How Adaptable are National College of Ireland Students to Remote Learning?

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Abstract

As Covid-19 forced 3rd level education to close, it left institutions with the challenge of adapting to remote learning. As time progressed, uncertainty arose about when normality would return. To ensure the optimal outcome of learning for students, the study focuses on four main areas of remote learning. These areas are technological infrastructure, user-readiness, assessment and mental health. By assessing these four main topics, the researcher aims to identify how adaptable the National College of Ireland students are to remote learning. This information aims to identify recommendations on students support from government assistance, mental health and shared equity in the decision making of their assessment. From the findings on literature and students feedback through a quantitative research study, it can also be identified the flexibility of students in the future to possibly transition to a blended learning approach.

The findings from the study outline that students are satisfied with the assessment options but feel more could be done to ensure a better outcome for themselves. Although students managed their stressed accordingly, students feel more could be done to ensure their mental health is not being affected by academic distress. Student also find that their user-readiness is sufficient, although more personal training on hardware and software could be done to close the gap on potential errors within their field. The final topic of technological infrastructure finds that more could be done from the colleges end to ensure there is a sufficient learning outcome for students.

Table of Contents

Chapter 1 - Introduction

1.1 Introduction Background

Traditional learning has been relatively non-existent among Irish 3rd level students since the beginning of the Covid-19 pandemic. Traditional learning through on campus routines ceased due to restrictions imposed by the Irish government. As the quick movement to remote learning took place, lecturers, students and other stakeholders within the education system saw changes to how they would contribute to students pathways. As time progressed, the early implementation of remote learning was a trial run of the future year to come. The first summer of the Covid-19 pandemic allowed planning into how a full academic year would be sustainable over current Covid-19 guidelines.

The first term of the Covid-19 pandemic concluded with confusion as to how students would operate when 3rd level institutions would reopen in September. International students and local students were unsure about their travel and accommodation. There was no sustainable way for students to plan for the academic year. Government regulation and 3rd level institutions had to make a decision that would benefit students in advance. A decision was made to have students operate remotely. This decision allowed students to make plans for their academic year. As students struggle financially, this allowed them to know their flexibility in advance. Although the Covid-19 pandemic has provided a lot of uncertainty for many industries, a set decision on the setup for students through their academic year would ease pressure that would have otherwise enhanced the stress on students.

As students began their first academic year through Covid-19 and progressed through to the end of their terms, key aspects of the remote learning setup could now be assessed. User readiness, technological infrastructure, assessment and mental health are the main aspects to be reviewed through this research. User readiness is an understanding between the user and their interface. This is user based and how well they can operate their technology to ensure their best outcome through learning. Technological infrastructure is the technology the user has to engage with their education. This would be down to their hardware and software. The user would be looking to have the optimal source of infrastructure to ensure the best outcome for their learning. Assessment and mental health can link together and show correlation to the students output and performance. The assessment topic is based on how the students feel they were affected by the transition to remote learning. The effect of remote learning on the students grades and stress can show correlation to the students grades. The final aspect of mental health examines the personal effect on students and whether they experienced a change in stress levels or mental health issues from the switch to remote learning. Changes in social living and grade performance can actively effect how a student feels and engages to their course.

1.2 Research Objective

As the research aims to look at the effects of remote learning on students and their experience with this new way of learning for many students. The aim is to understand how adaptable students are to changes in their learning routines. The change from social, in-person learning to becoming completely remote may have positive and negative consequence's on students. As the research progresses, it is aimed that there will be a conclusive answer to how adaptable National College of Ireland students were to remote learning. On the basis of their adaptability to this way of learning, it would be asked whether they would continue with a possible blended learning experience to ensure the best outcome for their own learning routine. By allowing choice to the student, it would be an interesting area to explore how they feel remote learning effected to them and if there is conclusive data that can allow calls for a blended learning experience.

The research aims to observe possible correlations with previous literature already in the field of remote learning and also identify possible correlations of data that may provide insight as to why some students experience and feel certain outcomes. By assessing technological infrastructure, user-readiness, mental health and assessment. The study aims to identify areas within each topic that may affect eachother. The research on technological infrastructure aims to identify areas with software and hardware that the student had issues with. User-readiness aims to identify absences in training and experience. Assessment aims to identify the transition to remote learning and possible outcomes that would help students find their optimal utility when learning and being assessed. Finally, mental health will be assessed as stress related outcomes relative to the previous three topics. The aim is to identify whether remote learning and external aspects that can influence the students outcome. By identifying possible outcomes, this data can be presented as possible variables

1.3 Structure of Thesis

In chapter one. The introduction is divided into three parts. The introduction as to why this study is being conducted is provided. This is to show the reader the events in the world that created a space in the literature field to conduct a review of possible material. The second part of chapter one is to provide insight of what the researcher is aiming to find. The research aims to find material and data that will give insight to how adaptable National College of Ireland students are to remote learning. The third part of chapter one is providing insight as to how the thesis will be outlaid and portrayed to the reader. This area is to give the reader quick insight into possible areas they may choose to address.

Chapter two outlines the literature within the field. The literature aims to identify findings from literature based on technological infrastructure, user-readiness, mental health and assessment through remote learning. The literature will aim to assess the adaptability of students within their own respective institutions and what limitations and findings there were.

Chapter three outlines the methodology of the thesis. The research used is a quantitative approach by issuing a survey to students within the National College of Ireland. The methodology provides clear detail as to the decision behind each question. The methodology provides aspects of limitations and ethical considerations when conducting the study.

Chapter four outlines the research question and possible sub-categories that the researcher intends to find data on. The research question outlays the hypothesis of the study to give clear indication on the direction of the study.

Chapter five provides the results of the research outlined under its four main headings, the questions are closely aligned with the four topics. This section identifies areas possible correlations based on the demographic background of the students and their answers to questions that could have been impacted from previous answers.

Chapter six is a discussion based on all the relevant information. This section links the literature and findings together. This allows the reader to gain an overview of the findings and literature. This section will discuss possible contradictions or similar data found between both.

Chapter seven concludes the data and provides a strong argument as to whether National College of Ireland students are adaptable to remote learning.

Chapter 2 - Literature Review

2.1 Introduction

Traditional learning through lecture halls have ceased within NCI since the start of the Covid-19 pandemic. Students, lecturers and stakeholders within the college have had to adapt to new ways of learning and engaging with their course content. Through previous literature we aim to identify key outcomes that have been found with the new alternatives of learning. By assessing key areas within the field of remote learning, there will be an observation of the possible strengths and weaknesses of transitioning to remote learning.

While the aim is to identify through present literature, what has or has not worked with remote learning. There can be an idea of optimism with a potential for future engagement of traditional learning and remote learning. By finding the core aspects of both, remote learning and traditional learning. It can be identified which help with engagement, grading and the standard of coursework within the college. The aim of using present literature to identify the attributes that would create a successful blended approach to ensure students have an optimal outcome.

2.2 Technological Infrastructure

Technological infrastructure is the main access point to education and literature within the Covid-19 pandemic. Without this infrastructure, it would be ineffective for students and lecturers to communicate through social channels in order to achieve their objectives. While looking at technological infrastructure, the infrastructure present at the start of the Covid-19 pandemic, the infrastructure progression throughout the Covid-19 pandemic and the future technology being implemented within the near future. By assessing these types of infrastructure throughout the transition period, it can be assessed as to what support is available for a future blended learning program.

Wahab Ali conducted a paper based on current remote learning through the Covid-19 pandemic. The aim of the study was to examine how teaching and learning can still continue through unprecedented times. Through analysing the literature it was found that the topic of infrastructure support and staff readiness were key themes within the study. Infrastructure must be established to offer online learning on a large scale, it must be effective with the correct ICT support (Ali, 2020). The infrastructure needed within the support field is based off of the learner-teacher interaction (Kwon, et al., 2020). While it is sustainable to engage with remote learning by the forms of managing online sessions, slide based teaching sessions and remote lecture broadcasts, this form of learning does not fully grab a hold of student engaging with practical degree (Kwon, et al., 2020). Although it seems as though the technological infrastructure available is accessible to students, it is thought that the students do not engage enough with the material and coursework. This information provides the study insight that technological infrastructure is not the only theme that contributes to the students attention and information consumption.

The World Bank claims that students may not have the internet capacity to be able to engage effectively with online learning. Thus having issues accessing lectures (World Bank, 2020). It has been identified that there are two forms of remote learning, synchronous and asynchronous. The basis of interaction and engaging with the teacher-learner relationship through synchronous learning. Asynchronous learning allows for same time learning without user interaction. The types of learning was aimed towards students satisfaction, rather than students grades (Janet, et al., 2009). When assessing the information provided between the two points, users not being able to fully engage and the infrastructure being provided across two platforms, there could be a correlation between which platform is being used, and the level of engagement. As students engage with their course content with synchronous and asynchronous learning, there could be clear differences in the levels of learning that the student consumes.

Recent studies within education have seen the platform that students use for technology change. As technological infrastructure increases, the accessibility to information improves. The progression of technological infrastructure creates a mobile platform. The use of technology from any location with reasonable access to lectures material and information creates a new environment of learning (Bernacki, et al., 2020). As the progression from pre-Covid technology advanced to new levels shown today, there is still more to learn when dealing within a student's atmosphere. Technology within the education market was kept close to the institution. Technology being used within the industry could be seen as an orbit. The students engaged within a system that revolved around being present with their institution. The effect mobile technology has on the system, is that it allows the student to engage with respect to their own day to day life. The progression within the industry allows for students to engage with

their education practices on different levels. The reduced time with travel, social engagement and monetary costs associated with being present at an institution are removed due to the progression in technology infrastructure (Stebbings, et al., 2021). As technology continues to progress within the field of education, this can result in a possible change to student life. A mobile and active way to stay engaged with course material, while also not being present within a traditional environment.

The literature examined in the text above displays the research conducted in the field of remote learning. The theme of technological infrastructure is a key point within remote learning. The infrastructure is the ability to connect and ensure learning is still a process that can be carried out remotely. The sense of satisfaction the student earns from remote learning is a specific outcome this study will look towards. As the literature progresses, the key points identified with technological infrastructure move towards user readiness.

2.3 User Readiness

Remote learning was forced upon many educational institutions. Traditional learning comes with years of feedback and success. Remote learning does not come with this privilege (Shultz & DeMers, 2020). Remote learning lacks the structure and experience in creating an in-depth learning experience (Shultz & DeMers, 2020). Many lessons are short-coming with the preparation and delivery to engage effectively with the learner (Ali, 2020). A reference is made to the world bank, staff must be trained and supported to ensure there is an effective outcome. Ensuring user readiness, the staff are able to engage with the technological infrastructure and support the online learning world (World Bank, 2020) (Ali, 2020). As the literature identifies areas where institutions were not effectively equipped for the quick jump to remote learning, many had to do so without choice. The desire to have a pre-planned system to effectively change over learning material was not available. A look at the world bank shows the preparedness for different outcomes. Identifying that the institutions themselves should have been well equipped and trained to handle the crossover to a remote environment seems realistic. Although Covid-19 is blamed for the transition to the remote environment, many other exogenous shocks could have also played a part in creating this virtual atmosphere.

User readiness among students today has shown students tend to have a stronger bond with technology (Ali, 2018). The students are more aware of the usability features they are engaging with. This is because this generation engage actively with smartphones and other smart devices which allow them to engage with the software systems that are being implemented into education (Jesse, 2015). Although students are more aware of the usability features associated with software, students engaging with remote learning are troubled hardware compatibility that may cause issues. User Readiness for students is active within their time-management, assessment procedure and social life aspect's. A study conducted within Indonesia found that students felt an overload with assignments and found time management to be an issue. Although their learning was seen as flexible, the amount of continuous assessment was a strain and hard to manage compared to the structured, traditional system (Rahiem, 2020). The information provided through literature based on students outcome relative to their user readiness focuses on students who are already self-trained with software features. The use of universal features across applications and web services helps students who engage actively within social platforms. As the literature is assessed, it is found that students have a harder time engaging with the hardware side of technology. The readiness to ensure the platform the student is engaging with is fully active seems to be an issue among students. These complications lead to having an effect on their time-management, assessment preparedness and other aspects of their learning path. A solution of one hardware to use for all does not take into account income constraints and the access to the supply on the market. Students should become more equipped to and take time to learn how to use their technology. Technology is their main tool.

The theme of user readiness within the remote learning category is still in early development. Through looking at literature based on students readiness and lecturer readiness, there are clear findings that training and structure is needed to ensure there is an optimal outcome within the industry. The findings established so far have been the need for technological systems, the teachers training and support and the students time management and assessment. The findings found based on the literature creates the question in a post-Covid-19 era; Would students be able to engage within a blended learning programme?

2.4 Assessment

The structure of online assessment may be beneficial to some and detrimental to others. With Covid-19 changing the way educational assessment is processed, it should be taken into account that the main objective from the topic is achieved. The style of assessment through a traditional learning platform and a remote learning platform have different styles of assessment. While traditional learning would cater towards learning throughout the course content, remote learning assessment caters towards learning through assessment. For future learning platforms, a successful integration of both could see students accomplish their degree with more knowledge on the core material that is needed.

Through the literature assessed, there are key rules that provide a comfortable assessment experience for students. These examples are as followed, assessment should have clarity and be driven by the learning objectives, learning should be lead with equity, the inequalities that students obtain should be identified and assisted, students should not be judged for not using a camera or having the ability to log on at desired times due their personal background, students should also be involved within the experience, their opinion is what matters most, the right for a fair and equal exam, having the transparency to engage with the workload that is being given to them with a fair right to question if this is accessible (Jankowsku, 2020). These rules identify what is important to a student and how a student feels towards their learning experience. Multiple of these rules indicate towards a student's feelings. The literature identifies that a student needs to feel welcomed to the content. In a social environment, connecting with people a student may never meet or interact with outside this virtual setting, students want to feel accepted and encouraged to learn equally. These rules encourage a student friendly environment for a build up to their assessment and how the assessment should be portrayed.

Based off of a report by Loton, a study was conducted as a natural experiment based on student satisfaction and marks based through remote learning. The results showed that there was no result in major decrement in student satisfaction. The report showed there were no highly dissatisfied students through the testing (Loton, et al., 2020). The outcome of this experiment conducted research pre-COVID-19. The outcome showed, while a planned remote learning experience didn't pose a threat to the students satisfaction and performance, there is a gap still open to be studied. The gap that has been found by the researcher to be commonly not research is the topic of mixed learning. Studies have shown different types of assessment through remote learning and traditional learning. A mix of both and choice for student satisfaction could implement a new horizon to get the optimal performance from students. As student often worry about their performance as a key indicator of stress, the Loton study provides us with information that the stress and effect on mental health may be unjustified.

2.5 Mental Health

A common theme found within the research of remote learning is the effect on mental health. A study conducted in an Ecuadorian high-school found that 16% of students have mental health scores that indicate depression (Asanov, et al., 2020). A contradiction to this study would be from a study conducted in Japan. This study found students who started college with online learning has a lower high-risk ratio. The research also found that the depression level in 2020 was lower than in 2019 (Horita, et al., 2021). The common factor among both studies was that students felt high distress from their academic work when engaging with remote working. As most students suffer from distress from their academic work (Morgan, 2020), many are affected by the lack of social connection (Chen, et al., 2020).

The adaptation to a Covid learning environment has led to new studying conditions for students. Students engaging on campus would be seen as more active and contributing to their physical health. The difference when students are no longer on a campus environment is that their habits change. Students who study from home or within their own personal living space are confined to smaller areas to study. Habits such as sedentary behaviour occurs. The issue among this, is that it was found that there is a positive relationship between sedentary behaviour and perceived stress (Savage, et al., 2020).

A study conducted outlines the effects of Covid-19 and restrictions reducing students access to mental health services. Demand for in-person counselling services meant that students had to find an alternative to ensure their mental health needs were being met. Alternatively, the college services had to enhance their care and health models to keep up to date with students suffering from mental health effects (Lie, et al., 2013). This literature shares insight into the struggles of students with restrictions on socialising, while still carrying the stress caused from transitioning to remote learning.

An Irish study found risks relative to non-attendance and vulnerable groups that would be harmed severely by the effects of educational institutions closing. The stress and mental health effects on students from education are considered a dilemma, when a worldwide pandemic is also added, students are faced with further dilemmas. Students face bereavement, home-life stress and anxiety from lack of social interactions which have a negative effect on their education. These instances show that the build-up of external stress related issues can enhance the mental health effects from the transition to remote learning (Barrett, 2020).

This information shows a negative aspect of remote learning. This gives indication that although remote working comes with benefits, it comes with negatives as well. The balance of mental health in a post-Covid-19 era, where social connections are not regulated, would be more accessible than the present Covid-19 era. Incorporating research into a sustainable system that works effectively for the student and the teacher, the research provided has shown a gap. Mental health is more than the social connection a student gets. The student must also incorporate the feeling of academic distress into how they ensure optimal satisfaction from their learning.

2.6 Conclusion

The information researched above provides a scope towards themes unexplored within a mixed-learning environment. The evidence above provides a clear thematic theme for the researcher to engage with. As information is conducted on present remote learning, the theme of a student's correlates toward their engagement (Memon, et al., 2016). The question concluded from the literature review is; Are National College of Ireland students adaptable to remote learning? While other key areas are addressed through the literature, there is evidence that there are many areas of remote learning that still need to be addressed. The literature provides clear indication that the area of remote learning is new to many within the field of education.

As time moves forward and more literature becomes available on the concept of remote learning, researchers will be able to grab hold of the themes and areas that students are taken advantage of and fall victim to disadvantages. The literature provides key information to be able to conduct a study among National College of Ireland students and understand if the theory is applicable to students within a sub-section of Irish society.

Chapter 3 - Research Question

3.1 Research Question

Through identifying issues within the topic of remote learning, the research question that has been identified is:

How adaptable are National College of Ireland student to remote learning?

H0 – National College of Ireland students are adaptable to remote learning.

or

H1 – National College of Ireland students are not adaptable to remote learning.

The aim of the research question aims to identify key aspects of remote learning that National College of Ireland students can adapt their routines in accordance with. As the primary research question is to identify how adaptable the students are, there are secondary questions and conclusions that can be made on the data being explored. The dependency on the students technological infrastructure, user readiness, mental health and assessment outcomes will provide reasonable understanding on whether National College of Ireland students are adaptable to remote learning.

Through investigating the students relationship with remote learning, there will be exploration as to whether students would wish to continue with remote learning in the future and whether student would be interested in a routine of blended learning. Correlation between students attitudes with remote learning and their travel and accommodation requirements will share insight into whether blended learning would become a feasible option for National College of Ireland students.

Although the research is specifically aimed into understanding how the students adapted to remote learning, the key aspects of the research topic can be explored with the students experience to see what can be changed among these topics. By assessing the literature and results from the survey, the research observes how effective these aspects are within the remote learning experience.

The aims of the research that are also explored are:

1. How effective is the technology that students are using within their remote learning routine?

2. How prepared are the users involved in the remote learning environment?

3. Does remote learning have an effect on the students mental health?

4. Are students affected by remote learning?

5. Would remote learning be a sustainable long term solution for students?

6. Would blended be a reasonable option for students in the future?

The aims outlaid above explore other aspects of remote learning to see where students adapt to the remote learning experience and whether it would be possible for students to fully integrate the concept into their long term education. These aims also give clear understanding to the research question which links the use of technology and the user themselves to correlate a clear learning routine.

Chapter 4 - Research Methodology

4.1 Sample

135 participants were recruited using an online questionnaire. The questionnaire contained questions relative to the person, assessment, mental health, user-readiness and technological infrastructure. Links to the questionnaire were sent out to classes within National College of Ireland. The link was sent out through student mail to all students personal email addresses. A link for the questionnaire was also sent into a group chat on WhatsApp for students taking part in MSc International Business 2020/2021 September intake. The students were able to complete the survey using Google Forms. The age range of the students were 18-60+ with the dominant age group being 18-24 at 35.6%. Of the 135 respondents, 86 female and 49 males completed the survey. Participants were required to answer all questions on their experience with remote learning. Further sampling of the students, which was relevant to their personal data, was whether the students were studying an undergraduate degree or a postgraduate degree. Data that was also needed was to find what the majority of students were studying. Students were required to outline what course they were studying. Students were also required to provide data on what year of college they were in and the number of semesters they have spent doing remote learning. This data allows the research to examine the attitude between students who have only experienced remote learning and students who have experienced remote learning and traditional learning.

4.2 Quantitative Research

The study uses quantitative data by analysing the numbers found from the research survey to describe, predict or control the variable interests. The main aim of using quantitative research is to find the causation between relationships. By finding the causation, the researcher can make predictions and generalize results to wider populations. The researcher aims to find correlations and causations among the data found in the research survey that could give probable reasons for certain outcomes of the study. The researcher will use difference question topics to categorise the areas of interest. By doing so, the researcher will be able to contrast causations and correlations between the different sets of data which will allow for an organised analysis of the data. The numerical data will be presented and displayed through different aspects of the study to ensure that predictions from the data collected can be displayed effectively to ensure the reader obtains the data efficiently.

4.3 Research Procedure

Through examining the literature within this area, there were key areas that were found to understand how adaptable students could be to remote learning. By assessing the literature, it was found that it would be credible to understand how students were affected by the transition through their own personal emotions, the effect on their college performance, the systems being used and how well they could operate these systems. From reviewing this information, it was found it would be best to understand students outlook on remote learning through the four main topics. This topics being technological infrastructure, user-readiness, mental health and assessment.

Technological infrastructure

The literature found relative to technological infrastructure found that it was a key area within remote learning. The infrastructure acts as the ability to be able to connect and ensure the process of learning is being carried out. As students integrate themselves within the technology and fully grasp the potential of their tools, there should be a sense of ease when contributing to the remote learning process. This understanding of remote learning and the impact that technological infrastructure has on it shows the researcher that this is a key area of finding students experience with this topic. The following questions will be outlined as to why they were asked to the sample. This will show insight into why technological infrastructure is an area of interest.

On a scale of 1-5, how user friendly is your online interface for learning? (For example, Moodle.)

The reason why this question is being asked is to understand the key software interface of the students technological infrastructure. The student engages with their online interface on a regular basis with remote learning. As this acts as their hub for education, there is a need to understand how effective this area is for the students. A rating of 1 would be seen as not very user-friendly and a rating of 5 would be see as very user-friendly. The outcome in the results will provide insight into whether students may need their voices heard on why their online interface is not ensuring the optimal outcome for them.

Do you feel the equipment being used by your lecturers is effective?

As students engage with the lecturer through the platform they use, specifically being Microsoft Teams. There are many aspects of the users equipment that must be of high quality to ensure that the learning process is smooth. Microphone quality, Wi-Fi speed, camera quality and computer compatibility are all areas of the user equipment to ensure an optimal outcome. If the lecturers equipment is not sufficient, the learning experience can be hindered. It is important to understand the students outlook on whether their lecturers need investment into their technology to benefit the learning process for the student.

Do you feel there should have been more help from the government to assist students with remote learning?

Traditional learning meant that students could use institute facilities to contribute to their learning outcome. Students technology such as computers, Wi-Fi and other hardware were only needed for low output tasks. As remote learning became the norm, it would be key to

understand if students felt more support was needed. The outcome of this data is that there is an understanding on whether the government needs to implement more supports for students. Financial implications and unemployment relative to the Covid-19 pandemic cause unforeseen forecasting for income constraints. Understanding whether students would need direct subsidies or indirect subsidies would be a key area to be explored if further research into government assistance through remote learning was needed.

Do you have Wi-Fi?

Understanding a student's technological limitations provide understanding into what a student is missing out on by not having access to on campus facilities. The understanding if students do not have Wi-Fi, they must use other sources and variables to connect to their lectures. Whether it be using their mobile data as a hotspot or using public/private services within their local communities. Answers to this data can provide insight into a niche of students that may rely on institute facilities for their benefit in the education system.

If yes, did you encounter any interferences when engaging with the lectures?

This data is relative to students having Wi-Fi. Although students without their own Wi-Fi may experience different kinds of interferences, this question aims to understand if students experienced issues within their own personal setting for remote learning. Interferences are down to network outages, poor connection speeds and possible third party interferences through their network connection. Limitation to this question to be outlined.

Were you affected by third party disruptions?

Understanding whether students had disruptions outside of their main remote learning environment. These are disruptions where the student had no expectancy or control of the disruption. For example, construction work happening close by. This could affect the students attention to their lectures and studying times. Disruptions like this would be unlikely within a traditional learning facility of on campus learning. The unforeseen circumstances that affect a student's learning routine could play a role in how they perform within a module.

User-Readiness

User-readiness is an area within remote learning that is still in early development. The information provided through reviewing the literature found that within this area there are gaps within training. The research questions posed to the students were aimed to help identify if they felt there were training gaps that needed to be resolved. The potential of online tutorials would allow students to use facilities to train on their own time with the infrastructure they are using. The following questions outlined are relative to understanding the students user-readiness and their expectations within their course.

On a scale of 1-5, do you feel you needed tutorials to learn how to use the college services?

An understanding of the students need for a tutorial service on the colleges services was outlined with feedback on a scale of 1-5. This information would provide clear information on

whether students feel they were in need of more technical information on using the institutes services. For example, library services and course homepages could be difficult for students to navigate. Masters students that have changed college to further their education may find the crossover of platforms a new learning curve to their education path. Potential limitations to the data collected relative to this reason.

Did you encounter any errors between your hardware and software?

This question is aimed to understand if there was conflict between software and hardware the student used through their course. Potential errors may occur between the main hardware OS not being compatible with software needed throughout their course. For example, students may have encountered errors between Microsoft Teams and an Apple Mac computer. Other potential errors may have occurred through 3rd party software that a lecturer may have identified as helpful to the course content. The aim of this question is to identify if a large sum of students identified issues among their software and hardware. The information concluded from this can be used to ensure whether more research on device compatibility would be needed when creating a course plan.

On a scale of 1-5, do you think lecturers need more training to guide students to a better learning routine?

As student engagement is key to ensuring an optimal outcome of learning for their own personal benefit, students must also feel the lecturer is providing a high quality of learning. The transition from traditional learning to remote learning completely changes the way in which a lecturer engages with their students. A scale of 1-5 provides insight into how passionate students are about the training gap among lecturers. As the platform the institute uses acts as a stage for the lecturer to teach. Lecturers should be able to provide a clear and thorough classes without the disruption of unknown occurrences through the platform. The question is aimed to understand if students found training gaps that need to be filled.

On scale of 1-5 , would a blended learning routine suit you better? (Option traditional learning and remote learning)

The expenses of travel, accommodation and college lifestyle all contribute to a student's overall experience. Although students may prefer remote learning or traditional learning, an aspect of college lifestyle that could be explored to ensure an optimal outcome for the students would be the potential of a blended learning experiences. The possibility to identify on whether students could choose how they attend their college course and how they can ensure their college lifestyle does not affect their social and leisure past-times. This question is posed to understand if students would be more applicable to this form of learning. While students may not feel they have the technological infrastructure or user-readiness capabilities to engage with remote learning for longer periods of time, the adaptation to a blended learning approach could act as an optimal outcome for students to benefit overall while attending their undergraduate or postgraduate courses.

Assessment

The findings from the literature review on assessment found that students did not find a reduction in satisfaction on their performance with learning. This literature identified this but found that there was still research within the field that needed to be explored. Assessment was explored as a key area under this research to understand the students experiences with remote learning through the National College of Ireland. While understanding that the literature outlined there were different forms of assessment through remote learning, the literature posed insight into what areas of assessment to look at. The main areas of assessment to look at were relative to student satisfaction and their outcome relative to the course content. The following question outlined will be explained to provide insight as to why they were chosen.

Do you feel your grades were affected by the transition to remote learning?

This question is aimed to understand possible correlations between satisfaction of the learning outcome and potential flow with course content. To understand if students were affected positively or negatively could be examined through the satisfaction found by students relative to their answers based on further questions. Remote learning provides a different way of engaging with the course content, without access to exam halls students are limited to how they are assessed. This question is aimed at identifying if students grades were affected based on the transition to remote learning.

On a scale of 1-5, how satisfied were you with the assessment options given throughout your course?

Students may have preferences to how they are assessed. Students may prefer continuous assessment or end of semester exams. When understanding how adaptable the National College of Ireland students are to remote learning, the literature helped the researcher identify the satisfaction from assessment. The researcher observes that the options provided for assessment and the satisfaction from the students can provide correlation on whether the students grades were affected negatively or positively.

On a scale of 1-5, would you consider your assessments to be engaging towards the course content?

For students aiming to grasp a hold of the content they are learning within their course, this question sources satisfaction on whether this expectation is being fulfilled. The student aims to ensure that the module title is aligning with their course content. The module must also provide an understanding to an area within the students expected field of research and learning.

Would you prefer the option of having to do an exam or continuous assessment in the future?

Identifying how students feel towards choice when choosing how they are assessed could give indication on students behaviour relative to remote learning. This question is outlined to find whether students would be open to choosing their assessment options. Students may feel that the changes between traditional learning to remote learning and then back to traditional learning could affect their learning habits and routines. This question aims to identify whether students would be preferable to the option of how they do their assessment.

Mental Health

The literature provided dictates an opinion that remote learning has a negative outcome on the mental health of students. Especially within the Covid-19 era, this data could display an enhanced reflection on the effect on mental health due to all aspects of social life being reduced dramatically. The feeling of academic distress and ensuring an optimal level of satisfaction from the students learning ensures the student does not experience a heightened level of poor mental health. While mental health is a topic that would need to be explored heavily to make sure that a proper hypothesis and correlation can be made, general questions on the students experience with stress and facilities can provide data on how the student felt. This section was kept small to ensure students did not feel uncomfortable with the information they were providing.

On a scale of 1-5, have you adequately managed your stress levels through remote learning?

While the literature identifies that students have a negative effect on their mental health with remote learning, there is an aim to understand whether the students felt stress through their experience with remote learning. Outlining a question on how well students have managed their stress levels would help the researcher identify whether the students suffered mental health issues directly from remote learning.

Do you feel more needs to be done to ensure students are not becoming overwhelmed from exam stress?

This question posed aims to find a correlation between mental health and assessment. Observing whether students feel more needs to be done for their own mental health could lead to possible correlations relative to questions posed in the assessment section. A possible correlation between assessment choice and how overwhelmed students become could lead to a point of research in future. While students may feel more may need to be done to accommodate their mental health, there could be many aspects that affect how a student feels. Many variables could be found if explored more thoroughly.

Would you continue with remote learning in the future if given an option?

Students were given the option of Yes, No and Maybe. The reason for allowing an option of Maybe provides a possible uncertainty for students. Students would need to be aware of the exact circumstances to ensure they are fully committed to choosing whether they take part in remote learning in the future. The aim of this is to understand if the majority of students outweigh possible mental health correlations with possible assessment correlations. An understanding of what students find more important to themselves while engaging with their academic year. This final question provides an understanding on whether student adapted to remote learning.

4.4 Data Collection

The data collected from the research survey was examined and observed to find possible correlations. The data was observed by finding differences and similarities among the four key topics outlined. The research was examined individually and as well as a group. The data was also observed categorically based on the specific topics students studied to find possible sub-categories of behaviour among student groups.

Data was also collected from the literature in the field of research. The use of this data was found using tools such as the National College of Ireland library and Google Scholar. The data was read through thoroughly to obtain a view of the study. This view was then outlaid in the literature review for further discussion in the discussion chapter.

4.5 Ethics

1. Ethical approval was granted from the National College of Ireland Ethics committee before the research was undertaken.

2. The participation of the respondents was subject to consent. Students were informed of the outline of the study. Students were asked to read the outline before taking part in the study.

3. Privacy and anonymity of the respondents was assured. The results of the study were password protected. The data did not take any user information and the only data accessible to the researcher was the answers provided.

4. Students were ensured that their data would be removed at their request at any time.

5. Literature from authors within the field of research were acknowledged using referencing. This was to ensure the fair use of information and provide possible links to the reader when assessing the data.

6. Data was maintained to the highest standard and analysed fairly when analysing the findings with the relevant literature.

7. The use of offensive, discriminatory, or other unacceptable language would be avoided to ensure a respectable reading.

8. Data was collected with adherence to EU GDPR regulation.

4.6 Limitations

Limitations within Technological Infrastructure

This area contributes specifically to a large component of the remote learning platform. Implications can be found under examining specific details of questions more. For example, understanding how the government can provide more assistance to students is a research topic in itself. This area shows the needs and wants of students to ensure an optimal outcome with their technological infrastructure. Although students may feel they require more assistance, the equilibrium point of what is suitable for remote learning would need to be established.

Understanding students infrastructure in their personal environment hub, whether students have access to Wi-Fi and other forms of technology act as possible enhancements and negative externalities to a student's performance. Once again, the research to find how adaptable students are to remote learning does not cover an in-depth understanding as to why students do not have access to these facilities and what is the best outcome to resolve this issue. Although these limitations provide insight into more exploration within the remote learning field, there is still enough data to understand correlations between possible weaknesses in technological infrastructures and other areas of interest.

Limitations within User-Readiness

The limitations posed through user-readiness are identified that further exploration into the topic would be needed to fully address where students find there are specific failings within the area. Understanding the specific failings between hardware and software could be explored in depth to understand why operating systems are not running specific programs. The limitation to this is that the researcher knows the students are having clear errors between their hardware and software, but the researcher cannot identify all aspects of why this is happening.

The second limitation to user-readiness is finding what training gaps need to be filled. Lecturers and students will have clear differences in training gaps that they need to learn to adjust to ensure there is an optimal outcome. While the study finds that there are or are not training gaps, the study does not find clear evidence as to what these training gaps are. The assumption that the training gaps are within the main sources of technological infrastructure when engaging with the institutes infrastructure could be seen as correct, although not enough information is sourced to fully understand where there could be training gaps.

The final limitation to user-readiness is that the approach of blended learning may seem like an optimal source of a learning routine for many students. The limitation to this is identifying why students would specifically choose traditional learning or remote learning. Understanding if students would choose both would be a research question in itself. When addressing this area, more data would need to be collected to understand the technology needed to ensure both forms of learning could be provided to the student and whether blended learning would act as a flexible form of learning for the student or if it would be based on timetable based routines.

Limitations to Assessment

The first limitation to assessment within the research methodology is understanding why students feel their grades were affected if there is no correlation between the satisfaction and engagement to the course content. As the researcher aims to find correlations between the students satisfaction from their assessment and the students observations from the course content, there would be hope that such correlation exists.
The final limitation of the research methodology with assessment is finding out which assessment students would wish to experience in the future. There are many aspects that could affect the students decision on whether they would decide to continue with continuous assessment or exam based assessment. These limitations are whether the student continues with remote learning or traditional learning, another limitation is the learning routine that the student as acquired through a possible mix of remote learning and traditional learning and the final limitation is whether the student would prefer the option of not. The student may choose a blended learning routine and the outcome of assessment may vary depending on the majority decision of students.

Limitations to Mental Health

Limitations to mental health are based on identifying the students stress related to their transition to remote learning. The limitation of this is that the researcher does not know external situations within the students life.

The final limitation to mental health is that data recorded from a student's feelings may be heightened or lowered in times of assessment stress. The student may feel indifferent towards their stress levels dependent on their current situation with their education.

Chapter 5 - Analysis & Findings

5.1 Analysis

Study Intent

The study aims to find how adaptable National College of Ireland students are to remote learning. By researching literature and conducting a quantitative research survey to assess whether students within the National College of Ireland were adaptable to remote learning. The research was based on the findings from technological infrastructure, user readiness, mental health and assessment. By assessing these four categories through the survey, the main four aspects from the literature review could be compared and analysed to find possible correlations among the data. The intent of the research was to find out whether previous literature in this field, had similar indications to the four key aspects.

Description of results write-up

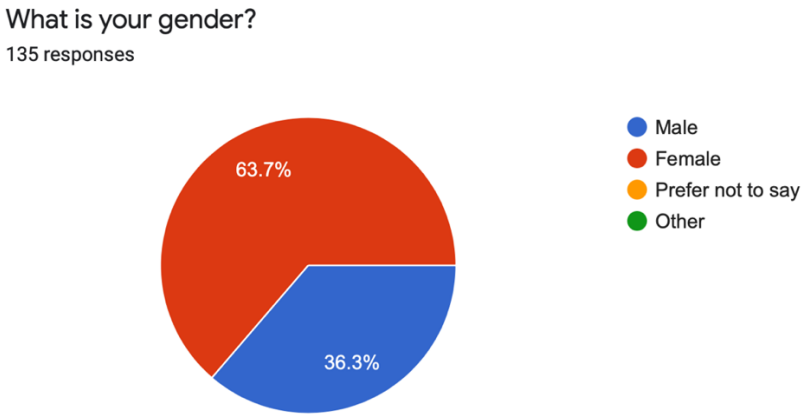
The findings from the research survey will be displayed as their general findings from students. If there is key findings between different courses, this will be outlaid to display data which may have specific causations as to why their data has a different outcome. The data will contain a pie chart sourced directly from the data on google forms. The data will use the users demographic background to give insight of different answers provided by the user. Specific insight relative to age, gender, course and level of study will give indications to where the findings may need to be explored with more depth. Each question will be displayed as a subheading underneath their many heading category. For example, underneath the heading category of assessment, the study will display the questions for assessment underneath to solely focus on the findings and give clarify on the answers provided.

Research context

The research is aimed at answering the hypothesis of the research question, “How adaptable are National College of Ireland students to remote learning?”. While the main question of the research is aimed at the adaptability of the students to remote learning, the research aims to explore side questions to the content relative to the main four categories of the research topic. These questions look at the effectiveness of students with a remote learning routine, their preparedness with the user environment, the effects on mental health and whether remote learning affects the student personally. The final two areas that can be explored by this research question are whether remote learning is sufficient enough to be a long term sustainable solution to students and whether a blended learning routine would be suitable for students. The reasoning for exploring these areas within remote learning is due to the ongoing and uncertain threat posed by Covid-19. Remote learning provides access to education where restrictions may pose threats to the accessibility.

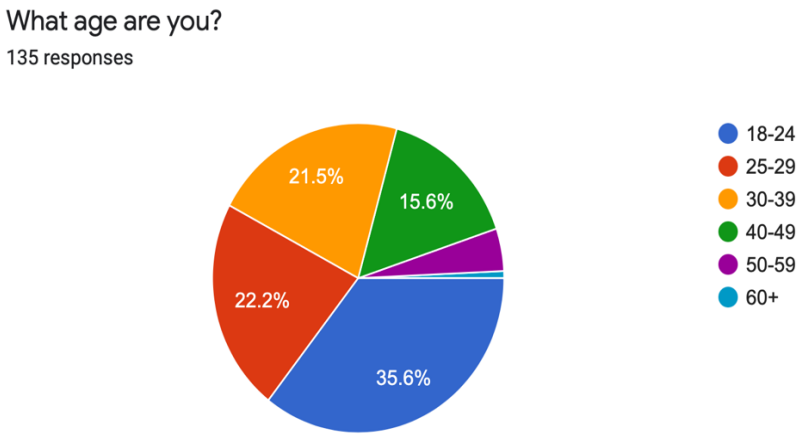
Findings sample

This section identifies the sample size for the findings chapter. The section aims to provide clarity on the respondents background demographic. The total number of respondents is 135. Of the 135, (86)63.7% are female and (49)36.3% are male.



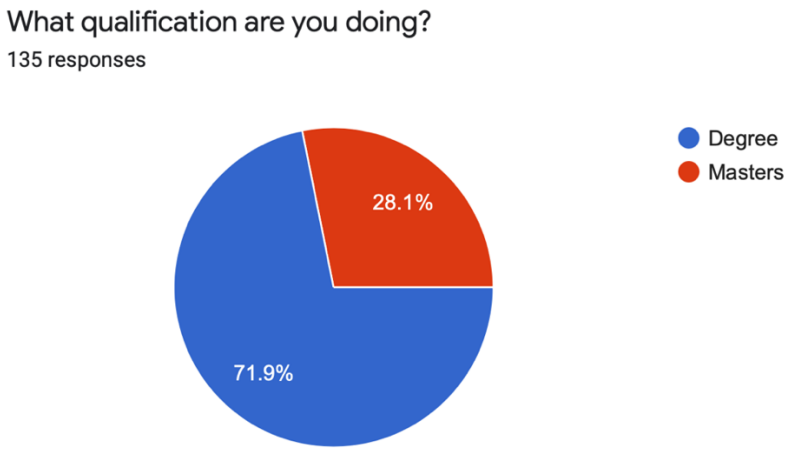
(Figure 1: Pie Chart of Students Genders.)

The respondents were asked their age range. The ranges provided were 18-24, 25-29, 30-39, 40-49, 50-59, 60+. The number of respondents in each category can be represented as the following. 18-24 accounted for (48)35.6% of respondents. 25-29 accounted for (30)22.2% of respondents. 30-39 accounted for (29)21.5% of respondents. 40-49 accounted for (21)15.6% of respondents. 50-59 accounted for (6)4.4% of respondents. Finally, 60+ account for (1)0.7% of respondents.



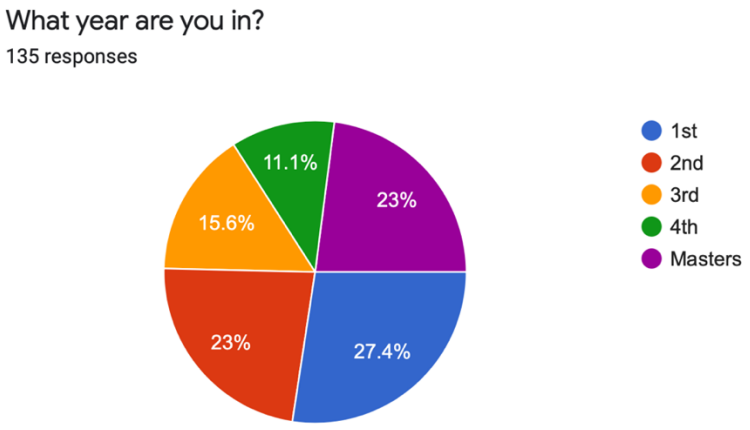
(Figure 2: Pie Chart of Students Ages.)

Respondents were asked what qualification they are doing. (90)71.9% are currently studying for their undergraduate degree. (38)28.1% are currently studying their post-graduate degree.



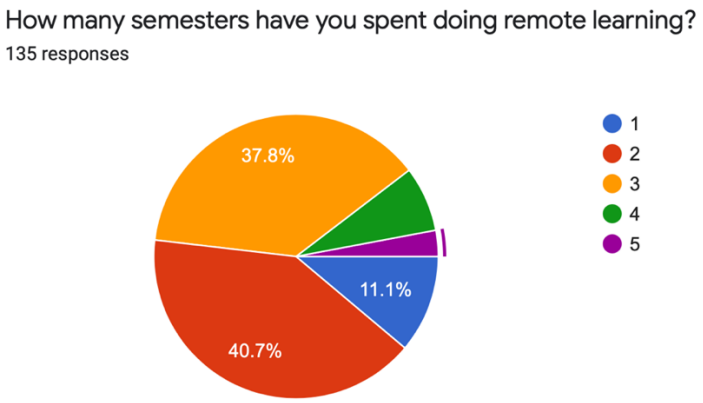
(Figure 3: Pie Chat of Students Qualifications.)

The students were asked what year of college they were in. The students were given the option of whether they were in their 1st, 2nd, 3rd or 4th year of their undergraduate degree. The students were also given the option of being in their masters. The replies from the respondents found that (37)27.4% were in their first year of their undergraduate degree. (31)23% were in their 2nd year of their undergraduate. (21)15.6% were in the 3rd year of their undergraduate degree. (15)11.1% were in the 4th year of their undergraduate degree. Finally, the question found that (31)23% were studying in their masters level. Some differences may be found between this question and the qualification level. This could be due to confusion between the year they are in within their masters if studying part-time. This data of a difference of (7)5.2% will be taken into consideration when assessing the findings.



(Figure 4: Pie Chart of Students Year in National College of Ireland.)

The students were asked how many semesters have they spent doing remote learning. The students were given a range of semesters relative to the length of the Covid-19 pandemic. This semester range was 1-5. (15)11.1& of students have spent 1 semester doing remote learning. (55)40.7% of students spent 2 semesters doing remote learning. (51)37.8% of students spent 3 semesters doing remote learning. (10)7.4% of students spent 4 semesters doing remote learning. (4)3% of students spent 5 semesters doing remote learning.



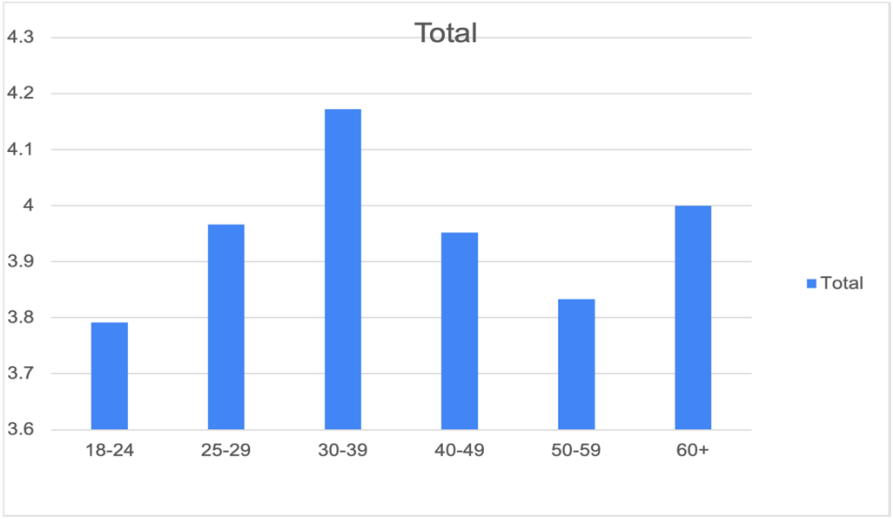
(Figure 5: Pie Chart on How Many Semester Students Have Spent Remote Learning.)

The final aspect of the respondents demographic background is based on what course they were doing. This was an attempt to see if there were possible correlations between courses. This was the only area of the survey where students could answer without being given selective options to choose between. Due to the range of courses. They will be included as the following: (SS)Social Science, (B)Business and also (C)Computing. The range of courses can be identified as this. Students studied courses such as (B)Business, (B)International Business, (B)Human Resource Management, (C)Computer Science, (C)Computing, (SS)Early Childhood Life, (SS)Adult Life, (SS)Psychology, (B)Management, Strategy and Practice, (B)Recruitment, (B)Accounting, (B)Marketing and (B)Business Analysis. (101)74.8% of respondents were from Business courses. (8)5.9% of respondents were Social Science students. Finally, (26)19.2% of respondents were computing students.

5.2 Technological Infrastructure Analysis

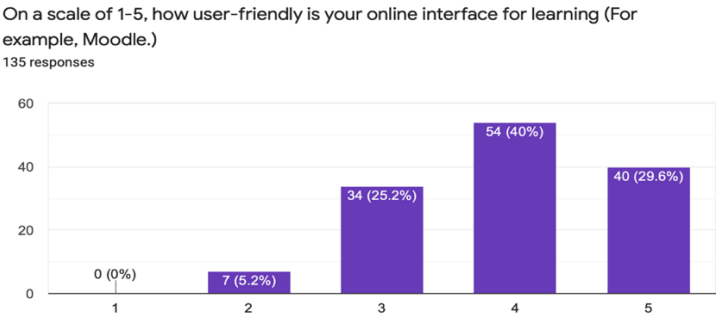
Count of On a scale of 1-5, how user-friendly is your online interface for learning? (For example, Moodle.)

The average outcome on a scale of 1-5 for student within the National College of Ireland was 3.9 out of 5. This data displays that students found their online interface to be above normal. Students consider their interface to be user friendly. The data shows that female students found their interface to be more user-friendly by 0.45. Female students recorded a 4.1 out of 5 and male students recorded 3.65 out of 5. From the data, there were no clear indications that the age of students changed the outcome on how user-friendly their online interface was. The minimum rating on age was 3.8 out of 5 and the maximum was 4.2 for the age category of 30-39.



(Figure 6: Bar Chart Age Category on User-Friendliness, 1-5)

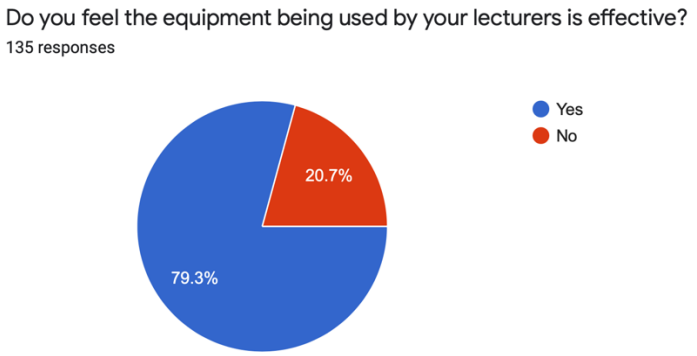
When assessing the year that students are in and a possible correlation between how user-friendly their online interface is came back inconclusive. 1st, 2nd and 4th year students came back with a 4 out of 5 on their user interface being friendly. 3rd year students and masters students ranged between 3.6 and 3.8. This data suggests that age, gender and time spent using the online interface show no clear indication how user-friendly their online interface is. The below table finds the general findings within the overall respondents on how user-friendly their online interface is.



(Figure 7: Bar Chart on User-Friendliness of Online Interface.)

Do you feel the equipment being used by your lecturers is effective?

107 students feel that the equipment being used by their lecturers is effective, while 28 students feel the equipment being used by their lecturers is not effective.

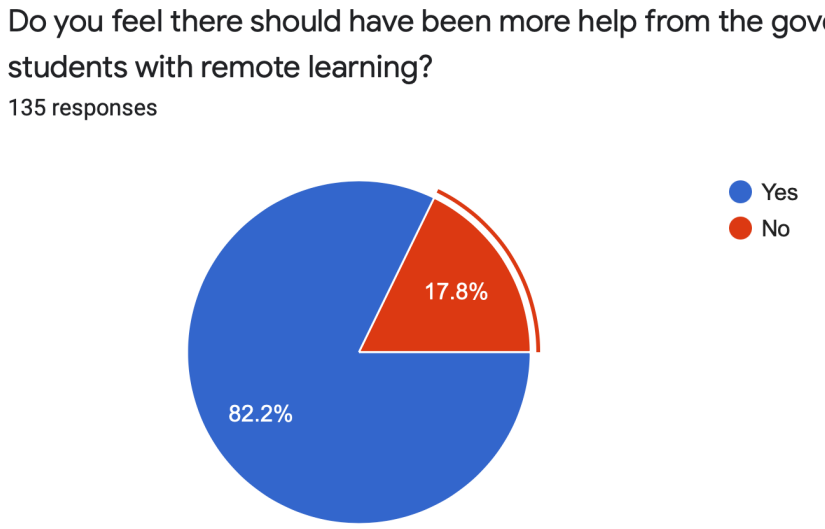


(Figure 8: Pie Chart on Equipment Effectiveness.)

Female respondents answered that (70)81.4% found that the equipment being used by their lecturers was effective, while (16)18.6% found that the equipment being used was not effective. Male respondents answered that (37)75.5% found that the equipment being used was effective, while it was found that (12)24.5% felt that the equipment being used was not effective. From assessing equipment relative to age category, the average percentage among the perception on whether the equipment being used is effective is 81.8%. A clear outlier among this is that the category for 60+ records a 100% effectiveness due to the low sample number. With this taken into consideration and this category being removed due to the outlier data, a more suitable representation of data would be recorded at 78.16%. By assessing the findings on the lecturers equipment to ensure the optimal learning outcome is produced, the data collected on the users experience with remote learning. By assessing the data found it was found that 93.3% of 1st years, 87.3% of 2nd years, 68.6% of 3rd years, 60% of 4th years and 100% of 5th years answered that their lecturers equipment was effective. This data shows a correlation that the more experienced students did not feel the technology was as sufficient as newer students to remote learning. This could be due to changes in technology or experience of different types of learning remotely.

Do you feel there should have been more help from the government to assist students with remote learning?

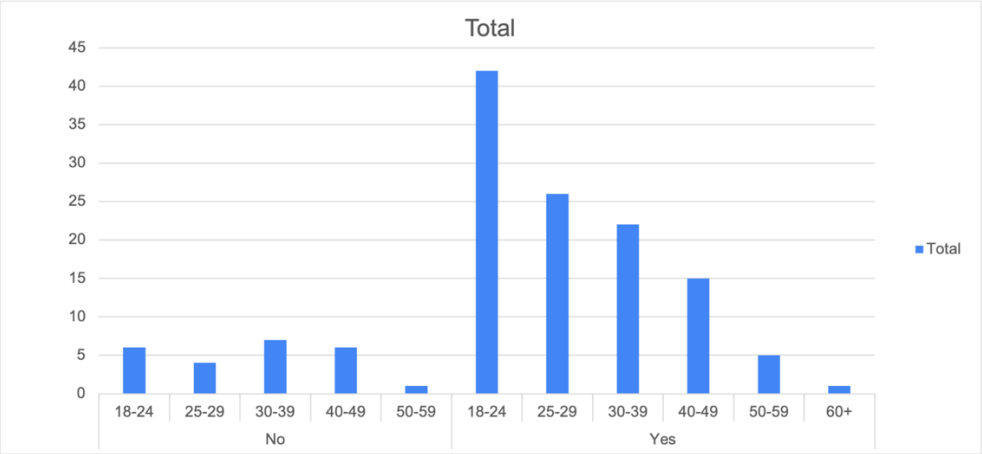
(24)17.8% respondents answered no to this question. (111)82.2% of students responded yes to this question. Through assessing the data, the main areas to explore will be the age categories and the experience through remote learning. These two areas of interest are down to possibilities of different ways of living and also the level of experience a student has with remote learning



(Figure 9: Pie Chart on Government Assistance)

The first analysis of this data will be on the experience with remote learning. Based on the feedback, it was clear that students who experienced remote learning through the academic year of 2020/2021 feel more government assistance is needed. Due to this academic year being the first fully established remote learning academic year, government assistance to housing, technology and other day to day living decisions may have needed support. A key statistic here is that students who operated with remote learning for 2 semesters, 85.4% felt government assistance was needed. Students who have taken part in 3 semesters, 78.4% felt that remote learning required more government assistance.

From examining government assistance from the area of age categories, it was found that there was a clear need for government assistance among students at the lower age categories. The data shows that higher percentages of students in the 18-29 categories feel that more government assistance is needed. 87.5% of 18-24 year olds feel that more assistance is needed and 86.7% of 25-29 year olds feel more government assistance is needed. As the data continues, there is more uncertainty on whether government assistance is needed among students in the high age categories. For example only 71.4% of 40-49 year olds feel that more government assistance is needed.

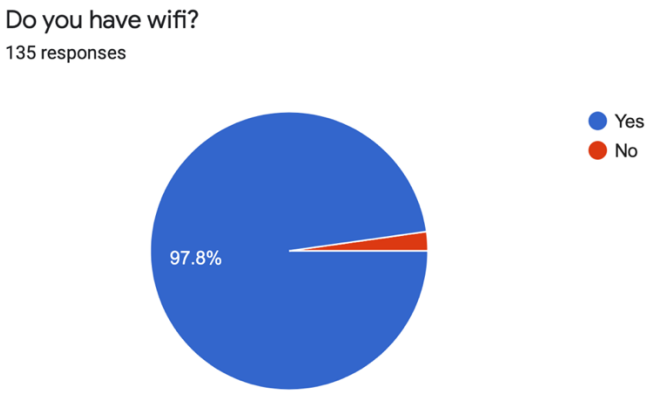


(Figure 10: Age Categories on Yes/No for Government Assistance.)

The final piece of data aimed at looking at through this piece of data is identifying whether undergraduate students and postgraduate students have clear indication that more government assistance is needed. From the data 79.3% of undergraduate students feel more government support is needed and 89.4% of postgraduate students feel more government assistance is needed. This data displays that postgraduate students more need more supports required to the time and level of education they are currently doing.

Do you have WI-FI?

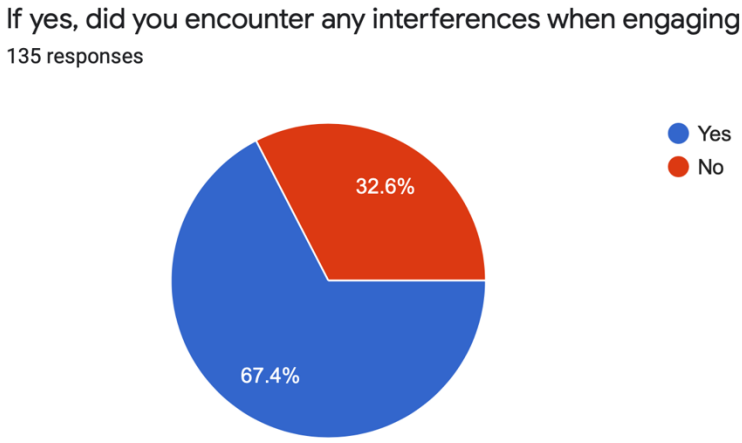
This question was asked to ensure students have WI-FI before asking if they encountered any interference from their WI-FI when engaging with the lectures. (132)97.8% of students have WI-FI, while (3)2.2% of students do not have WI-FI. The students that do not have WI-FI could be using mobile data to connect or using facilities within their geographical location to connect.



(Figure 11: Students Wi-Fi.)

If yes, did you encounter any interferences when engaging with the lectures?

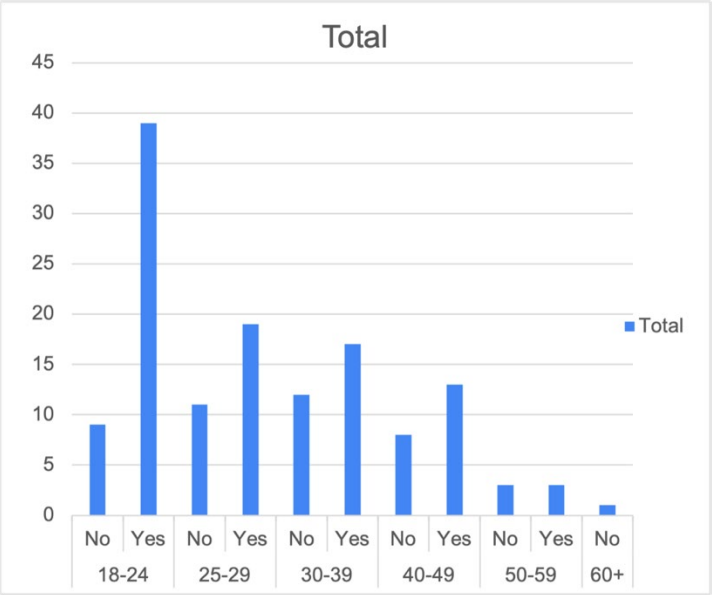
From the 135 respondents (91)67.4% of students encountered interferences when engaging with the lectures and (44)32.6% did not suffer any interferences when engaging with the lectures.



(Figure 12: Students and Interference.)

This data has limitations due to not knowing whether students are connecting from foreign countries or what service provider they are using. The possibility to examine correlations between possible failures among service providers and international areas is impossible due to the data collected.

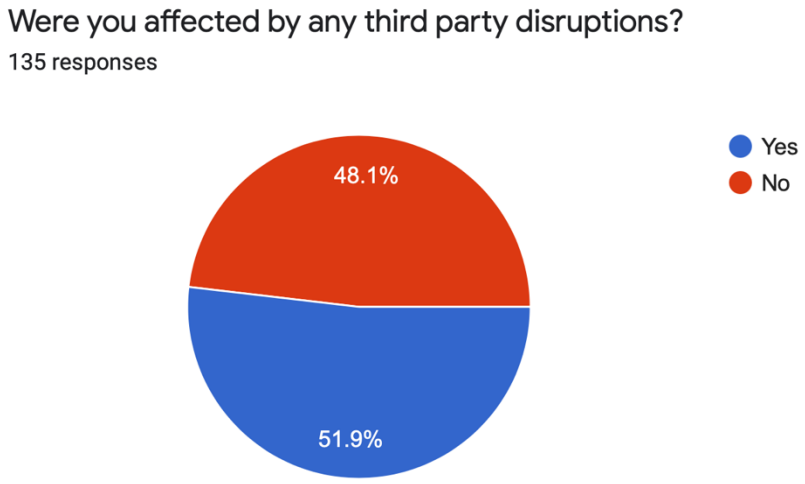
63.3% of males experienced interference with WI-FI, while 69.7% of females experienced interferences when engaging with the lectures. The data displays that the 18-24 category had a higher percentage of users who experienced interferences with their WI-FI. 81.3% of 18-24 year olds experienced interferences when connecting to their lectures. The average among the other four age categories is 58.5%. This data is excluding the 60+ age category that did not have any interferences but only had one respondent. Possibilities for differences in data between the lowest age bracket and the mean could be due to not controlling their WI-FI services. Possibilities of living at home or on campus could leave the student vulnerable to third party disruption within their WI-FI services.



(Figure 13: Age Category Yes/No on Encountering Interferences.)

Were you affected by any third party disruptions?

(70)51.9% of students were affected by third party disruptions, while (65)48.1% of students were not affected by third party disruptions. Third party disruptions are anything the student could not control. For example the student may have experienced noise pollution from near-by construction. This would have affected their ability to function within the lecture and therefore acts as a third party disruption.



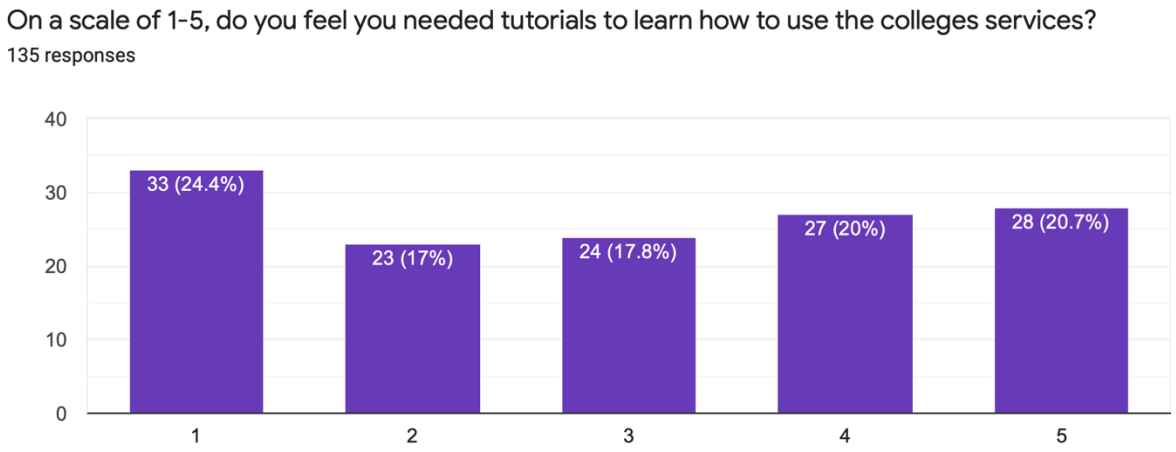
(Figure 14: Students & 3rd Party Disruptions.)

There are similarities in the data as to whether any gender specifically had been vulnerable to third party disruptions. 53% of males were affected and 51.2% of females were affected. This data shows no correlation to any gender being prone to third party disruptions. Identifying relevant issues within courses would not be identifiable here due to the specification relative to home life. The data shows that potential differences in third party disruptions. The youngest age category 66.67% 18-24 suffered from third party disruptions. 43% of 25-29 were affected from third party disruptions. 55.2% of 30-39 year olds suffered from third party disruptions. 29.6% of 40-49 year olds and 50% of 50-59 year olds were affected by third party disruptions. Although there is no direct correlation to age increasing, it reduces the possibility of disruptions. A possibility can be found that changes in jobs, financial security and family life could contribute and leave certain age categories open to being disrupted through their studies.

5.3 User Readiness Findings

On a scale of 1-5, do you feel you needed tutorials to learn how to use the college services?

Out of the 135 respondents, it was found that the outcome on whether students needed tutorials on how to use the college services was neutral. On the scale from 1-5, the outcome was 3.

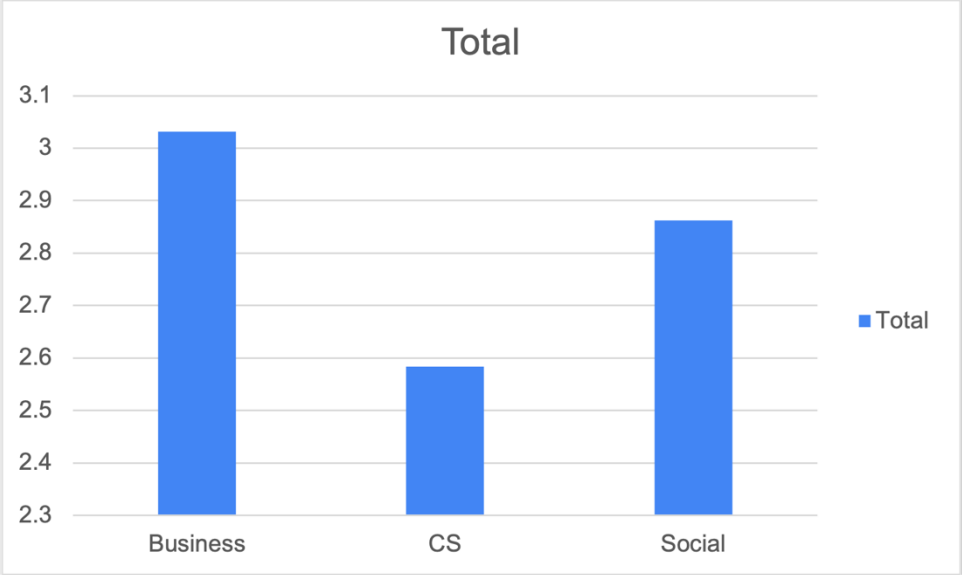


(Figure 15: Students & Tutorial Services, 1-5.)

Male respondents averaged 2.8, just below neutral. Female respondents averaged 3.0, holding at neutral. With this data being considered, there is a potential that students may need tutorials to help them with the college services. There is no findings of any differences between specific genders.

When assessing students based on their age, the range of the average between 18-59 was 2.6-3.2. This range shows there is no clear differences relative to age. This data shows that students are well equipped to use the college services online. An outlier of data was the 60+ category that found tutorials were not needed at all being rated at a 1. This is a positive outcome for the design and user experience for students operating on NCI's online services.

The final assessment of data for the findings on tutorials to use the colleges facilities were based on the outcome of specific study categories.

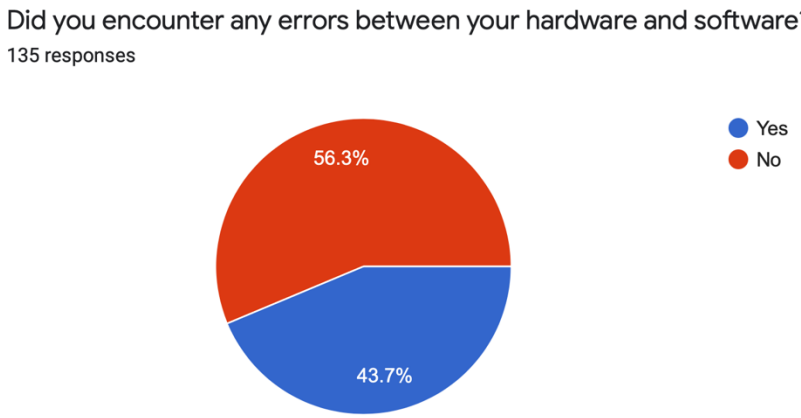


(Figure 16: Course Type & Outcome on Tutorial Services.)

Based on the data found, the range between Business, Computer Science and Social courses averaged at 2.8. Computer Science students felt tutorials was not needed as much as Business and Social Science students. A possible reason for this could be due to the engagement with computer based services and familiar use with technology.

Did you encounter any errors between your hardware and software?

Out of the 135 Respondents (76)56.3% of students did not encounter any errors between their hardware and software. (39)43.7% of students encountered errors between their hardware and software. The assessment of the data in this section will aim to find clear indications to gender, age, experience and their course.



(Figure 17: Students with Hardware & Software.)

The findings relative to the male respondents was that 51% did experience errors between hardware and software, while 49% did not. For female respondents it was found that 40% experienced errors and 60% had not. There is a 10% difference between the two genders. Although, the female sample size was larger which could provide a more accurate source on whether hardware and software errors occurred among students.

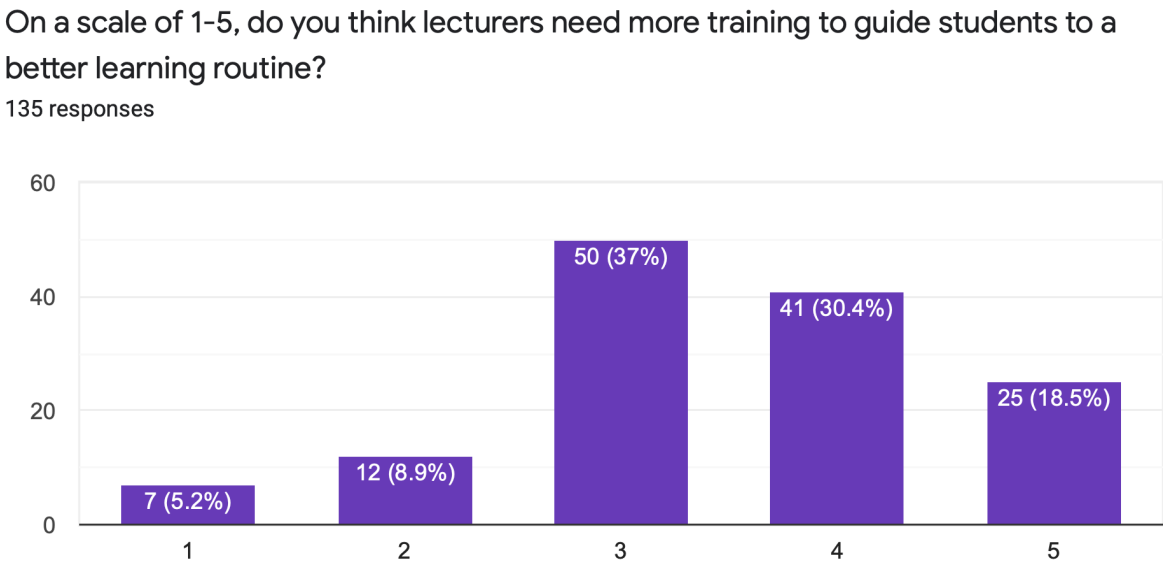
The findings relative to age found that 62.5% of 18-24 year olds, 33% of 25-29 year olds, 44.8% of 30-39 year olds, 23.8% of 40-49 year olds and 33.3% of 50-59 year olds encountered errors. This data shows that the older the respondents became, the less percentage that encountered errors.

Among the course categories it was found that 46.8% of Business students, 50% of Computer Science students and 31% of Social Science students encountered errors. This data shows that the range from 31%-50% of students are going to encounter errors within their course content.

Finally, there was no conclusive data between the amount of time students have spent doing online learning. Although experience can be key to avoiding errors, the data shows that students who were experience with remote learning still had issues. 40% of students with one semester of remote learning experience errors while students with 2 semester completed had an error percentage of 51%. Students who had completed 3 semesters of remote learning also had an error rate of 39%. This data shows that experience does not provide a correlation as to whether students are vulnerable to errors.

On a scale of 1-5, do you think lecturers need more training to guide students to a better learning routine?

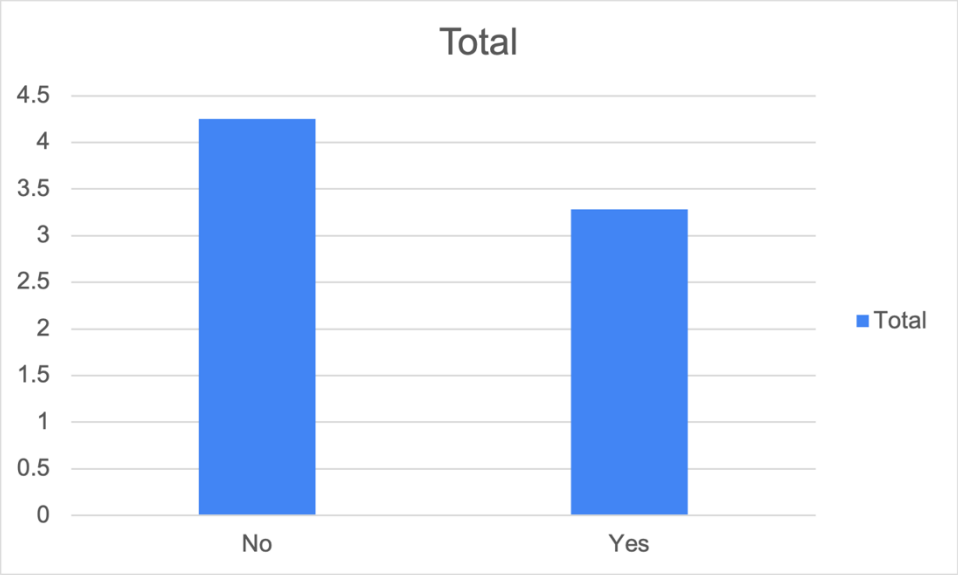
The data found shows that (66)48.9% of students think that teachers do need more training to guide students to a better learning routine. (50)37% feel neutral about this and (19)14.1% do not think it is necessary.



(Figure 18: Students & Lecturers Training, 1-5.)

Male students averaged a score of 3.5 and female student averaged a score of 3.5. There is no difference in the expectancies from both genders on the level of training needed for lecturers. The range of averages relative to age categories was 3 to 4.2. The lowest recording was for the age category 40-49 and the highest was from the age category 50-59. This data shows no clear findings between age category expectancies. Although, the lowest age category was 30-39, 18-24 recorded a mean range of the averages. Undergraduate students and postgraduate students averaged 3.3 for undergraduate and 3.8 for postgraduate students. This data shows that post graduate students had high expectations on the level of training needed. Findings on experience with remote learning show that the mean of values from 1-5 semesters was 3.5 and the range was 3.3 to 3.8. This shows a 10% difference in views of the students.

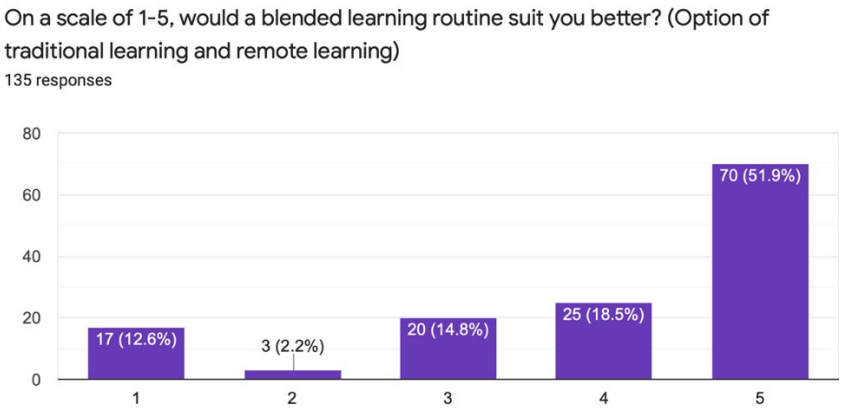
A correlation between lecturers equipment being effective and lecturers needing more training could be found from the data. Students who felt the equipment was not effective scored an average of 4.3 and students who felt the equipment was effective scored an average of 3.3. The data shows that students feel there could be more done from the lecturers side of learning to provide and optimal outcome.



(Figure 19: Lecturers Training & Equipment Correlation.)

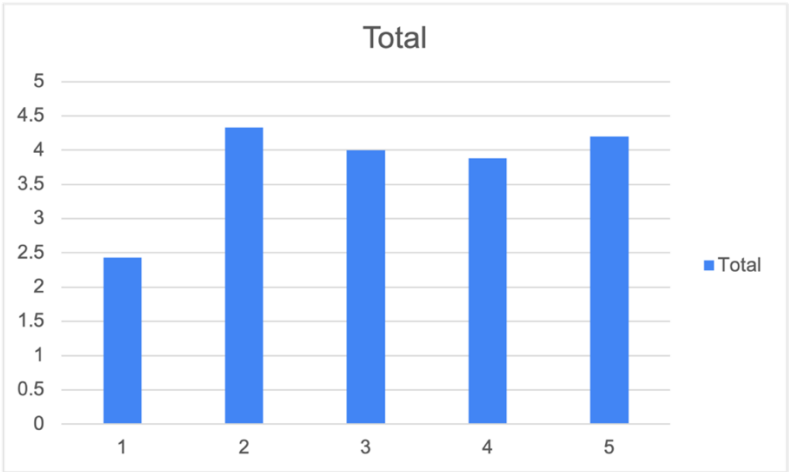
On a scale of 1-5, would a blended learning routine suit you better?(Option of traditional learning and remote learning.)

(95)70.4% of students would be more preferable of a blended learning routine. (20)14.8% of students would have no preference on the option of blended learning. (20)14.8% do not feel that a blended learning routine would suit them.



(Figure 20: Blended Learning, 1-5.)

Males and females have similar opinions on a blended learning routine. Males scored an average of 3.9 and females scored an average of 4. Although the data among age groups ranged from 3.4 to 5. The outlier of the 60+ category does not give true representation to the age category due to the low number sample. Business students averaged a score of 3.9, Computer Science students averaged a scored of 4.3 and Social Science students averaged a score of 4. The data concludes that no course is more prone to possible disadvantages of remote learning. All courses could avail of the flexibility that a blended learning routine would provide. The students technological data did not show any correlation. The user interface usability had no effect on a student's possibility of a blended learning routine. One correlation that could be found from the data was that students who felt lecturers did not need more training to provide a better learning routine averaged a score of 2.4 when having the option of a blended learning routine. These students would prefer not having an option on how their learning routine would be taught for the academic year.

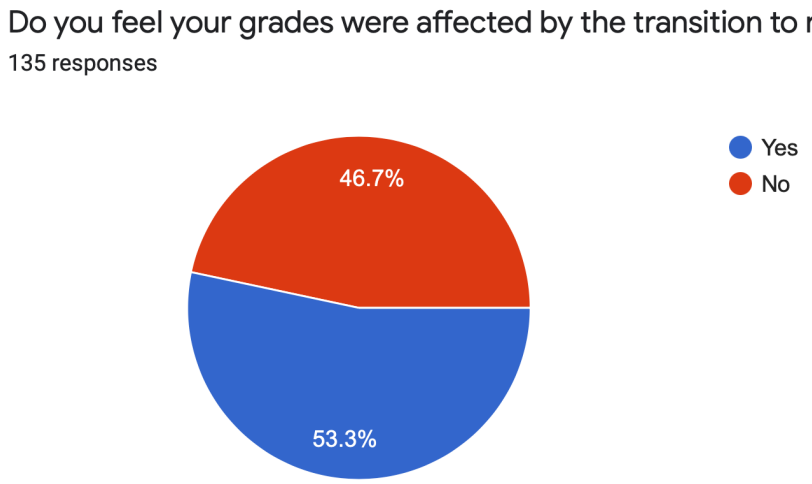


(Figure 21: Students Blended Learning Attitude & Lecturers Training.)

5.4 Assessment Findings

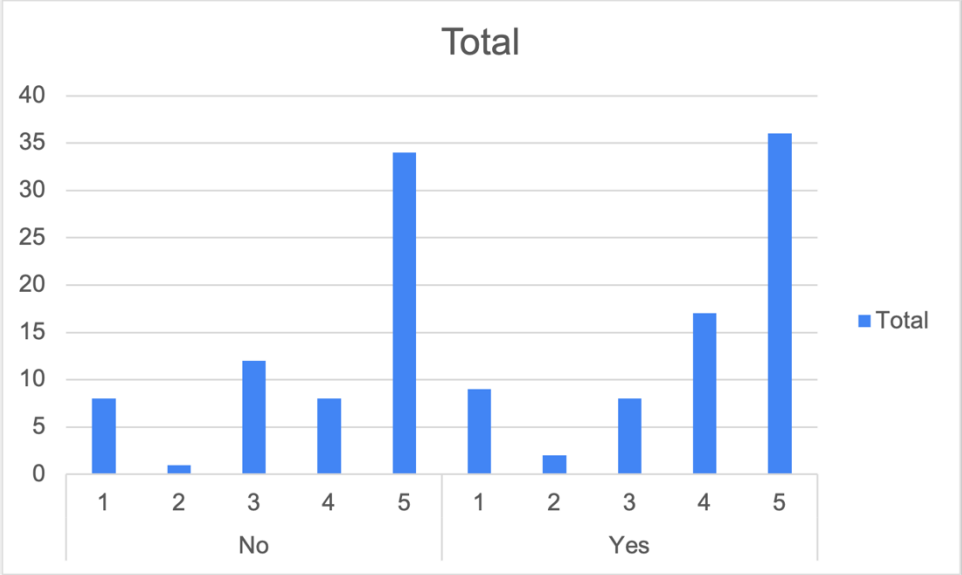
Do you feel your grades were affected by the transition to remote learning?

(63)46.7% of students do not feel their grades were affected from the transition to remote learning and (72)53.3% of students felt their grades were affected from the transition to remote learning.



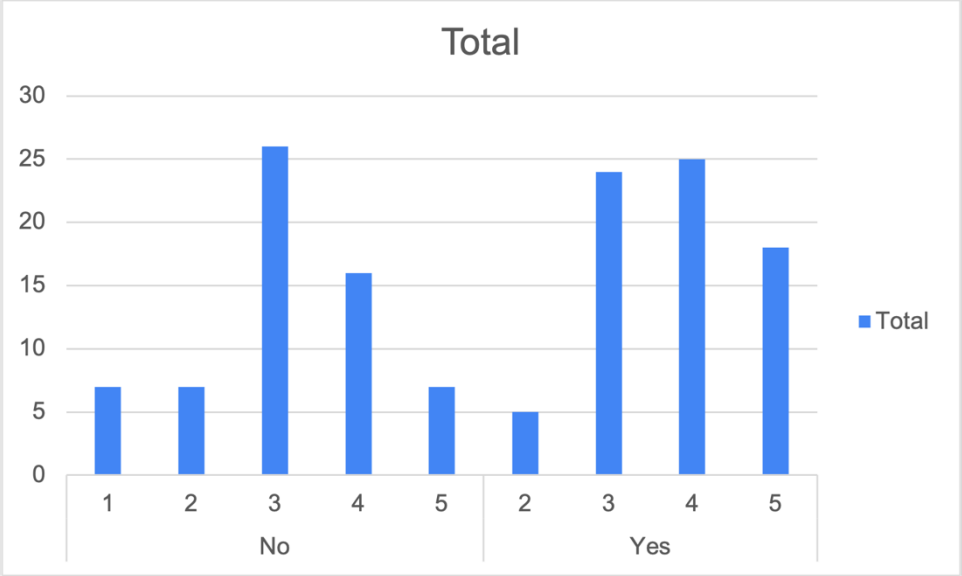
(Figure 22: Students Grades & Remote Learning.)

57% of male students felt their grades were affected by the transition to remote learning and 51% of females felt their grades were affected by remote learning. Males scored higher than the average of 53.3%. The data shows that males were affected more than females by the transition to remote learning. 71% of 18-24 year olds, 47% of 25-29, 45% of 30-39 year olds, 38% of 40-49 year olds and 50% of 50-59 year olds felt they were affected by the transition to remote learning. The data shows that with age, grades are affected. Course selection did not show any changes in how grades were affected by the transition to remote learning. From the data, there was no specific correlation between students attitude towards blended learning and the affect it had on their grades.



(Figure 23: Grade Outcome Relative to Blended Learning.)

Students who felt lecturers needed more training also felt that their grades were affected by the transition to remote learning.

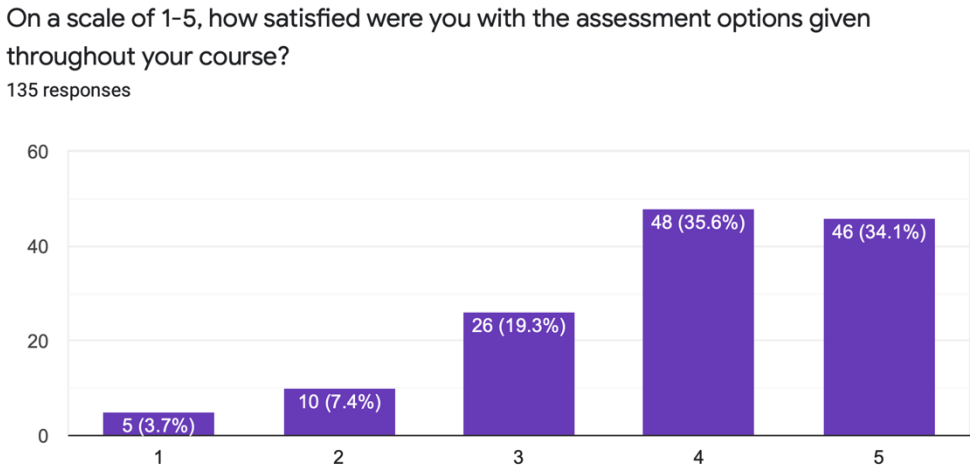


(Figure 24: Lecturer Training Relative to Students Grades.)

Finally, there was strong indication that grades were not a direct reason as to why students feel there needs to be government assistance. 68% of students who felt no government assistance was needed felt their grades were not affected by the transition to remote learning and 90% of students who felt their grades were affected by remote learning also felt more government assistance was needed. This data shows there is a strong need for more government assistance but not being a direct change to the students grades.

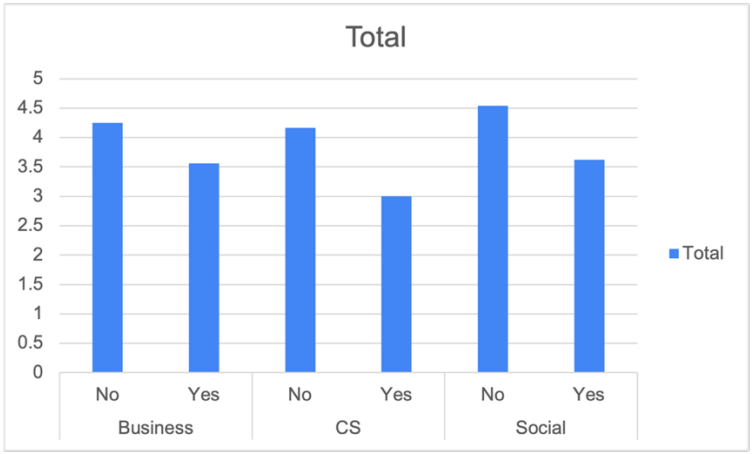
On a scale of 1-5, how satisfied were you with the assessment options given throughout your course?

Students averaged a 3.9 out of 5 on how satisfied they were with the assessment options provided during their course. 69.7% of students scored between 4 and 5. 19.3% of students were neutral on the assessment provided. 11.1% of students were not satisfied with the assessment provided in their course through the academic year.



(Figure 25: Student Satisfaction.)

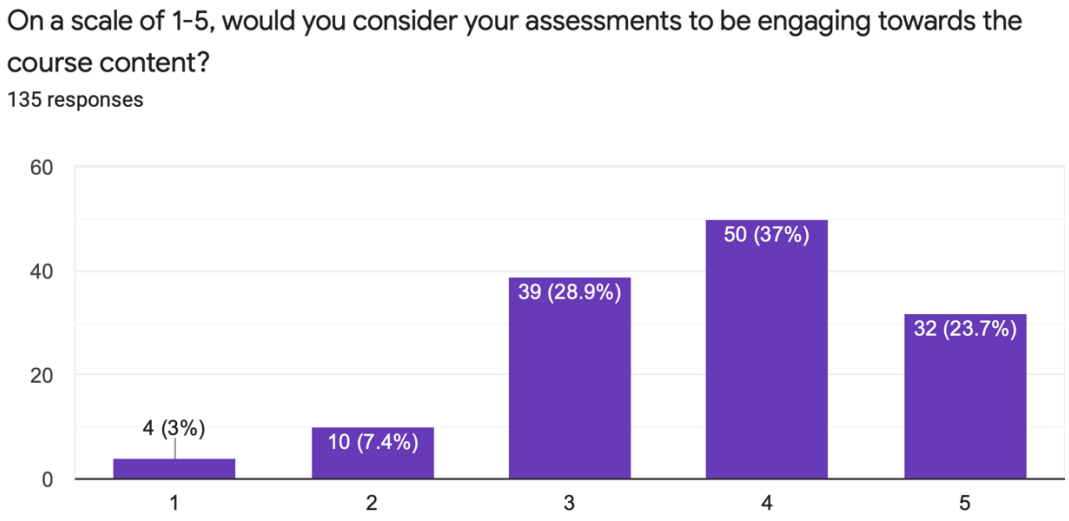
Male respondents averaged a 3.8 score and female respondents averaged a 3.9 score. There is no clear reason that gender is down to preference of assessment provided during the course. For the purpose of this data, 60+ will be included with the 50-59 category. 50+ respondents averaged 3.2 while the range of the respondents below 50 was 3.8 to 4.1. Social Science and Business students had an average range of 3.8 to 4 and Computer Science students had an average of 3.5. Computer Science students were the least satisfied by their assessment choices and Business students were the most satisfied. There is no clear indication that students performance in their assessment correlates with their satisfaction on assessment choices provided.



(Figure 26: Assessment Satisfaction Relative to Selection Satisfaction.)

On a scale of 1-5, would you consider your assessments to be engaging towards the course content?

(82)60.7% of students had a positive outlook on their assessment being engaging towards the course content. (39)28.9% of students were neutral on whether the assessment was engaging towards the course content and 10.4% did not feel the assessment was engaging towards the course content.

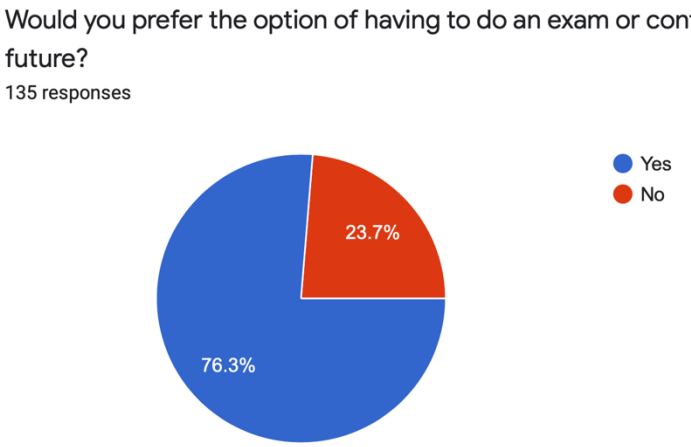


(Figure 27: Assessment Engaging to Course Content.)

Males scored an average of 3.6 on whether the course assessment was engaging to the content. Females scored an average of 3.9 on whether their assessment was engaging towards the course content. The range between the ages, now considering 50+ as a category, was 3.6 to 3.9. Age and gender data did not show any findings on differences between the course content and assessment. As different courses have different exam coordinators and course coordinators, it was found that the range between the 3 course categories was 3.67 to 3.73. There was conclusive data that the differences in courses could have variabilities on whether the assessment was engaging to the course content. The mean for the three courses was 3.71. Another piece of data that provided similar data between all categories was the year of the student. 1st year averaged 3.8, 2nd year averaged 3.8, 3rd years averaged 3.5, 4th years averaged 3.7 and masters students averaged 3.6. This data shows that there is consistency among the years in the National College of Ireland.

Would you prefer the option of having to do an exam or continuous assessment in the future?

(32)23.7% of students would not prefer an option of having to do an exam or continuous assessment in the future. (103)76.3% of students would prefer the option of having to do an exam of continuous assessment in the future.



(Figure 28: Option Preference to Future Assessment.)

79% of female students would prefer the option within how they do their assessment and 71% of males would prefer the option of how they do their assessment. By categorising age there was no general outcome on whether age affected the outcome of results. The percentage outcome of results ranged from 66% to 86%. This data was mixed among all age categories. Undergraduate students and postgraduate students both had an average percentage of 76% of students would prefer the option. The data collected on what course students studied did not have an effect on the choice students made on having an option for exam assessment or continuous assessment. 74% of Business students, 75% of Computer Science students and 82% of Social Science students would all prefer an option on their assessment choice. 83% of students who had their grades affected by the transition to remote learning would prefer an option on their assessment, 71% who did not have their grades affected by the transition to remote learning would also want the option. The data shows indication that a higher percentage of students who had their grades affected from remote learning would want an option on how they do their assessment.

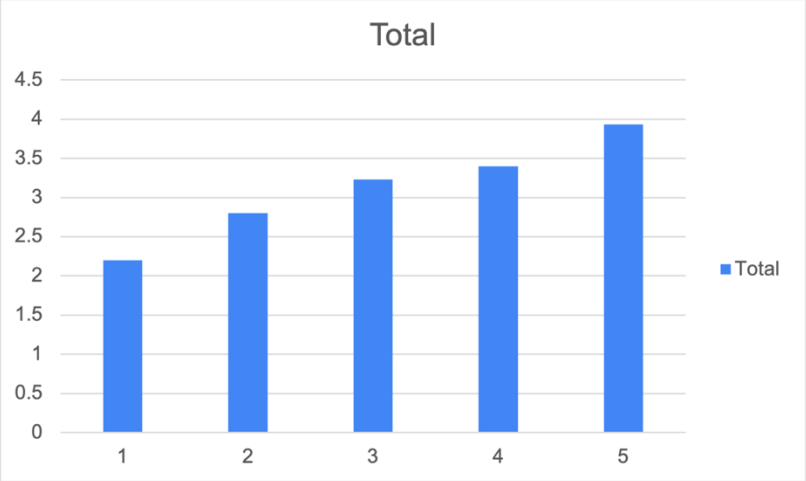
5.5 Mental Health Findings

On a scale of 1-5, have you adequately managed your stress levels through remote learning?

(72)53.3% of students felt they had managed their stress levels adequately during the remote learning experience. (33)24.4% of students felt neutral about how they managed their stress levels and (30)22.2% of students felt they did not manage their stress levels adequately.

(Figure 29: Management of Stress Levels.)

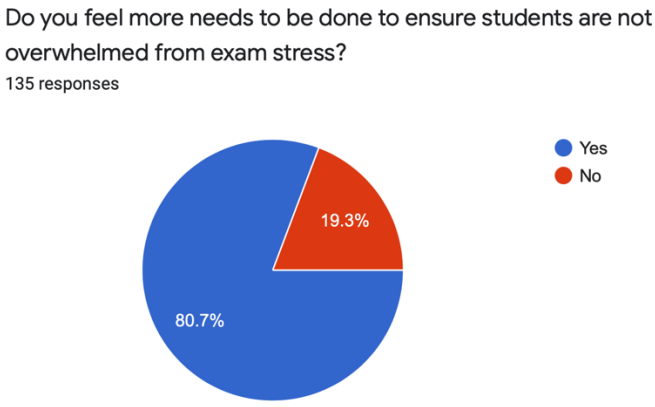
When analysing the data on genders. Females averaged 3.4 and males averaged 3.6. Male students showed to manage their stress better than female students. By looking at the data on age categories. The youngest category were the worst for managing their stress levels. Although they averaged at neutral, all other age categories except the 30-39s were close to 4. The category that displays a key area of interest for stress levels is that 18-24 year old females averaged stress levels of 2.86 and males at the same age category averaged 3.42. Females from 25-29 averaged 3.58 and males averaged 4.18. The data shows that younger females are more vulnerable to stress from remote learning while males from 30-39 are more vulnerable to the stress. Males in the age category of 30-39 averaged 3, whereas females in this category averaged 3.5. Students who were not affected by third party disruptions had a mean score of 3.8 while students who had a mean score of 3.1. This shows students that were prone to third party disruptions managed their stress less effectively. The same data can be found for students who encountered errors between software and hardware at 3.8 and 3.0. Based on the range of findings from students who would potentially prefer the option of blended learning, the range of data was 3.8 to 3.2. This is leaving students within the range of managing their stress levels. Students who were indifferent to blended learning had managed their stress levels the best whereas every other outcome had a similar reading. The range for this data was 3.2 to 3.5. Students who were least satisfied with their assessment options managed their stress levels inefficiently. The range went from 1=2.2, 2=2.8, 3=3.2, 4=3.4, 5=4. The data here suggests that students who were satisfied with their assessment options managed their stress more effectively.



(Figure 30: Management of Stress Levels Relative to Assessment Preference.)

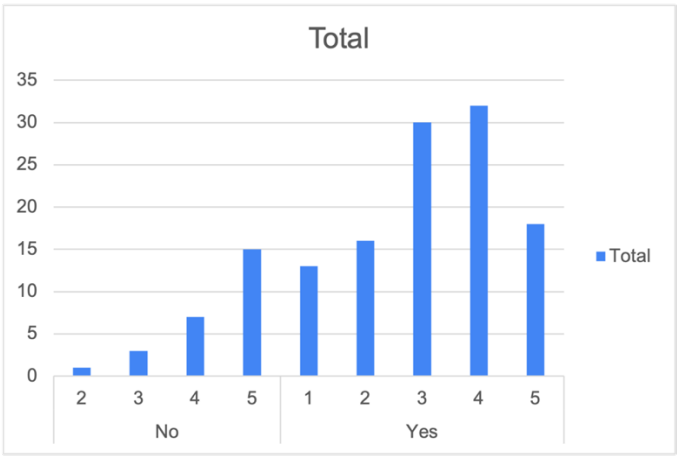
Do you feel more needs to be done to ensure students are not becoming overwhelmed from exam stress?

(26)19.3% feel more does not need to be done to ensure students are not becoming overwhelmed from exam stress. (109)80.7% of students feel more does need to be done to ensure students are not becoming overwhelmed from stress.



(Figure 31: Student Stress & Intervention.)

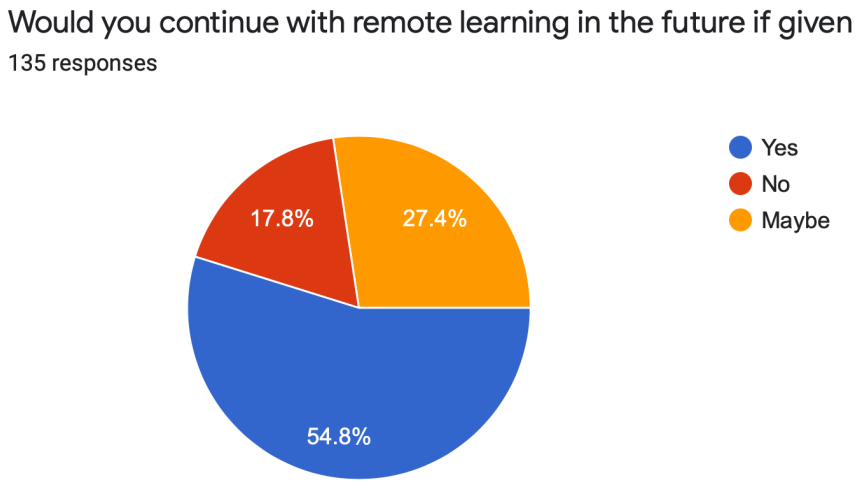
85% of female students feel more needs to be done to ensure students are not becoming overwhelmed from exam stress and 73% of males feel more needs to be done. The data shows a more caring approach towards mental health from females respondents. 18-24 year olds are most passionate about ensuring more is done for students mental health. 90% of 18-24 year olds feel more needs to be done. 73% of 25-29 year olds feel more needs to be done. 86% of 30-39 year olds, 48% of 40-49 year olds and 71% of 50+ feel more needs to be done for students mental health. 82% of Business students, 83% of Computer Science students and 76% of Social Science students feel more needs to be done for student mental health. 80% of undergraduate students feel more needs to be done and 84% of postgraduate students feel more needs to be done. The below figure shows the correlation between students stress management and whether they feel more needs to be done for students. The graph shows the number of students who feel that more needs to be done but also how they managed their stress levels through the transition to remote learning.



(Figure 32: Stress Management & Intervention.)

Would you continue with remote learning in the future if given the option?

(74)54.8% of students responded that they would continue with remote learning in the future if given the option. (37)27.4% of students responded "maybe" to continuing remote learning if given the option in the future. (24)17.8% of students responded that they would not continue with remote learning in the future if given the option.



(Figure 33: Continuation with Remote Learning.)

55% of females said they would continue with remote learning if given the option in the future. The same figure is given to male respondents. Figures for "no" and "maybe" were similar between both genders. Females were 17% for a maybe, while males were 18%. Thus, females being 28% and males being 27% for a "no" response. The older respondents were, the more willing they were to continue with remote learning in the future. 35%of 18-24 year olds would continue definitely in the future, while each age category above that had a 60% rate of students who would continue in the future. The amount of time students have spent doing remote learning does not have an effect on the outcome of them continuing with remote learning in the future. Majority of years would continue with remote learning in the future based on the findings. 36% of students who had their grades affected by the transition to remote learning would continue with remote learning in the future. 75% of students who had their grades affected by remote learning would not continue with remote learning in the future.

Chapter 6 – Discussion

6.1 Introduction

This section will analyse the data from previous literature and the findings from the research survey. Comparisons on similarities and differences will be outlined to discuss if more can be done to enhance a student's experience with remote learning, if it was to continue in the future.

6.2 Technological Infrastructure Discussion

The literature finds that the infrastructure within the field of education should be sustainable to ensure a positive learning relationship between the student and the lecturer. The literature shows signs that the infrastructure available to the students is not effective at giving an effective course outlay. The findings from the research question contradict this and find students feel the technological infrastructure is effective at providing a solid learning outcome.

Information from the literature finds that students would need sufficient connection and technology to ensure there is an optimal outcome when learning. Janet et al suggests the use of synchronous and asynchronous learning to provide insight into examples of learning remotely. While the findings found that students did suffer from Wi-Fi disruptions and third party interruptions, this type of learning is a similarity which joins the literature to the findings. The literature finds that the students life revolves around a flexible lifestyle. Although the students are operating remotely with a timed schedule, students found that the technological infrastructure they were using was efficient and effective enough to provide an optimal learning outcome.

Practical implications caused among the technological infrastructure could be increased government support through grants to ensure students have sufficient capabilities to engage in an optimal learning routine. Although technological infrastructure is mainly based on how the students operated with their own technology, there could be an implications where lecturers could be setup with a suitable setup to ensure they can engage with remote learning. Although remote learning may not be the future due to changes in coronavirus restrictions, the possibility of having the correct infrastructure to engage in a lecture from home, while students are present in a lecture hall, could be seen as a future way to accommodate a mix of blended learning. Although implications from the research may be positive for advances in how technological infrastructure is used, there is a view that it may not be the best outcome depending on what students hope to get from engaging within their lectures.

6.3 User Readiness Discussion

The literature on user-readiness provides insight to previous literature that remote learning lacks experience and structure. The literature outlines that participants in remote learning must be trained adequately to ensure the best outcome for all stakeholders. Students outlined from the findings that more training was needed on the side of the lecturer. This data outlines that one of the main participants in remote learning are in need of guidance to ensure an optimal remote learning outcome. Students themselves were relatively indifferent about the level of training they needed. When needing to use the college facilities. Students scored closely to 20% on a scale of 1-5 question based on their user-preparedness.

User-readiness outlined the love between students and technology. Ali 2018 suggests, while students are mainly using modern technology in their day to day lives, there is an assumption that their user-readiness should be at a high expectation. The data found from the research question outlines that 43.7% of students experiences issues with hardware and software. This finding contradicts how well equipped we find students to be with technology. The literature does not compare directly with this finding. A similarity between the literature and this finding is that students must become more prepared to learn their technology. This finding is true relative to the finding. If the student had more information and knowledge on their own hardware and software, they would encounter less errors.

Practical implications from user readiness could be possible changes in the training structure for lecturers, as the uncertainty around covid-19 remains, 3rd level institutions may seek to hinder the disruption caused by the pandemic. By creating a structure and plan suitable with possible technological infrastructure, the institute can ensure students are getting their optimal level of education expected. Another implication from the research could be auditing lecturer performance to ensure they are engaging correctly with students and understanding the implications within their lives due to unforeseen circumstances of the pandemic. The final possible implication would be assessing the students readiness to use the software and hardware to allow them to fully integrate with their course content. This may be done to reduce students issues and ensure there is a flow within the course. Allowing students to find where they are having issue before they are fully in the academic calendar would create more efficiency when problems arise.

6.4 Assessment Discussion

The literature on assessment finds that there is no clear findings that students grades deteriorate relative to remote learning. The findings from our study found that 53.3% of students felt their grades had been affected by remote learning. A mixed percentage of students shows that there is an indifference as to whether students grades were genuinely affected by remote learning.

Jankowsku 2020 states, students had a positive response to the assessment offered through them in their course. Students also had a positive response on how engaging the course content was to the course. The literature outlines that assessment should be fair, understanding and allow students to have equity in their assessment options. Although students had a positive outlook on their assessment and course content through their experience with remote learning so far, students also feel they should be allowed more choice when it comes to their assessment options. From the findings, there is a positive trend in the area of student assessment within the National College of Ireland, students feel more can be done to ensure even better outcomes in the future. This data could relate to the mental health findings which relate stress to assessment. A possible correlation between the literature and data here can be found from the literature side of the research. Although students may be stressed from the academic outcomes. Students in the National College of Ireland shared insight into a positive assessment system that is fair, understanding and shares equity to the students' academic position.

Practical implications within assessment in 3rd level educations could be allowing students choice on how they take part in the course outline. By offering students an option of blended learning, remote learning or traditional learning, there could be a suitable assessment choice that would suit each students priorities. When assessing students relative to the course outline, continuous assessment may suit some students and end of semester assessments mat suit others. This would allow for a group of students excelling in their classes due to preference on where they are suited for performing better in their college assessments. The final practical implications would be using technological infrastructure and user-readiness to find a possible solutions for offering exam based assessments on a remote scale. By being able to monitor students during these assessments and not having to use high labour hours, this could add another source of assessment to students in a remote learning environment.

6.5 Mental Health Discussion

The literature finds that students suffer from higher distress when it comes to their academic work. Although there are contradictions in the literature on students depression, the main focus was to outline distress caused by academic related stress, 80.7% of students found that more needed to be done to help students who are overwhelmed by stress. While over 70% of students felt they managed their stress levels in a medium to very high level, there is clear indication that students mental health is important and needs to be looked after to ensure students are not suffering from academic stress.

The findings in the literature progresses to focus more on Covid-19 mental health outcomes. The research survey does not focus on this as the study aims to look at students adaptability to remote learning when a traditional learning option is available. Although there is not direct correlation between the literature and research findings, possible implications can be found relative to the information found within the study.

Practical implications associated with Mental Health would be relative to students well-being. Bringing in more services to deal with students facing possible effects of lockdowns

and other social changes during a remote learning year. The institute could incorporate more social groups through remote atmospheres by allowing students to engage outside of an academic setting. The institute could adapt new policies to ensure better outcomes for students suffering high stress levels through assessment periods. By ensuring students are having a healthy experience with their education, this should result in the students scoring high than if they were going through a period of low mental health.

Chapter 7 – Recommendations & Conclusion

7.1 Recommendations

Recommendation's will be outlined specifically on areas where need to be improved. These will be short and concise to ensure that a clear recommendation is provided to the reader.

The researcher recommends that:

- More training is provided to lecturers to ensure there is an optimal learning outcome for the students. This must be discussed between students and the college institutions to identify clear areas that are being missed with the expected learning outcome.

- If remote learning is to continue in the future, more government assistance is needed. A clear line of communication between education authorities and student unions to identify what is being missed. A possible restructure of grants and student services to accommodate funding for a remote environment.

- Students must engage in their own personal learning to understand their technological infrastructure and ensure there is a user-readiness within their learning approach. Students must be prepared to deal with errors and understand how to source a solution when encountering possible disruptions.

- If remote learning was to continue in the future, flexibility to the students learning outcome should be identified due to restrictions within their home country. When considering flexibility, the students equity in the decision making on assessment choice should be considered. As the course is intended to be learnt relative to the course outline, potential options of assessment could be outlined to benefit the students studying methods. This is in accordance with the loss of facilities due to remote learning such as the library.

- Offer adequate supports for a blended learning approach for international students and students who need high flexibility supports in their life. This ensures balance among students and can have a positive effect on their mental health in the long run.

- Finally, students should be offered engagement with stress easing programs. As the National College of Ireland partners with gym facilities, this acts as a form of de-stressing for many students. Possible partnerships with applications and remote stress management services could help students mental health.

7.2 Conclusion

To conclude on the data found throughout the study, the researcher aims to identify whether students are adaptable to remote learning. The findings identify a positive outcome from the students. The information provided shows that students are adaptable to remote learning from the understanding of the researcher. The study finds information relative to the four main topics outlined throughout the study. From assessing the literature, findings and comparing the data outlined in each. The researcher cones to the conclusions that National College of Ireland students had a positive experience with remote learning. From assessing the main research question, the final paragraph will conclude the paper by outlining the findings from the sub-category questions outlined in Chapter 3.

Chapter 3 outlines the following questions:

1. How effective is the technology that students are using within their remote learning routine?

2. How prepared are the users involved in the remote learning environment?

3. Does remote learning have an effect on the students mental health?

4. Are students affected by remote learning?

5. Would remote learning be a sustainable long term solution for students?

6. Would blended be a reasonable option for students in the future?

The researcher finds that the technology that students are using is effective within their remote learning routine, although further training is needed among lecturers and with students and their hardware. The users are prepared to a good extent, although further research and education is needed to ensure there is an optimal learning outcome. Remote learning itself did not have a direct effect on the students mental health. The literature found that students were affected by personal experiences and relative Covid-19 impacts on their life. Although stress levels became higher, the majority of students managed these stress levels adequately. Students are not directly affected by remote learning with their mental health and assessment. Although the majority of students would possibly continue with remote learning, the outcome of a blended learning routine seems more suitable for students to ensure their academic and social needs are being met. Finally, this correlates with the previous question to outline that students would be open to the possibility of a blended learning routine.

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