed as an Assistant Lecturer (AL) since 2017 by the Science Department in XXXXXX. Prior to this, Máiréad worked full time in Veterinary practice.

This is an XXXXXX research project. XXXXXX is the data controller for this research project. This research is intended to provide an insight into the number of lecturers currently using interactive and/or creative means of delivering content to students, using quizzes on platforms such as Mentimeter, for example, and the effectiveness of same. The researcher would like to find out whether the full range of available software technology is currently being used to deliver content. The research will run for up to 4 months.

To participate, you are asked to complete the survey below, which should take approximately 5 minutes. In the survey, you will be asked a number of questions regarding the use of technology in your lectures. You have been asked to participate as you are over the age of 18 and are lecturing on a full or part time course in XXXXXX.

You will not be asked to provide any personal data, e.g.: age and gender etc. The survey will not ask any questions which will reveal sensitive (special category) personal data. The survey will be anonymised and the provision of your name is not be required.

The answering of these questions is voluntary.

By clicking "submit" at the end of the survey, you will indicate your consent to taking part in the survey.

You may withdraw from the research study before the survey is complete and submitted. Once the survey is complete, the data will be stored anonymously. Withdrawal after the time is not possible as all data stored is anonymous.

It is important to note that your involvement/non-involvement in the project has no bearing on your position within XXXXXX.

There are no risks to you. Possible benefits include (but are not limited to) enhancement of all courses currently available at XXXXXX – in terms of making lecturers aware of the technology available to them, a change in content delivery as a result and an increase in student engagementand attendance.

Data Sharing

The data collected will only be used within XXXXXX for academic purposes and will not be transferred to third parties.

Sharing of Data and Data Collection Mechanism

Participating in the survey is possible without indicating your name and without registration. All information is thus anonymous and highly confidential. It must be noted that protection of this data is subject to legal limitations. It is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions. The data will be collected on the servers of Google Forms until the end of the data collection period, which is 31st July 2020 at the latest. It will be encrypted and secured. The data collected will also be saved on the server's of XXXXXX's software provider until the end of the research project. The data will be encrypted and secured in compliance with relevant data protection legislation and in compliance with LYIT's Guidelines for Electronic Data Storage.

Rights of the Data Subject

While responding, your answers can be changed anytime. In addition, you have the rights of access, rectification, erasure (right to be forgotten), restriction of processing, data portability, to object, and not to be subject to a decision based solely on automated processing, including profiling. In addition, you can revoke your agreement with this data privacy statement anytime.

If you have questions about this survey, please contact Máiréad Boyce (XXXXXX) or Julia Wilson (XXXXXX).

If participants have questions about this study and wish to contact an independent person, please contact: The Data Protection Officer, LYIT, Port Road, Letterkenny, Co. Donegal.

Thank you for your participation.

8.3: Participant Information Sheet - Student

The principal researcher, Máiréad Boyce, is a Registered Veterinary Nurse (RVN) and holds a B.Sc. (Hons) in Animal Behaviour and Welfare. She has been employed as an Assistant Lecturer (AL) since 2017 by the Science Department in XXXXXX. Prior to this, Máiréad worked full time in Veterinary practice.

This is an XXXXXX research project. LYIT is the data controller for this research project. This research is intended to provide an insight into the number of lecturers currently using interactive and/or creative means of delivering content to students, using quizzes on platforms such as Mentimeter, for example, and the effectiveness of same. The researcher would like to find out whether the full range of available software technology is currently being used to deliver content, e.g.: PowerPoint, Quizizz etc. The research will run for up to 4 months.

To participate, you are asked to complete the survey below, which should take approximately 5 minutes. In the survey, you will be asked a number of questions regarding the use of technology in your lectures. You have been asked to participate as you are over the age of 18 and are enrolled on a full or part time course in XXXXXX.

You will not be asked to provide personal data such as your name and gender. You are being asked to choose an age bracket to confirm you are over 18. The survey will not ask any questions which will reveal sensitive (special category) personal data. The survey will be anonymised.

The answering of these questions is voluntary.

By clicking "submit" at the end of the survey, you will indicate your consent to taking part in the survey.

You may withdraw from the research study before the survey is complete and submitted. Once the survey is complete, the data will be stored anonymously. Withdrawal after this time is not possible as all data stored is anonymous.

It is important to note that your involvement/non-involvement in the project has no bearing on your position within XXXXXX.

There are no risks to you. Possible benefits include (but are not limited to) enhancement of all courses currently available at XXXXXX – in terms of making lecturers aware of the technology available to them, a change in content delivery as a result and an increase in student engagementand attendance.

Data Sharing

The data collected will only be used within XXXXXX for academic purposes and will not be transferred to third parties.

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If you have questions about this survey, please contact Máiréad Boyce (XXXXXX) or Julia Wilson (XXXXXX).

If participants have questions about this study and wish to contact an independent person, please contact: The Data Protection Officer, LYIT, Port Road, Letterkenny, Co. Donegal.

Thank you for your participation.

8.4 : Survey Questions for Lecturers

1. In what department do you currently teach?
    a. Science
    b. Nursing & Health Studies
    c. Computing
    d. Business
    e. Law & Humanities
    f. Design & Creative Media
    g. Civil Engineering & Construction
    h. Electronic & Mechanical Engineering
    i. Hospitality, Tourism & Culinary Skills

2. What type of course do you predominantly deliver on?
    a. Full time
    b. Part time

3. Do you use PowerPoint presentations during lectures?
    a. Yes
    b. No

4. Why do you use PowerPoint presentations?
    a. They are what I am used to
    b. Ease of use
    c. Suits my module
    d. I feel they are a good way of displaying information
    e. Not applicable

5. Do you ask students to take down notes during lectures?
    a. Yes
    b. No

6. Why do you ask students to take down notes?
    a. It suits my module
    b. Saves on printing
    c. It is what I am used to
    d. I do not use Blackboard
    e. It is easier for students to make their own notes
    f. Not applicable

7. Do you use videos and related quizzes?
    a. Yes
    b. No

8. Why do you use videos and related quizzes?

a. Ease of use
b. Reusable Learning Object
c. Suits my module
d. Increased student engagement
e. Not applicable

9. Do you utilise the concept of flipped learning?
    a. Yes
    b. No

10. Why do you use flipped learning?
    a. Increased student engagement
    b. Lectures progress more smoothly
    c. Difficult topics are highlighted at an early stage
    d. Not applicable

11. Have you heard of any of the following?
    a. Prezi
    b. Quizizz
    c. Mentimeter
    d. Screencasting
    e. None of the above

12. If you use more interactive teaching methods (Prezi/Quizizz), have you found attendance has improved from when you did not use it?
    a. Yes
    b. No
    c. Not applicable

13. Typically, how do you assess students?
    a. PowerPoint Presentation
    b. Essay
    c. Quiz
    d. Poster
    e. Other _____

14. What would encourage you to try more interactive methods of teaching?
    a. Less timetabled hours
    b. Training
    c. I have no interest in changing
    d. Other _____

15. Do you think that students would be more engaged in class if you were to use more interactive methods of teaching?

a. Yes
b. No
c. Don’t know

16. What is your definition of interactive teaching and learning?

_____

_____

_____

8.5: Survey Questions for Students

1. What type of course are you doing in XXXXXX?
    a. Full time
    b. Part time

2. What age category do you fall into?
    a. 18-23
    b. 23-30
    c. 31-45
    d. 45-65
    e. 65+

3. Are you:
    a. Male
    b. Female
    c. Prefer not to say

4. What year of study are you in?
    a. 1st
    b. 2nd
    c. 3rd
    d. 4th
    e. Masters
    f. PhD

5. Typically, how are your lectures delivered? (Select all that apply)
    a. Prezi
    b. PowerPoint Presentation
    c. Written Notes
    d. Flipped learning
    e. Watching videos and taking quizzes
    f. Other _____

6. Have you heard of any of the following?
    a. Prezi
    b. Quizziz
    c. Mentimenter
    d. Screencasting

7. Typically, how are you assessed?
    a. PowerPoint Presentation
    b. Essay
    c. Quiz
    d. Poster

e. Other _____

8. Would you be more likely to attend a lecture where a more interactive means of delivery was utilised?
    a. Yes
    b. No

9. Do you think that you would be more engaged in class if lectures were more interactive?
    a. Yes
    b. No
    c. Don’t know

8.6 : Lecturer Answers to “Other” Questions

8.6.1 : Question 5: Why do you use PowerPoint Presentations?

• They are what I am used to x 6

• Ease of use x 13

• Suits my module x 9

• I feel they are a good way of displaying information x 28

• Not applicable x 4

•

• Often learners do not have a book and the PowerPoints act as revision notes for them

• Use them to augment peer discussion and with videos embedded

• Best way for students to print out notes for studying/revision

• I use them mostly as back up on Blackboard and use a white board in class for teaching

• Can be accessed in all computers and doesn't rely on internet, can be interactive and visually engaging!

• Other options are not well supported.

• Efficient format for theory topics with pictures, videos, web links etc.

• Not particularly good for delivery, used as a repository of lecture material

• Students expect notes. They also organise my lecture delivery. My lectures are a summary of the directed reading and do not replace the directed reading.

• I use them for many of the reasons above but they are also a good way of collating varied ranges of material for learners. They can easily access the PP via blackboard again outside of class.

• I use PPT not only PPT - it is used to summarise and present

• I use it for some of my modules but not all as I don't think it is the most effective means of engaging with students

• One of several tools. Used correctly, it — or a PDF — can be an effective method of communication. It is quick, simple and can help reinforce key points.

8.6.2 : Question 7: Why do you ask students to take down notes?

• Its suits my module x 8

• Saves on printing x 1

• It is what I am used to x 0

• I do not use Blackboard x 0

• It is easier for students to make their own notes x 9

• Not applicable x 11

• Keep focus/engage x 6

• Understand/learn better x 10

•

• If in a lecture, I'd rather students listen, take occasional notes of interesting things that I say or mention

• Used a different stages of the class.

• For calculation explanations

• For mathematical type subjects this works effectively as students work though the content as they write

• Allows them to write a concept in their own words

• They wouldn't do it! Rather take a photo

• The notes I ask them to take are regarding the discussion not transcribing content

• Ask them to take supplementary notes, core lecture notes available on blackboard

• Process and develop thoughts on content.

• If we are doing a class problem in the room, if there is something I want to discuss that is not on the slide

• To break up the tedium, to get them to come to class, PowerPoints skeleton upon which class lecture is based. Not all detail is on slides.

• Up to them

• Only in very specific cases. Not always

• I do not ask students to take down notes. I do inform them that they are welcome to take notes, however it is all uploaded on blackboard. I would encourage them to listen and ask questions in class more instead.

• I supply notes but supplement with worked examples i.e. calculations etc. on whiteboard in class which they will take down

• To support the information given on Blackboard or when I do not use Blackboard

8.6.3 : Question 9: Why do you use videos and related quizzes?

• Ease of use x 4

• Reusable Learning Object x 11

• Suits my module x 18

• Increased student engagement x 38

• Not applicable x 2

•

• There is some very good video related material for the modules I teach

• Can show subject matter in a different perspective than my lecture

• Good teaching aid. Students like being able to pause etc.

• Very often a video can show how the theory covered looks in real life which provides a greater depth of learning

• I rarely use videos and never have used quizzes

8.6.4 : Question 11: Why do you use flipped learning?

• Increased student engagement x 20

• Lectures progress more smoothly

• Difficult topics are highlighted at an early stage x 8

• Encourages active learning x 1

• Students come prepared/take charge of learning x 2

• Not applicable x 22

•

• Students love videos as they support self-paced learning. Increased student engagement, retention and attainment. Flipped transformed my teaching practice.

• It allows the learners to share with each other in a collaborative way.

• It’s essential to the course learning that the student follows their own trajectory

• only 1 hour contact time with fourth year subject - a lot of independent reading expected/needed

• Students have some knowledge of the subject. Saves time as we have so much content to cover

• A new concept of teaching strategy not tested

• I don't know what flipped learning is

• I intend to start using this.

• Not sure if students would read enough in advance

• Intend to this coming year. Particularly when moving more to an online T&L situation, providing material before doing live online sessions will ensure the time is better spent.

8.6.5 : Question 14: What would encourage you to try more interactive methods of teaching and learning?

• More access to labs x 7

• Training x 27

• I am happy with my current teaching methods x 4

• Less timetabled hours x 14

• Seeing student engagement increase x 27

•

• The collaboration with colleagues who already use it has given me confidence to engage in differing ways

• Time to prepare and test

• Lectures are geared to learning cohort, some cohorts like change other see it as challenging. Depends on class to class

• A teaching strategy within XXXXXX that encourages and promotes teaching excellence andinnovation in teaching practice and is informed by pedagogic research and best practice internationally.

• Smaller classes and tutorials

• I am happy with my current teaching methods. Yet one can always improve and embrace more technology if supported along the way by providing useful workshops.

8.6.6 : Question 15: Typically, how do you assess students?

• PowerPoint Presentation x 17

• Essay x 32

• Quiz x 14

• Poster x 15

• Projects x 5

• Written exam x 8

• Lab work x 2

• Portfolios x 3

• Practicals x 5

•

• OSCEs

• Peer assessment

• Reflective diaries

• Very much dependent on the module LO's

• Through work books and manuals

• Socrative

• Calculation example

• Problem based learning questions or scenarios. Online short questions also

• Questions in class

• pecha kucha

• Demonstration of artefact produced

• Reports and case study

• Design projects. Deliverables vary but normally a design process folder and creative outcomes. Vary greatly.

• I use a variety of assessment techniques and regimes. This can include code assignments, problem solving, technical reports, research papers, examinations et cetera.

• Tests online Simulated legal proceedings

8.6.7 : Lecturer Definitions of interactive teaching and learning:

- Two way dialogue x 2
- Is a way of engaging students with each other and that students are involved in the learning process
- The learner is an active participant in the learning process and technology is used where appropriate to benefit the class
- It involves independent learning and active participation by learners in their education and learning.
- Two way communication. Student contributions. Active learning opportunity. Problem based learning. Lecturer support and guidance.
- It facilities the learning process of both learner and tutor by using medium which may allow for better engagement of learning styles (e.g.VAK)

- having a two way communication, engaging the students in a variety of learning techniques, not just lecture/PowerPoint
- Involves active engagement and exchange information between learner and facilitator
- Learning with engagement of both parties.
- Using anything at your disposal to engage students and promote learning.
- Using various tools to help in teaching students using for example online forums
- Learner participation and involvement in the direction of the lesson
- Student engagement and participation
- Getting the students involved
- Interactive teaching is active rather than passive. Two-way rather than a one-way transmission. It engages students with a multitude of methods and mediums.
- I think it is the synergistic effect of the introduction of new material experienced through the lens of the learner's prior relevant knowledge and experiences.
- Getting students to partake in class exercises
- Use of technology in the learning environment.
- Not sure
- Class participation in engaging topics
- On line. Getting students to contribute in class.
- two way communication between lecturer and student
- An environment where teachers actively encourage student participation and interaction in the learning process promoting discussion, collaboration and exploration with and by students.
- Student learning from discussion and doing
- interaction opportunities for students with each other and lecturer during module delivery
- engagement by the students in the process
- Students get involved and participate in class
- NA
- The keyword is "Interactive", having students interact as part of the process
- Practical sessions
- Engaging with students using a variety of mediums which engage the learner and include their contributions for example discussions

- Student led engagement between peer to peer, student and lecturer and student and support staff
- interactive - getting the student more actively involved
- Different methods of engaging students with course content, lecturer and peers
- Involving students in their learning, encouraging talk in class and peer=learning
- Involving learners in the learning process
- Where learners are actively engaged in learning, as opposed to passive learning. Interactive learning more than likely will involve the use of some technology, though not mandatory.
- Helping students to get hands on or minds on and engage with their own learning. Flip the class, interactive quizzes, showing by doing.
- where teaching and learning is an interactive process between students and students and students and teachers
- Sharing with students. Allowing communication between students, lecturers and a computer to be open and easily exchanged
- Student engagement by using a mixture of digital technology /online tools and traditional teaching... student to student learning and lecturer to student teaching
- The teaching and learning of students who are able to freely interact and be more involved with their learning.
- It is all about instructing the students in a way they are actively involved with their learning process.
- Interactive teaching is a means of instructing whereby the lecturer actively involve the students in their learning process by way of regular lecturer- student interaction, student – student interaction/ peer – peer interaction, use of audio-visuals, and hands-on practical demonstrations. The students are constantly encouraged to be active participants in the classroom.
- Actively interacting with the students, doing things hands on, demos etc.
- Interactive...involves student participation via interactive online platforms i.e. in the past have used second life, kahoot etc.
- Using technology in the classroom and during online teaching

8.7 : Student Answers to “Other” Questions

8.7.1 : Question 6: Typically, how are your lectures delivered?

• PowerPoint Presentation x 216
• Prezi x 1
• Printed handouts x 64
• Watching videos and taking quizzes x 36
• Flipped Learning x 7
• Doc Cam x 8
•
• Online x2
• Blackboard x 4
• Zoom x 2
• Hand written notes
• Skype
• Blackboard Collaborate
• Communication
• Classroom
• Whiteboard notes x 2

8.7.2 : Question 8: Typically, how are you assessed?

• PowerPoint Presentation x 86
• Essay x 168
• Quiz x 63
• Poster x 23
•
• MCQ x 2
• Programming CA x 3
• Reports x 2
• Written exams x 17
• Online exam x 4
• Only very occasionally by poster or quiz
• Literature review
• practical assessment x 3

• Project x 2
• ranging from reports to practical builds
• Research papers x 3
• Hand in projects, all assessment based classes
• Weekly logs of online material
• Thesis x 2
• Logging on to college computer and using software to complete exams
• Submitting class logs and through a participation mark for input to discussions
• Reflective journals, engagement in class
• Lab report x 3
• Calculations on paper

8.7.3 : Student Definitions of interactive teaching and learning:

- Connecting with your students and ensuring they understand what is being taught
- Learning that engages with the class and requires active involvement
- The dissemination of information via online applications to ensure continuity of learning.
- Use of computers and devices to work
- Use of online services and computers
- Learning that involves the student rather than just information being thrown at them.
- Both lecturers and students communicating as they would if they were face to face
- Through a technological device
- This is where everyone is included within their own learning.
- Working with fellow classmates and lectures with different methods of media
- Use of technology to enhance the learning process
- Less chalk and talk, more practical and discussion based
- instructing the students in a way they are actively involved with their learning process
- Online learning using applications such as MS Teams
- A place for students to submit work and get teachers feedback
- Getting students involved
- A balance of lecturer interaction as well as the use of the computer labs
- Full interaction and attention from lecturers with each individual whether it be in the classroom or as simple as answering an email from a student.

- Face time with the lecture
- Involving students to bring their own experiences of learning and knowledge into the process
- Using the interactive whiteboards
- That the student engages in active participation with the class and lecturer to optimise their learning
- Teaching and learning using online resources such as Collaborate and MS Teams. Being able to learn and work from home through communication online with lecturers and fellow students.
- Learning from home
- Learning from home
- Involvement between students and lecturers
- Interactive teaching is when the students get to interact and engage with the teacher instead of just sitting and listening and taking notes. E.g. class discussions
- Contact teaching either in the classroom in close proximity or teaching and learning online
- The teacher and student engaging with course material in an online environment like blackboard collaborate with module resources and material provided through a platform like blackboard
- Self-directed learning
- Requiring interaction between student and teacher
- Where both teacher and student are communicating to each other
- Where both teacher and student are communicating to each other
- A method of learning where both parties - the student and lecturer/teacher - are fully engaged and in contact with regards to what is being taught.
- Being able to take part in practical learning when possible and being able to ask questions
- The ability to interact with a lecturer in order to obtain knowledge
- Limited face to face classroom teaching. Most independent work
- Where more people are involved , learning with others as opposed to learning by yourself
- Doing more than just rhyming off notes or death by PowerPoint
- Learning through devices such as tablets, computers, webinars

- It's hands on approach where students are engaged by critical thinking and problem solving skills
- Use of media and technology for teaching and student assessment.
- Learning through online resources
- Learning between the class and teacher where everyone is welcome to share and input to the class
- constant communication between the student and lecturer identifying problems within the learning and making sure there is a clear understanding making sure the student benefits greatly form the teaching. Including a regular quiz to see what progress is being made and feedback from lecturer with constructive and help criticism
- Using various methods to teach subjects
- Learning that involves a back and forth, not one way lecturing or just writing essays
- Where students and teachers are both involved in learning
- When students are actively involved in learning
- Using online resources to distribute learning material and perform CA and testing of students
- Using technology resources such as videos power points group work and practices to i HSBC’s learning
- Actively trying to teach students
- Learning by doing as well as reading
- A student and teacher engaging in a discussion.
- Fun and enjoyable way of learning
- PowerPoint presentations, online resources such as blackboard
- Both lecturers and students could have their opinions during class
- Interacting and getting involved in discussions with group and lecturers
- Using resources online such as zoom and skype.
- Use of different teaching aids to maintain engagement between the teacher, the material being taught and the learner.
- Working together to learn
- Everyone working together and to bring their own experience and knowledge
- Students being involved in the learning process
- Interesting and engaging
- Learning from computers & screens

- engagement between lectures and students
- Class based teaching
- Interactive teaching is all about instructing the students in a way they are actively involved with their learning process. Interactive learning is about student driven learning as opposed to teacher driven learning.
- My definition of Interactive teaching and learning is to instruct students through active interactions (teacher-student interactions), by means of audio/video aids.
- Learning something together and getting involved more.
- Online, with participation.
- I would consider a practical class interactive teaching and learning rather than a lecture
- Using technology to enhance classroom learning
- Lectures delivered online via zoom or through computer application such as PowerPoint
- Teaching and learning through actions and discussion
- Education which incorporates technology and social media
- Learning/teaching using technology sources
- Allowing students to actively participate instead of listening to a lecturer talk for an hour
- Any method that involves active student participation as opposed to traditional lectures
- Participating in practical assessments, talking to lecturers, using touch screen technology etc.
- Learning between the class and teacher where everyone is welcome to share and input to the class
- Face to face learning
- Teachers and students working together in group work
- Teaching through an online resource
- Hearing out perspectives from students
- Group work, role play, Q&A session
- In my opinion, interactive teaching and learning is environment is one where involvement and participation of students are encourage, using a variety of means.
- Student engaging with material and submitting feedback to lecturer. And vice versa
- Interacting with someone to aid learning
- The use of software and the internet to learn.

- Being engaged in lectures and keeping up with notes alongside communicating with lecturers
- Students taking an active role in lectures rather than a passive
- Everything being explained well, questions to the class and exercises
- Working with people and machines.
- Interactive teaching is when the students get to interact and engage with the teacher instead of just sitting and listening and taking notes. E.g. class discussions
- Full interaction and attention from lecturers with each individual whether it be in the classroom or as simple as answering an email from a student.
- Where students and teachers are both involved in learning
- Sitting at a desk, reading a book, journal or article. Maybe following it up with an exercise or tutorial.
- Engaging with lectures
- nothing
- When the lecturer thoroughly engages with the students, placing their best efforts on explaining the topic at hand with use of quizzes, objects etc. rather than simply reading from a Power point.
- Getting feedback on modules, having discussions on subjects with the class and lecturer
- Unsure
- Using computers and other sources of technology to give information
- Encouraging students to interact with each other, lecturer with the onus on student led education through digital technology.
- Online courses
- Joint efforts of communications and co-operation
- Lectures getting the class involved in the lecture
- hands on approach
- Co-operative student/teacher communications to come to understanding about specific topics.
- Teaching delivered by the lecturers, an active learning environment for the students, via class notes, lectures or practicals. This can be through various platforms
- Using technology to help learn in the classroom and at home
- Using online resources to learn information and interact with lecturers
- Getting involved either in lecture hall or online

- Use of online services and computers
- Not sure
- Online classes or notes put up often
- learning through technology
- In class discussions, questions, opinions etc.
- Everyone working together and to bring their own experience and knowledge
- Allowing everyone to have access to materials and learning through their preferred learning methods
- Where the student and teacher have equal roles in the classroom
- The interactive teaching and learning is based on the delivery of the lecturer while having some MCQ questions online which keeps students engage and at the same time you understand their learning graph.
- None
- Using technology for a more practical, in-depth understanding
- Effective engagement between the teacher/lecturer and the students.
- Engaging all students with stimulating resources.
- Class discussion and practicals
- Interactive would involve anything other than rote learning or simply listening to lectures. Students would engage with the teachers through discussion or through practical application of learning material.
- Taking a practical/on hands approach to understanding any given subject
- Engaging with lectures
- Using models or 3D objects when teaching
- Involving the students to participate
- Students asking questions and lectures giving them the answers
- Herri up in front of the class and engaging with them
- Being able to participate in groups for peer learning without being singled out by direct questions
- Being able to participate in groups for peer learning without being singled out by direct questions
- Good communication between students and lectures
- Using online resources to learn information and interact with lecturers

- An application which allows lecturers and students to interact broadening the learning experience
- where students are actively taking part in learning with their teachers/lecturers
- Two way
- Interactive learning is when a student interacts with the lecture and environment for the process of learning
- Online studies
- The use of technology to keep students as informed as possible
- Lecturer asking students questions or ideas
- Using tech
- as student being able to actively participate in the process of learning
- Teachers helping students learn by talking to them and providing help to them personally.
- Communication
- collaboration with others to learn by doing
- Bring in physical examples of something, gives examples from a work place to solve etc.
- Leaning and teaching over the internet
- Real world, hands-on learning that uses digital technology and virtual communication to engage with students
- Lessons delivered through online resources and media
- Using technology to enhance teaching and learning
- Being able to connect with learning and being involved
- Practical based classes and projects.
- Being able to communicate with lectures and students during the learning session
- Media
- Teaching and learning through online lessons, discussion boards and Teams
- Active involvement in class
- the student has choices that are interactive
- the connection between students and teachers
- Listening to the lecture and asking questions.

- It is when students are encouraged to participate in class teachings and the teacher provides feedback or allows the students to engage in the class. E.g. in demonstrations etc.
- Leaning through blackboard ultra, Microsoft teams and zoom
- being actively involved in your learning process through group work or teacher- student learning
- Using technology resources such as videos power points group work and practices to i HSBC's learning
- A mix of both practical and theory. Getting feedback from students and lectures.
- Students and lectures who are more involved in classroom activity
- Teachers helping students learn by talking to them and providing help to them personally.
- Being able to connect with learning and being involved
- Students and lectures who are more involved in classroom activity
- E-learning
- Working with fellow classmates and lectures with different methods of media
- Practical work
- When a lecture makes sure the class is involved in a lesson
- Taking part in online/class room lectures, using learning tools like blackboard and communicating with tutors and fellow students directly via email, social media and platforms
- Using technology to carry out lessons
- instructor led teaching
- Hands on learning, using what you're being taught in real life application
- Full participation in lectures and practical, with interaction between lecturer and students.
- Communication
- Online interface learning
- Getting students involved during the lectures. Having discussions and listening to the students opinions.
- A teaching method where lecturers and students engage verbally and visually.
- Ongoing conversation between lecturer/tutor and students, using different methods of delivery

- Working simultaneously with a peer for hands on experience
- The use of internet technology in an educational format
- Use of online services and computers
- Using technology to bring a new meaning to subjects
- Blackboard/ discussion groups via blackboard
- I am not sure
- A hands on approach, where students can engage with their teacher
- Staying connected with students to help them as much as possible
- Staying connected with students to help them as much as possible
- Engaging all students with stimulating resources.
- Class examples, pinpointing areas that aren't understood or difficult and discuss for better understanding
- Student centred, using innovative methodologies.
- Helping students with learning as well as trying to teach
- Using technology based teaching
- Actively involving students in the learning process to enhance retention of knowledge
- Learning between the teacher and the student
- Being able to talk and interact with both the lecturer and work with other class mates
- A hands on way of learning new material
- Engaging with class rather than reading from power points
- Watching videos or completing quizzes to help us to remember course content in more inclusive and fun methods
- I don't know
- Having all class members involved in a way to not just learn from the lecturer but also each other
- Being able to talk and interact with both the lecturer and work with other class mates
- Discussing different scenarios and group work
- Interactive teaching involves the use of different and interesting ways to engage students in class. This allows the student to be more active in their learning and leads to a better understanding of the subject being taught.
- Including students in lectures rather than just reading from a PowerPoint
- Learning between the teacher and the student

- Learning and teaching from using technology
- When the classes are more practical and the lectures engage with the students more
- Students engaging with the teacher and carrying out tasks in groups and team work , interacting with everyone in the class
- When the classes are more practical and the lectures engage with the students more
- Teachers considering and respecting the student's preferences in learning and adjusting to their needs.
- Learning through active involvement or teaching using active methods that entail the students engaging both mentally and physically in the lesson
- Where everyone lecturer and students engage with each other
- A more hands on approach to teaching and learning
- Teacher and student talking to each other and discussing topics/questions. Everyone in the class talking and not just the teacher
- Where the student takes an active part in the process of teaching and learning.

8.8: Information Sheet for Heads of Department

Title: *"An investigation into interactive teaching methods and their impact on student engagement in a third level institute of technology."*

Who Am I?

My name is Máiréad Boyce; I am undertaking the MA in Learning and Teaching at LYIT. I am also an Assistant Lecturer on the Veterinary Nursing programme in the Department of Science and have been employed XXXXXX since 2017. Prior to this, I worked full time in a Veterinary clinic.

What is the Research About?

The objectives of this research are:

1. to determine whether students are more likely to attend a class where the lecturer has moved away from the traditional PowerPoint Presentation.
2. to ascertain whether students are more interested in the subject matter as a result.
3. to discover if students feel they could learn more deeply.
4. to establish whether students are enjoying their learning experience.

Why Am I Doing the Research?

This research is intended to provide an insight into the effectiveness of using interactive and/or creative means of delivering content to students, using quizzes on platforms such as Mentimeter, for example. The researcher would like to determine the role that technology has in the classroom in XXXXXX; to find out whether the technology we have at our fingertips is beingutilised, or are lecturers using the same traditional techniques all the time.

After analysis, it is hoped that this study will provide important information for educators regarding the planning for and implementation of technology in their lectures going forward. If feasible, this research could be used to inform any review of how courses are delivered within XXXXXX.

How Will I Do the Research?

The research will be conducted online through the survey website, Google Forms. When a student opens the survey, the webpage will highlight their rights in relation to GDPR, withdrawal from the survey and that no personal data is being requested. The webpage will also indicate to students what the research is about. Students will be made aware that their consent is assumed once they complete the survey. As the data is anonymous, there is no option to withdraw after the point of submission. There will be no direct contact made with any students and therefore there will be no onus on students to undertake the survey.

Rights

Permission for students to be involved in this research will be sought from the Heads of Department and the students themselves. There will be no penalty encountered if either the student or Heads of Department withdraw from the study. Students may withdraw from the study up to the point of return of their completed questionnaire. Heads of Department may withdraw their consent up to the point of the survey being made available to students.

The data generated by this study will be used in my dissertation for a Masters of Art in Learning and Teaching, and may also be used in academic papers, journal articles and in future research studies. The information gathered will **not** be used in a way that any student, School or Department could be identified. Students' names will not be requested so therefore cannot be used in the dissertation, reports, articles or presentations emerging from this research.

All data collected will be kept securely on my work computer. Data will be encrypted and the laptop will require a password to gain entry. All collected data will be stored in the School of Business, compliant with LYIT Guidelines for data protection and storage. It will be stored for a maximum of five years after the completion of the research. Thereafter, it will be destroyed in accordance with LYIT policy.

Further Details

For more information please contact me at: XXXXXX or my supervisor: XXXXXX

8.9: Consent Form for Heads of Department for access to their students

Title: "An investigation into interactive teaching methods and their impact on student engagement in a third level institute of technology."

This study is intended to provide an insight into the effectiveness of using interactive and/or creative means of delivering content to students, using quizzes on platforms such as Mentimeter, for example.

Participation in the research is voluntary and students' involvement will only be allowed with your agreement. Student consent will also be required. Only adult students aged 18 or over will be allowed to take part.

Non-participation in the study will have no adverse impact on any of your future contact with myself, the School of Business or staff involved in the MALT programme at LYIT.

Please tick:

I have read the information sheet which explains the research study [ ]

I understand that all the information that students give will be kept strictly confidential and that students' name(s) will not be asked for, nor included in any reports [ ]

I understand that participation of students within my department is voluntary and that I am free to withdraw my consent up to the point of data analysis (April 2020) [ ]

I understand that this research will be published as a dissertation and possibly in academic journals. The research may also be presented at conferences and seminars [ ]

Please sign below.

School/Department name (in CAPITALS): _____

Your name (in CAPITALS): _____

Signature of Head of School/ Department: _____

Date: _____

I will collect this form… Thank you.