

An Exploration into Educator's Awareness and  
Implementation of Universal Design for Learning within an  
Irish Higher Education Institution

By

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# Dissertation Cover Sheet



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## **Dedication**

This dissertation is dedicated to my parents, Sarah and James, for their encouragement, always believing in me, and supporting me through my educational journey. They instilled in me a passion for learning and a value for education from a young age, an opportunity never awarded to them. They taught me to aspire to achieve my goals, and with hard work, dedication and self-belief, you can accomplish anything. This dissertation is dedicated to my Dad, who is no longer with us but is smiling down upon me and busting with pride; my promise to you is fulfilled.

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## **Abbreviations Used**

**HE** – Higher Education

**T&L** – Teaching and Learning

**CAST** - Centre for Applied Special Technology

**UD** – Universal Design

**UDL** – Universal design for Learning

**PD** – Professional Development

**CPD** – Continued Professional Development

**AHEAD** – Association Higher Education Access and Disability

## **Abstract**

Universal Design for Learning (from herein referred to as UDL) is a tried and tested framework. There is a building research evidence base to tell us it works. This paper explores the awareness and implementation of UDL within a Higher Education (HE) institution's teaching practices.

In recent years, responding to student diversity has become a key priority in education systems. Attributable to the broader diversity, one of the most significant challenges facing educators is engaging and supporting a vast and diverse group of students. Now more than ever, teaching practices must adapt to reflect the changing landscape of higher education. UDL has become a key pedagogical approach to promoting inclusive and equitable education in response to diversity, and it is slowly and implicitly emerging in Higher Education teaching practice. This study aims to ascertain educators' awareness of UDL and explore the area of implementation within HE teaching practice to establish if Intuitional improvement and professional development to enhance educators' skill sets for working with diverse learners are required.

This research presents an in-depth review of the literature, using primary research conducted with educators in one Higher Education institution with four geographical locations in Ireland. It brings insights into educators' awareness of UDL and the implementation within HE teaching practice and establishes best practices in supporting and engaging educators in UDL practices. The research methodology utilised for this study follows a pragmatic approach using mixed methods. The data collection methods involved an online survey (quantitative) and semi-structured interviews (qualitative). The above methods were chosen to gather the essential data for achieving the information and the research objectives.

The research finds there is a high level of awareness and implementation of UDL but an inconsistency in the participation of formal PD in UDL; in addition, confidence in the implementation of the framework is quite varied.

The study makes several recommendations to Higher Education to bridge the gap between awareness, implementation and best practice in supporting, encouraging and engaging educators in UDL practices.

**Keywords: Universal Design for Learning, UDL awareness, implementation, professional development, Higher Education, best practice.**

# Chapter One: Introduction

## 1.1 Title

An Exploration into Educators Awareness and Implementation of UDL within an Irish Higher Education Institution.

## 1.2 Overview

This dissertation consists of five chapters. It covers the purpose of the study, the research objectives, the literature review, the research methodology approach, data analysis, discussion and findings, overall conclusions and recommendations presented for the future provision, and further study is outlined. This chapter aims to introduce the purpose of the research, relay the significance of the study and provide a synopsis of the research objectives.

## 1.3 Purpose of the study

This study explores UDL awareness and implementation within higher education teaching practice. UDL is a relatively new concept within Higher Education, with some educators building on their own formal or informal continued professional development, which could result in variable UDL awareness and implementation. Due to increasing levels of diversity in classrooms, educators should be equipped with knowledge of UDL and supported and encouraged to incorporate it into their practice and develop curricula that support students effectively. An educator's knowledge and understanding of UDL can improve the quality of the learning environment for all students (Meyer et al., 2015).

## 1.4 Significance of the study

This research aims to ascertain educator's awareness of UDL and explore UDL implementation within teaching practices. It will determine whether institutional improvement and professional development to enhance educators' skills sets for working with diverse learners is necessary and identify the best approach for engaging/supporting educators in UDL Practices.

## 1.5 Research Questions

- To ascertain lecturer's awareness of UDL
- To explore UDL implementation within teaching practice
- Identify what is the best practice for supporting/engaging educators in UDL practices

# Chapter Two: Literature Review

## 2.1 Introduction

This chapter outlines the literature and its relevance to the research objectives and explore aspects of UDL including how it evolved, the concept, definitions, its promise, the framework's principles, and will culminate in the evolving and diverse needs of the 21st-century learner in Higher Education (from herein referred to as HE).

The literature looks at what UDL is, engaging best practices in UDL with an emphasis on professional development (from herein referred to as PD) and implementing UDL within teaching practices challenges and gains.

## 2.2 What is Universal Design for Learning?

### 2.2.1 Concept

Frederic (2021) advises that the origins of UDL lie in the earlier concept of universal design (UD) that emerged from architectural design of buildings in the 1970's. Buildings were designed to allow full access and usability for all who entered them. This innovation informed legislation that UD was required in all public buildings to make them fully accessible to the broadest range of users, including people with disabilities. UD became revolutionary, and its impact spread beyond architecture to product manufacturing and services development. The model has since been applied to learning. UDL allows maximum inclusivity regarding the increasingly diverse student population of today. Physical access to classrooms and educational facilities was an important first step toward accessibility within education. Many began to embrace the philosophy of inclusion by physically including students with disabilities in the classroom. However, this did not ensure equal access to the general curriculum or opportunities for students with disabilities to benefit from what the classroom offered.

Founded in 1984, The Centre for Applied Special Technology (CAST) has earned international recognition for its development of innovative, technology-based educational resources and strategies. In the 1990s, Anne Meyer, David Rose and their colleagues at CAST introduced UDL, a framework to improve teaching and learning (T&L) based on insights from the learning sciences (e.g. cognitive neuroscience, educational physiology) and creative uses of digital technologies. UDL helps educators create flexible curriculum that can be presented in multiple formats so that the content is accessible and appropriate for students with diverse backgrounds, learning preference and abilities, in turn,

improving and optimising the learning experiences for all individuals (Meyer et al., 2015). Canter et al. (2017) states that UD created a way to help everyone, no matter their circumstances, to navigate and function in the physical world. UDL creates these same opportunities in learning.

### 2.2.2 Definition of Universal Design for Learning

The Centre for Applied Special Technology (CAST) define UDL as:

“A set of curriculum development principles that give all individuals equal opportunities to learn. UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone—not a single, one-size-fits-all solution but flexible approaches that can be customized and adjusted for individual needs.” (Canter et al., 2017 pg.3)

UDL is as a set of principles and techniques used in classrooms, along with planning and design of accessible instructional materials. These principles guide alternative ways for students to participate using different modes of representation, action and expression, and engagement.

Spencer (2011) states that UDL is being proactive in designing accessible lessons for all learners, not just those with additional needs. Lesson design helps everyone in the class and provides improved access to the curriculum for all. According to AHEAD (2017), UDL aims to improve the educational experience of all students by introducing more flexible methods of teaching assessment and service provision, catering for the diversity of learners in classrooms.

### 2.2.3 UDL and Its promise

UDL is an approach to learning, teaching and assessment design that is proactive in addressing varied identities, competencies, learning strengths and needs of every learner in the learning environment (Flood 2021). It is a T&L approach that gives all students equal opportunity to succeed. UDL is about ensuring a variety of pathways (choice and flexibility) are offered to students for understanding content, goals are clear and specific to the expected outcome and student assessment is flexibly designed to enable every student to demonstrate their knowledge, values, understanding and skills in a variety of ways (Meyer et al., 2014). UDL has the potential to promote engagement and independence for students to become what Meyer et al. describe as ‘expert learners.

Its core principles for learning and teaching are based on learning sciences, how humans learn. The UDL approach is underpinned by research in neuroscience and designed to improve all students' learning environment, experience, and outcome (Meyer et al., 2015). According to Spencer (2011), UDL is characterized as a proactive educational pedagogy, encouraging inclusion and equitable access for all learners. Under the UDL approach, curriculum materials, activities and instruction are designed with flexibility to match learner's strength and needs so that all students can access what will be delivered in class.

A UDL perspective embraces instructor creativity in developing teaching strategies and assessment techniques that are effective for all learners while maintaining the integrity of the course and achieving its objectives. It creates a learning culture where diversity is accepted and embraced, where all students are encouraged to learn and demonstrate their knowledge in a variety of ways (Bernacchio, C., & Mullen, M. 2007). Boothe et al. (2018) reflects that UDL is necessary to meet the needs of the growing diversity in today's college classrooms.

#### 2.2.4 Principles of Universal Design for Learning

The framework captures ideas and theories from brain research, cognitive-social learning and studies of multiple intelligences and learning preferences. It combines them with well-articulated core principles, informing educators on ways to meet the needs of diverse learners in today's classrooms (Alnahdi et al., 2014). The framework is based on three brain-based neural systems involved in learning: recognition systems that identify patterns and objects, strategic systems that tell us how to do things and effective systems that determine what is important and provide motivation for learning (CAST, 2011).

Three primary principles guide UDL (CAST 2011). UDL approach to instruction includes multiple means of engagement, multiple means of representation, and multiple means of action and expression. Within the three principles there are 9 guidelines and 31 checkpoints (CAST 2014). These provide educators with specific pedagogical strategies for breaking down barriers to the learning process for all students. The principles, guidelines and checkpoints are organised from the most general principle to the most specific checkpoints. See Table presented in Appendix 1

UDL guidelines and checkpoints align to this neurological framework and help educators address the predictable variability in learning, which will be present in any environment. UDL is not intended to

meet the needs of every student in the classroom but is designed to make the curriculum accessible for the majority of students (Meyer et al., 2015)

The (CAST) framework provides three fundamental learning guidelines:

The first is to provide **multiple means of representation (The What of Learning)**. At the core of this principle is how individuals perceive and comprehend information differently. By presenting instructional materials in flexible ways, educators will reach students and meet their needs more effectively. UDL addresses the fact that there is no one form of representation that will work for all learners and educators need to present lesson content in a variety of ways (Mavrovic-Glaser2017).

The second principle is to provide **multiple means of action and expression (The How of Learning)**. This principle creates flexibility, allowing students to demonstrate their understanding or express their learning knowledge. The way students approach learning tasks to express what they have learned significantly varies from person to person (Hall et al., 2012). UDL acknowledges that learners interact with material differently and should be given opportunities to show what they have learned in ways that suit their individual needs (Dell et al., 2012).

**Multiple means of engagement (The Why in Learning)** provides various means for student interaction and involvement. Students come from various cultures, individual experiences, background knowledge and interests. Student motivation to engage or interact is impacted strongly by diversity in the same way it drives the previous two principles. Educators must consider diversity and provide opportunities for all to be engaged and motivated to learn (Dell et al., 2012). According to Mavrovic-Glaser (2017), tasks, activities, and information should be culturally and socially relevant, age and ability appropriate, and allow for active participation exploration. Boothe et al. (2018) described it as a network focus on actions taken by both students and faculty to increase active participation in learning material. An educator must have a varied approach to engaging the student, and students should have choice in how they reach the learning objective. The most appropriate way for achieving this is facilitating interactive activities, group work, discussions, and class forums.

### 2.2.5 21<sup>st</sup> Century Higher Education, Teaching & Learning

The first two decades of the 21st century have altered many aspects of life—diversity, inclusion, technology, and individuality, to name just a few. Canter et al. (2017) claims that changes in society

prompted by advances in technology are occurring faster than ever, creating circumstances that warrant change in education.

According to the Higher Education Authority (HEA) research, students enrolled in third-level institutions rose from 209,000 in 2014 to 245,000 in 2020. The total number of undergraduate entrants to third level in 2020 increased by 6 per cent on the previous year, the largest annual number of new entrants to date. Students enrolling in higher level education increased by almost 17.5 per cent over the past six years.

National Strategy for Higher Education 2030 (2011) agrees that new entrants into Irish HE will double over the next twenty years. This increase is especially true for Ireland, which the IUA highlights as the most highly educated state in the EU, with overall student population expected to rise by 40,000 by 2030.

Pathways and access to HE are now more accessible, reflecting broader diversity in HE (National-Access-Plan-2022-2026, 2021). Students entering HE in 2020 availed of alternative entry routes including Disability Access Route (DARE) and Higher Education Access Route (HEAR). An inclusive HE system is a national and European priority and a longstanding national policy priority in Ireland (National-Access-Plan-2022-2026, 2021). According to Flood (2021), education in Ireland is at a critical stage in review and redevelopment across all sectors. 21st-century classrooms contain students who learn differently and upgrading our education system's offering to reflect that change is a priority.

HE is now at the point of transition. The number of people entering HE is growing and student profiles are changing. Those entering HE will have diverse learning needs and HE will need to innovate and develop to provide flexible opportunities for larger, more diverse student cohorts (National Strategy for Higher Education 2030, 2011). The varied needs of learners create demands that today's lecturers must address within teaching practice.

The National Strategy for Higher Education 2030 (2011) presents the idea that positive engagement with HE improves quality of learning experiences, and the environment in which students learn can shape the future development of society.

The National Strategy for Higher Education 2030(2011) also emphasises that quality of training of academic staff is continually reviewed as part of a robust performance management framework. Every student should learn in a high-quality learning environment informed by research, scholarship and up to date practice and knowledge. HE institutions must ensure that teaching staff are qualified and competent in T&L and should support ongoing development and improvement of their skills. The past decade has seen a significant advance in T&L in Irish HE in the availability of PD programmes in T&L, developments in technology-supported learning and the adoption of new forms of pedagogy for greater student engagement. However, they are not uniform or consistent across HE and the challenge is converting best practice into standard practice. It is not sufficient for academics to just be experts in their disciplinary area, they need to know how to teach and understand learning theories and apply them to their practice. There is demand on educators to stay abreast of latest evidence-based practices and be keenly aware of the needs of their students.

According to Quality and Qualifications Ireland (QQI) (QQI, 2022) UDL is now a national priority for the further and HE sector, with clear commitments to the "UDL approach in shaping its future provision". UDL is embedded in the Future FET: Transforming Learning, The National Further Education and Training strategy 2020 -2024 and strongly features in a newly released National Plan for Access to Higher Education. According to Canter et al., (2017) an education system and environment that utilises UDL meets the needs of inclusive classrooms and diverse learners. Developing an inclusive educational environment and preparing all students for higher academic aspiration and progression is essential in 21st-century teaching practices. It is also crucial for educators to learn how to develop and lead a 'cultural change process' within the classroom. Frederic (2021) claims UDL is hailed as a revolutionary lens that allows the campus to shift its efforts to create inclusive environments

## 2.3 Engaging Best Practice in UDL

### 2.3.1 UDL in the Higher Education Context

UDL in Ireland has been primarily reserved for HE and is often associated with support services for students with disabilities. The promotion of UDL has become more prevalent over the last number of years (Padden, 2021) and is gaining momentum in Ireland, evidenced by its increasing appearance across Irish educational literature from primary to post-secondary education and pre-service teacher training (Hick et al., 2020). Although UDL is gaining momentum, it is a new concept in HE. Educators must change how they think about educational practice and how diverse students are included in

higher education (AHEAD, 2017). Padden, (2021) emphasises that more work is needed to ensure the principles of UDL are implemented in classrooms.

The 2015 National Goals Conference brought together educational researchers to guide research, practice, and policy. Based on promising research and trials, one recommendation urged the field to identify effective personnel preparation and PD practices that ensure general and special educators can implement a UDL framework (Thomas, Cain, & Walther-Thomas, 2015).

The National Forum for Teaching and Learning in Higher Education, the national body responsible for advising and leading the enhancement of T&L in Irish HE, focus on PD of those who teach and learn in the digital world (National Forum, 2021). UCD Access for Lifelong Learning and Association for Higher Education Access & Disability (AHEAD) facilitated and jointly developed the UDL digital badge as part of the National Forum's PD framework. The UDL digital badge provides participants with a solid introduction to the UDL Framework, allowing them to implement UDL approaches within their teaching activities. This programme is available in HE and Further Education and training sector and has the largest national rollout of UDL-CPD ever conducted in Ireland. Participants also have the opportunity to complete a facilitator's badge, allowing institutions to build a core group of facilitators on campuses who can promote UDL among staff. (Ryder, 2021) states PD plays a key role in the transition to a UDL campus. According to Fixsen et al. (2009) PD remains the primary method for educators to expand their repertoire of effective practices and learn how to implement those practices in the classroom.

### 2.3.2 Professional Development for UDL

PD training is critical to ensuring educators keep up with new T&L strategies. Through PD, educators can make changes to their lecture styles and curricula to better suit the needs of their students. PD also helps educators become better at planning their time and staying organised. (Flood and Banks, 2021) acknowledges PD helps educators move away from thinking in terms of ability and disability and the traditional practice of retrospective differentiation, to proactive planning for variability requiring change in lecturer mind-sets about difference, diversity, equity, and inclusion. For change to be successful, and change in teaching Practice, lecturers need to be supported through effective professional learning (Flood and Banks, 2021)

HE quality is heavily influenced by educator performance and PD has a significant positive impact on educator performance (Okafor and Blessing, 2021). Educators must update their knowledge and skills to remain relevant in a rapidly changing world. Canter et al., (2017) conducted a study on PD on UDL and its practical applications to the classroom through the use of technology. The study focused on changes in educators' knowledge and perceptions of UDL and changes to instructional practices, including the use of technology in teaching. Participants completed a pre-survey with three sections (experiences with UDL, Instructional practices and technology integrations). Canter et al., (2017) found that perceptions and conceptualisations of UDL, implementation of UDL principles in the classroom and using technology appropriately and effectively to support UDL increased across the board for all participants. At the pre-survey stage, 29% of educators could identify the three principles of UDL. On the completion, 93% could identify the principles. The highest percentage of change among the participants were those in inclusion classes with overall gains of 56-96%.

Participants highlighted increased awareness of their thinking processes concerning student needs and strengths before lesson planning and the value of using that information to prepare for active participation by all students in the classroom. Participants felt completing PD around UDL made them mindful and challenged themselves to proactively design lessons to meet the needs of diverse learning preferences and learning levels using various strategies, technologies, and other resources. Participants also highlighted that co-teaching partner/model helped plan UDL principles and technology integration. It offered built-in support and resources for teachers learning how to apply UDL principles and learning modern technologies, making it easier to make changes to teaching practice. There was also an increase across the board integrating technology components focusing on student engagement.

Canter et al., (2017) concluded when educators are offered time and resources for training and planning, they will shift their instructional practices to reflect universally designed instructional settings that better meet the needs of their students. This study's trend showed promising results in demonstrating that the UDL framework with the inclusion of technology along with adequate support and training resulted in instructional practices that were more inclusive of diverse learners across educational settings. (Canter et al., 2017 pg.14)

### 2.3.3 The Benefits of Professional Development and Instructional Gains

Rao et al., (2014) reviewed three studies around UDL Education models that examined the outcome of instructors' training to integrate UDL into the curriculum.

Dymond et al., (2006) conducted a study to redesign curriculum involving changes to instructional delivery, organisation of the learning environment, student participation, materials, and assessments. Educators redesigned their lesson plans based on the core ideas of UDL. The study found many positive outcomes for teachers and students. Particularly for students with disabilities who showed an increase in social skills, participation, completion of work and grades. Spooner et al., (2007) conducted an experimental study on the effects of training in UDL on lesson plan development of special and general educators in college classrooms. The study found a simple introduction to UDL (1-hour training) resulted in considerable growth in an educator's ability to design lesson plans accessible for all students. He states PD may lead to effective change in the implementation of UDL and inclusive practices. Ellen McGuire-Schwartz and Arndt (2007) conducted a case study with teachers on applying UDL from theory to practice. Thirty-seven candidates used action research to implement UDL participants reported that using the principles of UDL frequently benefited their lesson plans and the students with whom they worked.

A recent study conducted by Craig et al., (2022) showed educators who attended a weeklong summer institute on UDL (73) scored and performed higher in UDL implementation than those who did not participate (70). Results showed improvements in planning, establishing goals, identifying, and removing barriers and providing improved comprehension opportunities to the students through the UDL guidelines.

Most people agree that effective PD on UDL can influence teaching practice with instructional gains. However, a study conducted by Capp (2020) looks at teacher confidence to implement the principles, guidelines, and checkpoints of UDL which shows that teacher knowledge, understanding and confidence is influenced by professional learning and engagement. An educator may feel confident implementing a specific pedagogical strategy outline in the UDL framework but may not implement it effectively within the classroom. This study demonstrated how confidence in implementation varies and that PD in UDL should not be a general workshop with teachers examining the broader underlying principles. The needs of the participants should be identified before PD commences and a target focus placed on the specific principles, guidelines, and checkpoints. There needs to be a laser-like focus on elements of the framework. He believes a target focus will increase confidence in implementation.

#### 2.3.4 Organisational change – Introducing UDL

One of the challenges in implementing effective change is how changes are implemented. Irish HE currently lacks a coherent sector-wide framework, including baseline standards for inclusive teaching practices. The need for vision and strategies on implementing UDL comes from the top down (AHEAD, 2017). Bracken and Novak (2019) state that a systemic approach with key leadership support results in a higher quality of teaching, learning and better standards across the institution. UDL and inclusion encompass all facets of college life, not just teaching and learning (Martin, 2017). HE acknowledges the systemic nature of organisational change required in introducing UDL is the first key factor for success.

Current foundations for building UDL across education are inadequate (Draffan et al., 2017). Advance HE (2019) states that the 'Student Voice' is key to researchers and policymakers planning progress towards UDL. Layer (2017) is vague about student involvement but recognises the need to engage staff in cultural changes at institutional and sectoral levels. Everett (2017) and (AHEAD, 2017a) both agree that stakeholder buy-in is critical to the success of inclusive T&L practices. Layer's (2017) report recognises that embedding UDL in HE cannot happen overnight. Draffan et al. (2017) suggests that UDL can only be achieved if approached strategically and viewed as an evolving national, organisational, and professional journey. Policymakers and managers at various levels in HE Institutions must consider this when creating visions and implementing UDL as a key concept for inclusion. Management's responsibility is thinking top-down based on knowledge and influence from all stakeholders. (AHEAD, 2017) (See table Appendix 2)

Aligning with the Bracken and Novak (2019) study in identifying ground rules for implementing UDL in HE, AHEAD's 'Licence to Learn' Guidelines exemplify a recent European initiative that emphasises stakeholder involvement to 'create a sustainable and coherent policy through clear visions and strategies (AHEAD, 2017c)

The AHEAD protocol poses a series of questions, including those listed below. Enabling comparison by requiring colleges to respond to the same questions.

- Do you have an over-arching institutional policy for inclusive T&L?
- Are you using the expert knowledge of the diverse learner?
- Do all understand a clear and challenging vision for UDL?
- Have sustainable strategies at all levels been implemented?

- Have you developed action plans for implementation coherent with budgets and other necessary plans?
- Have you used/developed a system for evaluation and quality assurance? Can your policies, procedures, and methods for evaluation with outcomes be internally and externally scrutinised? (AHEAD, 2017)

The opportunity to embed a more inclusive approach to education is challenging but needs to be taken within HE. As discussed in the literature, PD plays a vital role in implementing change within teaching practice. AHEAD (2017) acknowledges that creating spaces for reflection and collaboration is an integral part of an educator's implementation of UDL. Craig et al., (2022) believes the institute's structure that embeds modelling, practice, content connections and other vital elements to facilitate teacher understanding and subsequent classroom application is essential. Also, giving teachers the opportunities to reflect on practices, ask questions, align their instructional and classroom needs and expectations (Wu, 2010).

#### 2.4 Implementing UDL in Teaching Practice

Research exploring the application of UDL is limited. HE in Ireland operates with a mixture of aspects of UDL in relation to pedagogy and delivery (Martin, 2019). Teachers' positions and how they approach teaching are critical factors for successfully enacting initiatives to improve inclusive education (Flood and Banks, 2021). Implementing UDL requires prepared readiness to change how educators view diversity and adapt learning and teaching accordingly.

When it comes to Implementing UDL into teaching practices, Rao et al., (2014) states it can be applied to any grade level, subject area and learning environment. There is no required number of checkpoints that need to be included for the instruction to be considered UDL-based (Rao et al., 2014).

McGuire and Scott, (2006) argues that implementation of UDL ideally should be carried out a module design or re-design stage and notes that:

*“While faculty are legally required to provide reasonable accommodations for students with learning disabilities who request them and provide documentation to verify the need for such, too often the process becomes one of retrofitting changes and accommodations to a course (p. 22).”*

Padden (2021) agrees, emphasizing retrofitting or adjusting anything while already in use is more challenging and far less effective than building in at the design stage. Implementing UDL strategies in a new module is ideal. However, when reviewing existing modules and considering student performance and feedback, UDL strategies can be considered to increase student engagement and inclusion.

Studies around educators' knowledge, readiness, and confidence to enact UDL revealed not all educators have comprehensive knowledge and understanding of UDL and shared opinions with Edyburn (2010) who questioned how educators could implement a concept they could not define. Edyburn (2010) also claims UDL is more complex than originally thought and educator's confidence varies in relation to implementing this inclusive pedagogical framework. Capp (2020) conducted a study which revealed educators were least confident engaging with multiple means of engagement and with checkpoints and guidelines relating to engaging students. It highlighted educators were most confident providing students with multiple means of representation. This could be because multiple means of representation are about teacher choice in how they present their lesson plans and content. In contrast to the other two principles where student voice and agency come to the forefront. These findings compare with an Irish study by Gronseth and Dalton (2019) on UDL initial teacher training (ITE) which revealed that 25 of the participants were confused by the principle of multiple means of representation and found UDL guidelines difficult to follow, with too much information to process. Both studies showed varying levels of confidence in relation to the UDL framework.

Alquraini and Rao (2020) assessed teachers' knowledge, readiness and needs to implement UDL in classrooms. This study revealed barriers and challenges to educators' readiness to enact UDL, including lack of knowledge and belief in UDL. Results showed 50% of respondents did not know much about UDL, 75% were not practising UDL in their classrooms and 61% had no training in UDL. Results also revealed lack of teacher collaboration, especially between teachers and special education teachers.

Lowrey et al., (2017) discussed inclusion and learners with intellectual disability (ID). The results showed positive stories about the classroom having a sense of belonging. Students were engaged by having choice, autonomy seeking help from each other, creating collaboration and community. However, they found it concerning that several teachers did not believe UDL requires planning, that

UDL is simply good practice and something they already do. According to Lowrey et al., (2017) teachers felt they were not as successful as they wanted to be at providing access, participation, and progress for all students. The researchers concluded about the knowledge/use of UDL for general education teachers and claims that varied understanding and implementation of inclusive education and the varied understanding and implementation of UDL hinders the ability to measure the effectiveness of UDL in inclusive settings.

Seok et al., (2018) reported a systematic review on the effects of empirically based studies on the implementation of UDL for all students confirms the concept to be effective for post-secondary students. UDL was reported effective for all students, including students with a disability. Most implementation strategies focused on training the participants in designing courses based on the framework and principles of UDL. The second most common approach was to implement it in the classes, and thirdly collaborative work was used as an implementation strategy.

As the research confirms, implementing UDL in teaching practices benefits both educators and learners. While incorporating UDL is necessary for future-proofing teaching practice, specific barriers and challenges to UDL may surface.

#### 2.4.1 Challenges to Enact UDL

The literature shows that a lack of evidence-based research into the effectiveness of UDL, especially concerning student outcomes, is a challenge promoting and implementing UDL as an effective approach to inclusive education practices (Flood and Banks, 2021). While Edyburn (2010) believes UDL holds considerable promise, he argues that adopting theory to practice is challenging. He believes that once educators understand the principles, they are left to figure out how to apply and implement UDL themselves.

Craig et al., (2022) believe demands on educators' time and limited resources allocated for PD during the academic year could be barriers to enacting UDL. His study suggests considerations for summer PD workshops to further the implementation of the framework.

Canter et al., (2017) reported from their study that participants highlighted several challenges implementing UDL including lack of time, larger caseloads, lack of funding, anxiety about learning modern technology and producing ideas for students with significant needs. Participants also expressed demands on educators in general making it challenge to be flexible, creative and learn new

things. Participants said they would like ongoing specific training sessions on preparation for implementation of what they have learned. Also, a chance to visit classrooms where UDL is modelled and integrated well and more ways of sharing ideas with faculty. Participants agreed PD appeared to help with the aspect of time. "Learning things faster than they would have on their own" (Canter et al., 2017, Pg13).

However, some educators see UDL as another fad that will pass and allow them to return to, or continue with, what is comfortable and familiar. Edyburn (2010, pg. 38) reports hearing the statement, "Many teachers are already doing UDL; they just don't know that's what it is called". He refutes the notion that effective teachers have a natural trait that allows them to implement UDL without knowing what they are doing. Like any other integrative cognitive skill, he emphasizes that UDL must be recognised as a learned skill, refined overtime to produce an elevated level of performance. Despite the challenges, many of these studies conclude that with support and despite time issues involved, the results of UDL outweigh the effort and "without a doubt, UDL holds considerable promise" (Edyburn, 2010, pg. 40)

## 2.5 Summary

UDL is a scientifically validated research-based framework that supports teaching practice and the diverse 21st-century learners' needs. HE lecturers should not only be aware of it, but should be implementing it into all aspects of teaching practice. The research shows the importance of UDL and its benefits, its need in 21st-century teaching practice, the vital importance of PD for educators, and a lack of understanding & implementation. The study conducted by Alquraini, and Rao (2020) revealed that barriers and challenges to teacher readiness to enact UDL included a lack of educators' knowledge and belief in UDL. Lowrey et al., (2017) study with general education teachers brought forth evidence that teachers are underprepared for diversity in their classrooms. In addition, education around the concept of UDL and inclusive education varied. However, research conducted by Canter et al., (2017), Craig et al., (2022) and Capp (2020) shows that if teachers are made aware, trained, and confident in the framework of UDL, they will integrate and engage in teaching practices that are inclusive for all students. UDL has also proven beneficial to teachers in designing learning opportunities/lesson plans and instructional methods for students in the studies conducted by Spooner et al., (2007) & Dymond et al., (2006).

# Chapter Three: Methodology

## 3.1 Introduction

This chapter presents the methodology used in conducting research for this study. The use of methodology is determined by 'what do I need to know and why?' and what is the best way to collect information? (Bell, 2005). This chapter discusses the philosophy supporting the research objectives, research approach, design methods and methods used for collecting data. It also discusses ethics, the significance of reliability and validity, and the limitations detected. The researcher adopted a mixed-methods approach, the most relevant and appropriate approach to attain the study's objectives. A survey was carried out with educators in one HE institution to gauge awareness and implementation of UDL within teaching practice and to identify a sample of educators implementing UDL. Semi-structured interviews were carried out with educators identified as implementing UDL to explore the area of UDL implementation within teaching practice.

## 3.2 Research Objectives

Research objectives are clear and specific goals that the researcher intends to achieve through the study (Kumar, 2012). The proposed research question explores the awareness and implementation of UDL within HE teaching Practice. Saunders et al. (2003, p.3) claims "research, is something that people undertake to find out things in a systematic way, thereby increasing their knowledge.

There are three strands of enquiry in this research study

1. To ascertain lecturer's awareness of UDL
2. To explore UDL implementation within teaching practice
3. Identify what is the best practice for supporting/engaging educators in UDL Practices

## 3.3 Research Philosophy

Research philosophy is belief about the ways in which data about a phenomenon should be collected, analysed, and used (Dudovskiy, 2022). Research approach is reinforced by research paradigms. A research paradigm is a model on which research is built and selected by considering factors, such as, the research questions. When considering this research approach, it was crucial to understand both quantitative and qualitative paradigms. The research philosophy selected and applied to this research was pragmatic approach. Becoming a pragmatic researcher enables the researcher to be flexible in

their investigative techniques and in a better position to use qualitative research to inform the quantitative portion of research studies, and vice versa (Johnson and Onwuegbuzie, 2004).

There are two main research paradigms: positivism/post-positivism and interpretivism/constructivism. The theoretical framework behind quantitative research is positivism/post-positivism and behind qualitative is interpretivist/constructivist. According to Creswell (2014) Positivism/post-positivism is known as the scientific quantitative method and interpretivism/constructivism qualitative methods best suits addressing research where all the variables may not be known, and further exploration is required.

Quantitative (positivism/post-positivism) consists of surveys/questionnaires, which allow for the collection of substantial amounts of data from a sizeable population. Quantitative research has been criticised as not being encompassing enough to fit social research. Cohen et al. (2017) touched on the limitations of positivism/post-positivism when the research relates to the study of human behaviours. Analysis of statistical data does not allow for analysis of human behaviour and experiences behind the answers. These limitations can be counter balanced by using a phenomenological approach (Qualitative research). In phenomenological research, the researcher identifies the 'essence of human experience' (Creswell 2014, p. 7). Qualitative (interpretivism/constructivism) consist of interviews, focus groups, observations recordings made in natural settings documents and artifacts and is to understand situations or phenomena.

Mixed Methods, known as the third research paradigm, is underpinned by pragmatism and is based upon the belief that different paradigms & methods have different strengths and for certain situations their combined strength result in improving the depth, and accuracy of the findings (Cohen et al., 2007). Mixed methods can also help bridge the gap between quantitative and qualitative research (Johnson and Onwuegbuzie, 2004).

In some situations, qualitative or quantitative methods may be more appropriate, but in many cases, combing the two can produce a superior product.

### 3.4 Research Approach

There are three strands of enquiry in this research study

1. To ascertain lecturer's awareness of UDL
2. To explore UDL implementation within teaching practice
3. Identifying what is the best practice for supporting/engaging educators in UDL Practices

The researcher chose to conduct the research using a Mixed Methods approach. A mixed methods approach is the process of mixing quantitative and qualitative methods of research. The reason researchers combine quantitative and qualitative in a single research design is because different methods complement one another. The strengths of both quantitative and qualitative methods combined strengthens may give a better understanding the study. Both quantitative and qualitative research techniques are needed to gain a more complete understanding of phenomena (Johnson and Onwuegbuzie, 2004). A mixed methods approach was adopted here as the research questions required different methods (Quantitative and Qualitative) to achieve the best possible result.

Bryman (2021) acknowledges that one approach can allow researchers to sample respondents or cases for the other approach. When considering a mixed method approach a researcher must also consider design and sequence. Creswell and Plano Clark (2011:2018) cited in (Bryman, 2021) identify three core designs – the convergent design, the explanatory sequential design, and the exploratory sequential design.

An exploratory sequential design was adopted for this study. Exploratory sequential design is associated with investigations and involves first collecting qualitative data and then quantitative data. The design can also use quantitative research to follow up qualitative findings. Bryman, (2021) pg. 24 states, “the qualitative element does not always have priority in this design”. Hence, the researcher has chosen exploratory sequential design in the sequence using quantitative research to follow up qualitative.

This mixed method study addresses the awareness and implementation of UDL within HE teaching practice. The purpose of this exploratory sequential design is to first ascertain a consensus quantitatively (online survey) on educators' UDL awareness using a large sample size of the population and to identify a smaller sample size of educators implementing UDL within teaching practices. The

second strand of this research is to explore the smaller sample size specified in the survey as implementing UDL within their teaching practice.

Quantitative research describes an approach to knowledge but is implicitly an assessment of the nature of reality post-positivism. Understanding rather than explanation is sometimes regarded as the objective of post-positivist enquiry the role of the researcher as interpreter of data is fully acknowledged, as is the importance of reflexivity in research practice (Fox, 2008). Where the objectives of a research study are primarily exploratory, particularly when perceptions and feelings are important, semi-structured interviews are a useful approach because of the ability to explore multiple leads and probe for more information or request clarification matching with the constructivist nature of the research. (Bisman and Highfield, 2013). Researchers such as Aberbach and Rockman, (2002) suggests that the use of unstructured or semi-structured formats is preferable when interviewing highly educated professionals because of the degree of respect these individuals expect.

### 3.5 Research Design & Collection Methods

#### 3.5.1 Pilot phase

The researcher conducted a pilot study for both survey (Quantitative) and semi-structured interviews (Qualitative) prior to the main trial of the research study. A pilot study asks whether something can be done, should the researchers proceed with it, and if so, how (In, 2017). The pilot study was undertaken to test the feasibility of the research instruments. A pilot study is important for the improvement of the quality and efficiency of the main study (In, 2017).

The pilot was performed as an external study independent of the main research. Participants were recruited and obtained consent for participation. Three educators agreed to participate in testing the feasibility of the quantitative survey, and one educator agreed to test and judge the questions involved in the semi-structured interviews.

Feedback from the pilot phase identified vague or unnecessary questions and informed changes in the survey structure. All suggestions were considered, and the recommended changes were made to the study.

#### 3.5.2 Quantitative Data – Online Survey

For the quantitative study, an online survey was distributed to all lecturing staff in one HE institution with four geographic locations in Ireland, using Microsoft forms. The survey was used to gather data around UDL awareness and implementation within teaching practice. According to Cohen et al., (2007)

surveys gather data at point in time with the intention of describing the nature of existing conditions, identifying standards against which existing conditions can be compared or determining the relationships that exist between specific events.

The researcher chose an online survey to access a broader and larger population and sample. For respondents' convenience, they could complete the survey at a time that suited them. Online surveys are becoming the predominant survey method through email, superseding paper-based surveys and becoming commonplace in many branches of educational research (Cohen et al., 2017). In early April 2022, the researcher distributed an introductory email briefing the research and invited educators to participate in the study with an embedded hyperlink to the survey. A participant information sheet (see Appendix 3) and a consent form (see Appendix 4) was attached for the participant's perusal. Participants were asked to review both documents before proceeding with the survey, as consent would be required to participate in the study. Educators were informed that participation in the survey was voluntary, and they could refuse to participate or withdraw from the research at any time without giving a reason. Participants were assured that their identities remain confidential; all data gathered was anonymous and recorded using a coding system, which would then be stored on the researcher's computer with password encryption. The survey went live in April 2022 and remained live for ten days.

The purpose of the survey was to capture statistical data to understand/gauge educators' awareness of UDL, who was implementing UDL within their teaching practice and had they participated in continued PD for UDL. Rea (2014) states surveys can be used to gather data to understand people's behaviours and beliefs. Cohen et al., (2017) claim surveys can be exploratory in which no assumptions or models are postulated, and relationships and patterns are explored. The researcher used attitude scales, rating questions and avoided open-ended questions (with only two, which were optional) (See Appendix 8 – Survey Questions)

For the quantitative study, the aim was to capture statistical data with a focus on demographic information, overall awareness of UDL, how educators learned about UDL, PD around UDL and implementation of UDL.

Cohen et al., (2017) explains that surveys help gather information, data on attitudes and preferences, beliefs and predictions, opinions, behaviours, and experiences both past and present. The researcher recorded the survey results in Microsoft Forms with password encryption.

### 3.5.3 Qualitative Data - Semi structured interviews

Semi-structured Zoom interviews were informed by the quantitative data gathered. Participants were chosen from those who indicated in the online survey that they would be interested in taking part.

In advance of the interview, educators were sent a participant information sheet (see Appendix 5) and a consent form (see Appendix 6). Participants were asked to review both documents as consent would be required before participation in the study. Participants were assured their identity would remain anonymous. Participants were coded as EA (Educator A), EB (Educator B) etc. The interviews were recorded/transcribed via zoom. The data was coded and analysed, saved and password protected on the researcher's computer guaranteeing data confidentiality. The participants were assured that the data gathered as part of this research would be destroyed after graduation or in 24months, whichever comes sooner.

Semi-structured interviews were chosen as it presented the researcher with comparable responses from the participants, as each interviewee will be asked the same questions (Wisker 2008). This gave a broader perspective from the educators Implementing UDL within their teaching practice. It provided the researcher with opportunities to obtain rich, detailed data based on their insider experience, insights, and expertise in the area (Wisker 2008). The questions asked were used to collect reasonable evidence to address the research questions and were based on the information gathered in the literature review and further elaboration on topics that arose from the survey (see Appendix 11 - research questions and the rationale for their inclusion).

The interviews explored each educator's opinions, beliefs, and views. Participants were asked how they became aware of UDL and what motivated them to implement UDL into their teaching practice. In addition, they were asked about being involved in the design stage of their module, their confidence, challenges, and gains in implementing the framework within their teaching practice, what effects, if any, they believe it has had, and if they have any evidence. In addition, their views on engaging/supporting best practices for UDL.

Open questions allowed the participants to openly express their thoughts through detailed responses without restriction or leading (Bell, 2005). Each Interview lasted, on average, 30 minutes. The use of zoom recording and transcription technology enabled the researcher to focus entirely on the interview process without any distractions, i.e., taking notes, so the information gathered was captured accurately

## 3.6 Data Analysis

This section gives a review of the quantitative and qualitative data analysis undertaken in this research study.

### 3.6.1 Quantitative Data Analysis

Creswell and Creswell, (2017 Pg. 147) acknowledge that “quantitative design provides a description of trends, attitudes and opinions of a population, or tests associations among variables of a population, by studying a sample of that population”. The researcher designed the survey for the population upon which the survey was focused and with the responses for analysis in mind. Survey designs help researchers answer three types of questions; descriptive questions, questions about the relationship between variables and questions about predictive relationships (Cohen et al., 2017). For the purpose of this study, the statistical analysis that was implemented on the data set was descriptive statistics. The data was analysed using Microsoft forms and Microsoft Excel. Descriptive statistics were calculated to express general findings and data was arranged using graphical and narrative formats to report frequencies of the findings.

### 3.6.2 Qualitative Data Analysis

Analysis of Qualitative data is concerned with “how to move from the data to understanding, explaining and interpreting the phenomena” (Taylor and Gibbs,2010, p.1) cited in (Cohen et al., 2017 Pg. 643). It involves organising, describing, understanding, accounting for, and explaining data, making sense of the data in terms of the participants definitions of the situations (Cohen et al., 2017). The researcher collected data through five semi-structured interviews. The interviews were recorded and transcribed using automatic zoom transcription and saved on the researcher’s computer. The next stage of the process involved, content analysis and coding. “Content analysis means you identify the main themes that emerge from the descriptions given by respondents in answer to questions “(Kumar, 2018 Pg. 297) “Coding is the process of breaking down segments of text data into smaller units then examine, comparing, conceptualizing and categorizing the data” (Cohen et al., 2017 pg. 668). Before conducting the content analysis and coding, it was important for the researcher to read and re-read the data to obtain a thorough understanding of the meanings/key issues and make sense of the text. Qualitative data analysis is not straightforward and is often heavy on interpretation (Cohen et al., 2017). The researcher studied the transcripts and used open coding to label and categorise text in which important statements were drawn out, followed by axial coding to find the relationships between categories. Coding qualitative data is extensive and careful deductions is key (Cohen et al.,

2017). The data was synthesised into categories and themes, to construct the narrative and provide the research findings.

A codebook was formed in an excel spreadsheet (password encrypted) recording themes and developing response patterns for analysis. Thematic analysis was used and the themes that emerged appear in the main findings of this study. The last stage of the analysis process involved the interpretation of the data and was presented using the narrative approach. Cohen et al., (2017) state narrative approach and biographical approaches are powerful ways in presenting qualitative data. (Bruner 1986 cited in Cohen et al., 2017 pg.664) remarks that humans make meaning in terms of 'storied text', which catches the vividness of human experiences and the multiple perspectives and lived realities of participants. Narratives can not only convey information but also bring information to life. Each theme that unfolded from the research study was interpreted using the narrative approach connecting responses from all the participants.

### 3.7 Validity and Reliability

Validity is an important key important key in effective research; if a piece of research is invalid, then it is worthless (Cohen et al., 2017). Reliability is a term for dependability "can we believe the results" for research to be reliable, it must demonstrate that if it were to be carried out on a similar group of respondents, in a similar context, similar results would be found. (Cohen et al., 2017).

Researchers must be certain the instruments for understanding the phenomena are as sound as possible and that they are valid. To maximise reliability and validity, from a quantitative perspective, conducting online surveys brings with it the problem of honesty. (Cohen et al., 2017) asks if respondents are really telling the truth about themselves and about the matter in which they have been asked to respond. Fowler (2009) cited in (Cohen et al., 2017) reports that respondents may not understand or misunderstand a question, they may not recall accurately or they may not want to disclose information and might give a socially desirable answer rather than the true answer, which can affect reliability. To ensure reliability and validity the researcher conducted a pilot study to eliminate questions that were vague or unnecessary and to ensure questions were clear and concise. The researcher ensured participants anonymity, strict confidentiality and security/safely of their data. Cohen et al., (2017) agrees that by piloting questionnaires and the guarantees of anonymity and non-traceability might attenuate such problems.

Qualitative studies tend to be more subjective in nature the reliability can be challenging as the researcher is dealing with meanings rather than statistics. The researcher adopted four of the following strategies cited in (Cohen et al., 2017) from the works of Lincoln and Guba (1985), Huberman & Miles (1998) and Teddie & Tashakorori (2009)

1. **Reflexivity and control of bias** – The researcher throughout this study has been self-aware and practiced self-reflection as a tool to minimise potential bias as much as possible when interpreting data.
2. **Triangulation** –The researcher used triangulation in this study, which required the researcher to look at the phenomena through different lenses, using multiple methods. By using multiple methods bridges the issues of reliability and validity collecting data from multiple sources (Cohen et al., 2017)
3. **Peer debriefing** – The researcher used peer debriefing with a disinterested peer in a manner akin to playing "devil's advocate" to test & challenge the researcher's honesty, working hypothesis and to identify the next steps in the research. Involving an interpretation beyond the researcher & invested in another person adds validity to an account (Cohen et al., 2017).
4. **Weighing the evidence** – The researcher insured that the correct attention was given to higher quality data and less attention was paid to low quality data

### 3.8 Limitations of study

This research was limited to one Irish third-level institution, distributed to all lecturing staff in four geographical locations. Limitations and challenges to the study were that not all staff participated in the online study so the findings could not translate across all faculties/institutions resulting in the findings not being generalised.

### 3.9 Ethical Considerations

According to (Kumar, 2018) ethics is defined as “the moral values of professional conduct that are considered desirable for good professional practices”. A research proposal outlining research aims, produce & nature of the research was submitted to seek approval & acceptance. Permission was

received from the Griffith College ethics committee to undertake the research, granted in mid-February 2022 (see Appendix 7). Observing ethical practices when conducting research and recognising informed consent is the cornerstone of ethical behaviour (Howe and Moses 1999).

Each participant received a participant information sheet and consent form (see Appendix 3 to 6). The information sheet outlined the undertaken research, voluntary participation in the study, and how the researcher would include the results in the overall findings. Participants were informed they could withdraw from the research, at any time, up until the analysis of the findings. Kumar and Wideman (2014) emphasizes participants must be made aware and provided with information that is required of them, why the information is being sought, what purpose it will be used for, how they are expected to participate in the study and how it will directly or indirectly affect them. The information sheet addressed confidentiality concerning the data gathered. Participants were made aware that the data would be stored securely. Data was recorded using excel and stored on a hard drive that is password protected and backed up on an encrypted USB memory stick.

### 3.10 Summary

This chapter has described and analysed the chosen Methodology for this research study. The steps chosen in the research methodology were established on the most appropriate way of achieving the research objectives. The steps included research philosophy, research approach, and the design and collection methods and data analysis. The study gave full account of conducting the research through a pragmatic research philosophy, selecting mixed methods using Quantitative (post-positivism) and qualitative (constructivist) approaches. An online survey and semi structured interviews were used for data collection and gives a detailed account of the data analysis for both research instruments.

This chapter also stressed the significance of reliability and validity and addressed limitations of the study and ethical issues.

# Chapter Four: Analysis

## 4.1 Introduction

This chapter presents the findings of the primary data, which was collected, analysed, cross-checked and disused with the information identified in the literature review. It is divided into two parts Quantitative and Qualitative data finding and analysis. Initially, this chapter examines the results from the online survey to ascertain the awareness of UDL. Secondly, questions and topics that arose from the survey, are presented and discussed for further elaboration in the semi- structured interviews.

## 4.2 Quantitative Data Findings and Analysis

This section addresses the objective aims establish the awareness and implementation of UDL within HE teaching practice.

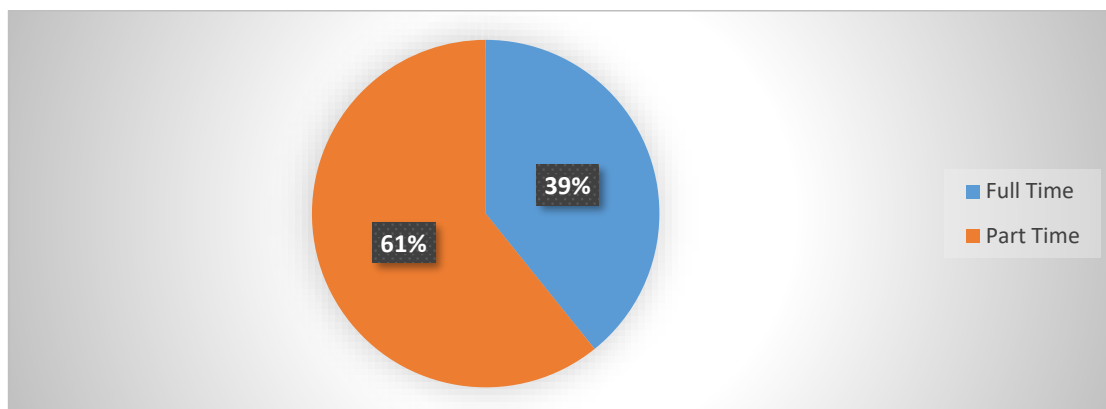
### 4.2.1 Demographics

There were 51 respondents in this survey several questions were asked to show the demographic of respondents, as illustrated in the next heading?

### 4.2.2 Employment status

61% of respondents are working full time in education while 39% are working part time.

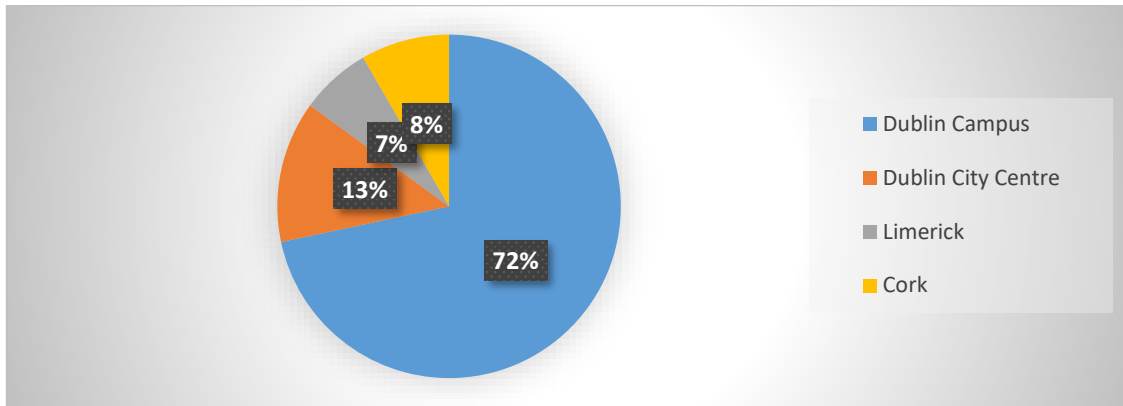
**Fig 4.1**



### 4.2.3 Campus

72% of respondents are teaching on the Dublin campus, 13% in Dublin City Centre, 8% in Cork and 7% in Limerick.

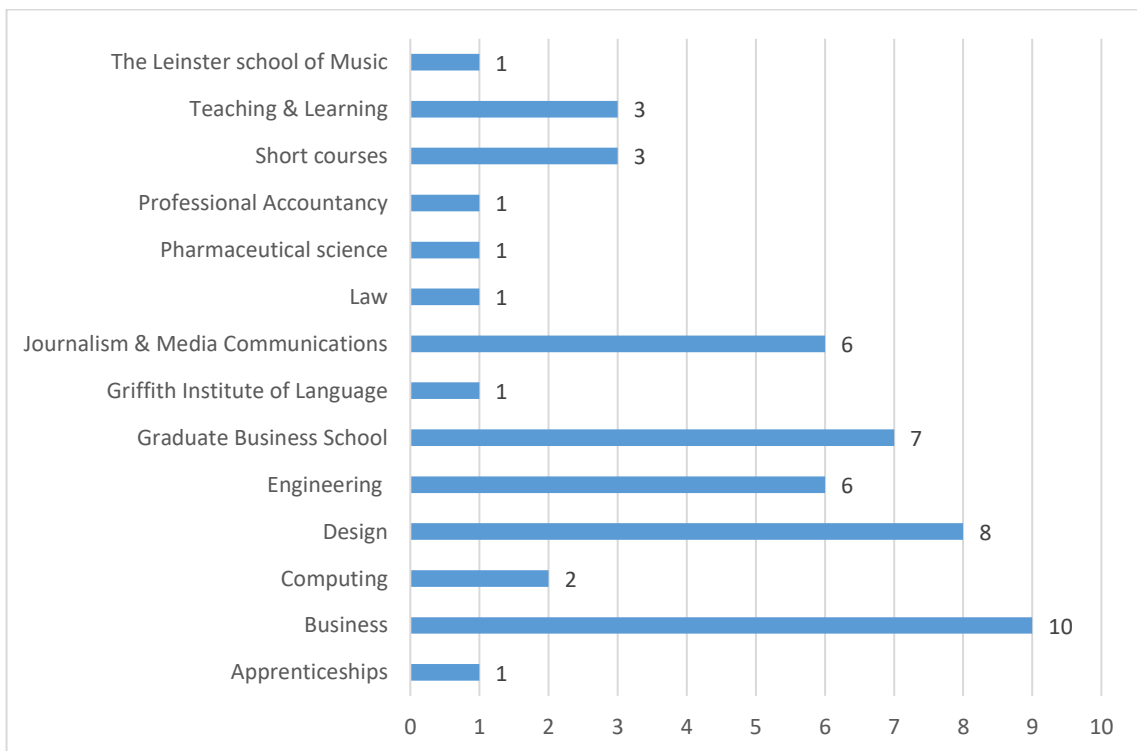
**Fig 4.2**



### 4.2.4 Faculty

The survey included respondents from 14 faculties across the four campuses

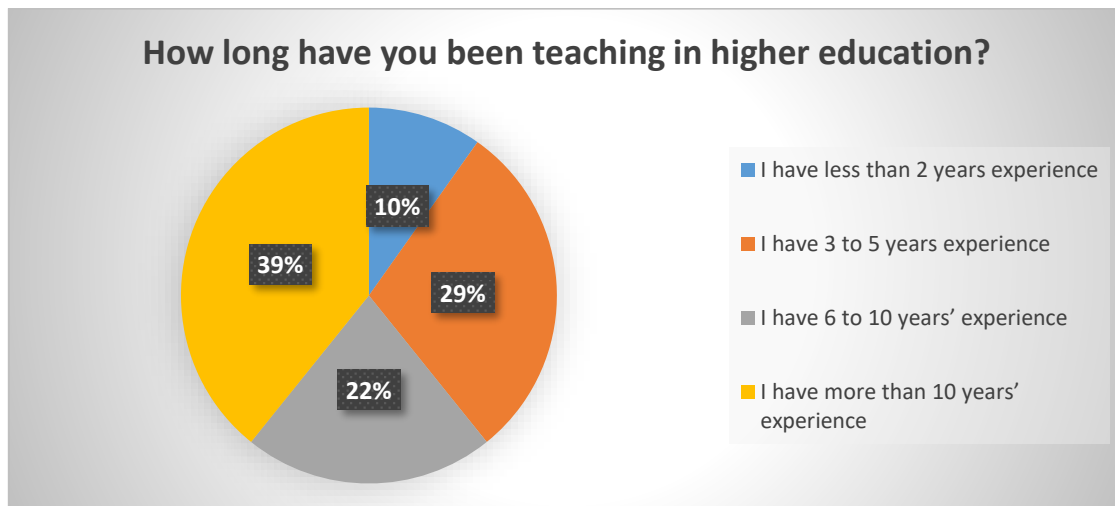
**Fig 4.3**



#### 4.2.5 Teaching Experience

10% of respondents have less than 2 years' experience teaching at third level and 39% have more than 10 years' experience.

**Fig 4.4**



#### 4.2.6 Teaching Qualifications

When participants were asked about their level of education, 65% hold a level 9 Masters qualification, 4% have a level 10 doctoral qualification, 17% hold a level 9 postgraduate qualification, 12% hold a level 8 higher degree and 2% hold a level 8 higher diploma (Fig 4.5)

The National Strategy for Higher Education 2030 (2011) emphasises that the quality of teaching of academic staff must be continuously reviewed as part of a robust performance management framework. Every student should learn in a high-quality learning environment informed by research, scholarship and up to date practice and knowledge. Respondents were asked specifically about qualifications attained in education, learning and development.

A high percentage of 43% of participants have not attained a teaching qualification (Fig 4.6). The literature shows that HE institutions must ensure that all teaching staff are qualified and competent in T&L and should support the ongoing development and improvement of their skills. Teaching practice in HE should reflect learning preferences and different disciplinary areas. It is not sufficient for academics to be experts in their disciplinary area; they also need to know how to teach and understand learning theories and how to apply them to their practice (National Strategy for Higher Education 2030, 2011). These results show an area for further discussion or review.

Fig 4.5

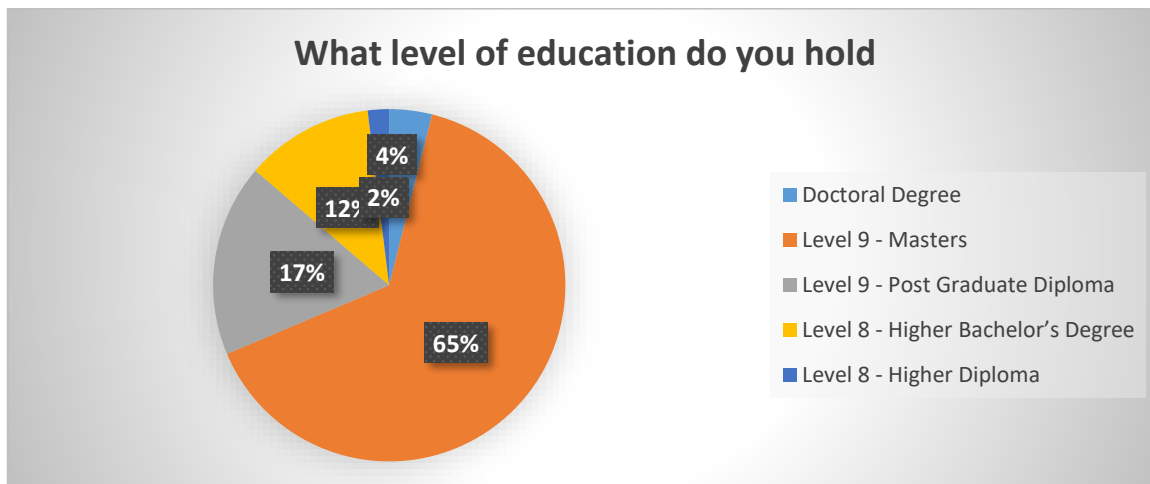
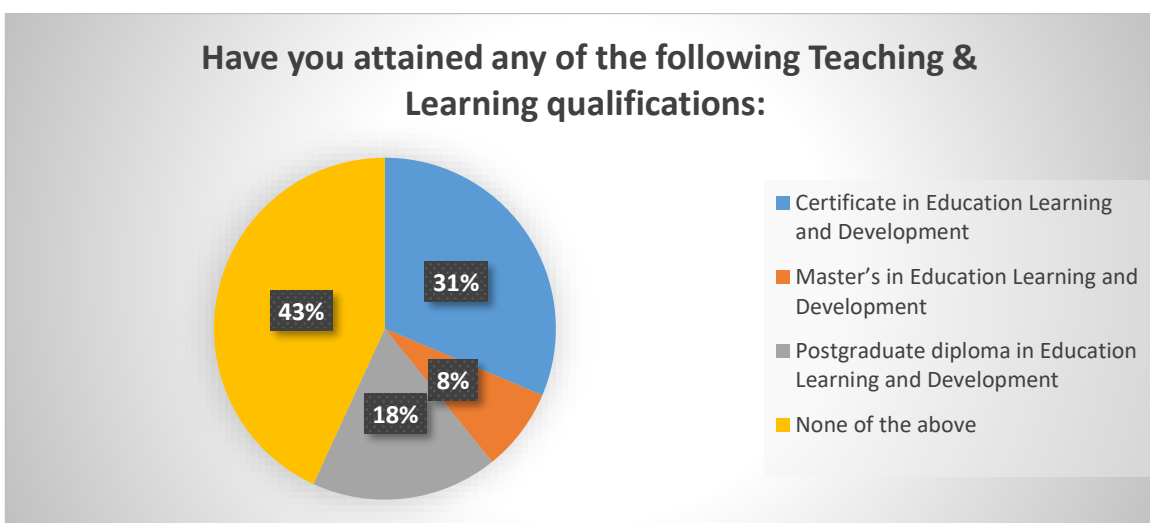


Fig 4.6



### 4.2.3 Awareness

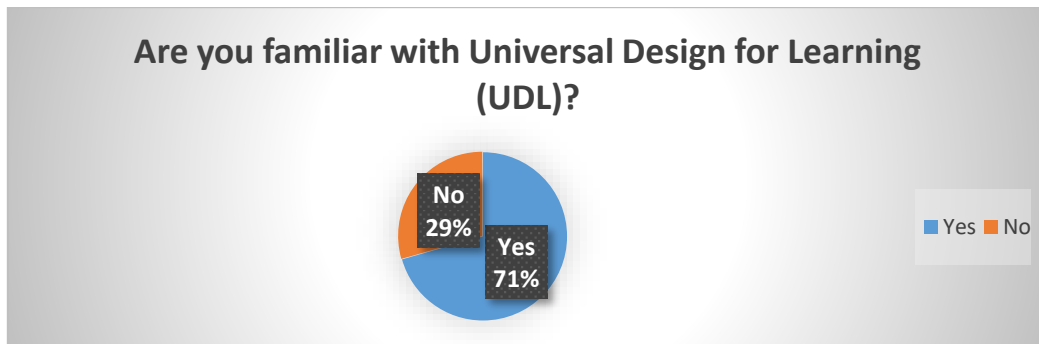
The following questions focused on awareness around UDL.

#### 4.2.3.1 Familiarity with Universal Design for Learning (UDL)

The participants were asked two questions regarding their awareness of UDL. How familiar they are with UDL, and they were asked to rate their level of familiarity. Figure 4.7 shows the results of the educator's familiarity with UDL. The results showed a prominent level of awareness with 71% of

participants confirming they were familiar with UDL. 29% were not aware of UDL. This aligned with the research highlighted by Padden (2021). The promotion of UDL has become more prevalent over the last number of years and is gaining momentum in Ireland, evidenced by its increasing appearance across Irish educational literature from primary to post-secondary education and pre-service teacher training (Hick et al., 2020)

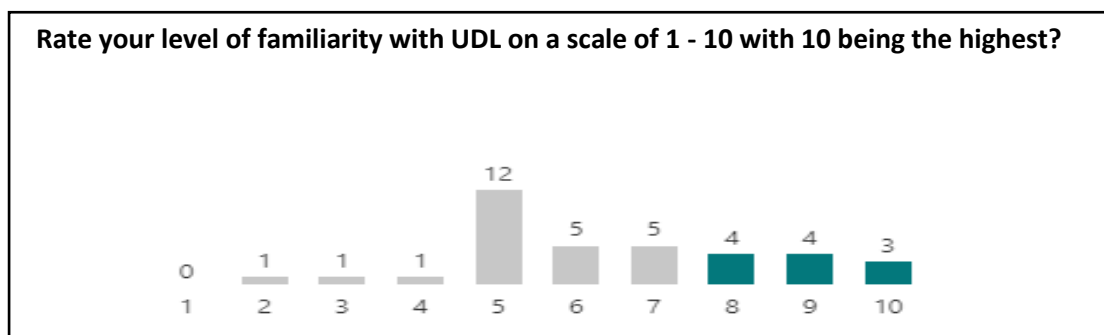
**Fig 4.7**



#### 4.2.3.2 Level of familiarity with UDL - Rated

Of the 71% who identified that they are familiar with UDL, only 31% rated themselves on the higher end of the scale within 8-10 of being extremely familiar with UDL. There was a vast difference in the levels of familiarity, which were rated between 2-10. See figure 4.8. The overall average fell to 6.44. Although there was a prominent level of familiarity, the result revealed a varied response when participants were asked to rate how familiar they were with UDL. These results aligned with the literature, in which Padden (2021) emphasises that much more work is needed to ensure that the principles of UDL are implemented in classrooms and lecture theatres.

**Fig 4.8**



#### 4.2.3.3 Unfamiliar with UDL

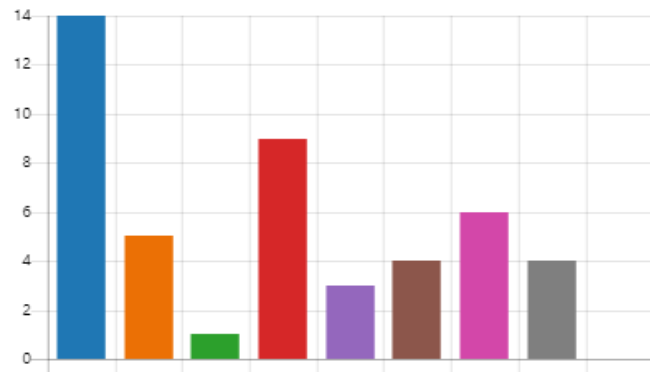
Of those who answered no to being familiar with UDL, participants were asked to choose strategies that they extensively use within their teaching practice. There were 29 strategies of choice, which educators selected several times. These strategies aligned with the guidelines and three principles of UDL. It is clear from the data that, although those educators did not feel that they have an awareness of UDL, they are unconsciously and regularly incorporating a wide variety of strategies that are considered the "guidelines to UDL" without knowledge or understanding of what UDL is. This raises the question of whether it can be considered UDL if they are not trained in UDL. Edyburn (2010) questioned how educators could implement a concept they could not define. He stated he often hears the statement, "Many teachers are already doing UDL; they just don't know that's what it is called". He refutes the notion that effective educators have a natural trait that allows them to implement UDL without knowing what they are doing. Like any other integrative cognitive skill, he emphasises that UDL must be recognised as a learned skill refined over time to produce an elevated level of performance. If these educators were trained in UDL, their potential with the heightened awareness around lesson planning and the advancement of their instructional skills would greatly enhance their practice. Spooner et al. (2007) noted that if educators received PD on how to incorporate the principles and vital elements of UDL, this might lead to effective change in the implementation of UDL and inclusive practices. Canter et al., (2017) indicated that PD increases awareness of educators' thinking processes concerning student needs. Completing PD around UDL makes them mindful and constantly challenging themselves about proactively designing lessons to meet diverse learning preferences and learning levels, using various strategies, technologies, and other resources. If these educators are implementing elements of UDL without being conscious that it aligns with UDL, one can imagine the positive impact it would make on their teaching practice if the awareness of UDL were prevalent.

Participant's selected strategies under the following headings: multiple means of representation (Fig 4.9), multiple means of action and expression (Fig 4.10) and multiple means of engagement (Fig 4.11).

**Fig 4.9**

**Do you use any of the following strategies to offer learners various ways of acquiring information and knowledge? (Choose all that apply) – Strategies that align with multiple means of representation.**

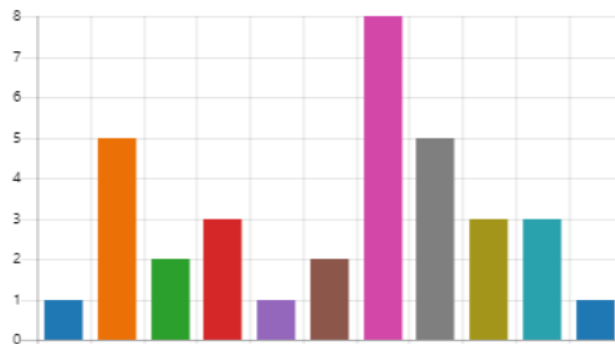
- Visual media (e.g., video clips, ... 14
- Teach background informatio... 5
- Auditory media (e.g., digital, ... 1
- Varied instructional materials (... 9
- Multiple views or print format... 3
- Use of cues and prompts to dr... 4
- Supports (e.g., outlines, graphi... 6
- Help students connect what t... 4
- None of the above 0



**Fig 4.10**

**Do you use any of the following strategies to allow students to express what they know? (Choose all that apply) – Strategies that align with multiple means of action and expression.**

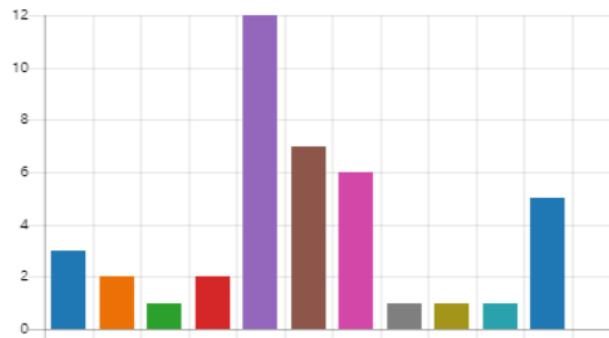
- Vary the methods for student ... 1
- Optimise access to tools and a... 5
- Assignments use multiple me... 2
- Use multiple tools for constru... 3
- Build fluency through graduat... 1
- Present different approaches, ... 2
- Use of supports and scaffolds ... 8
- Assessments use multiple me... 5
- Prompts to "stop and think" b... 3
- Tasks or activities are different... 3
- None of the above 1



**Fig 4.11**

**Do you use any of the following strategies you use to engage students? (Choose all that apply) – Strategies that align with multiple means of engagement**

- Tasks are related to student in... 3
- Assignments have varied level... 2
- Students have a choice in whi... 1
- Students have grade guideline... 2
- Individualised feedback to sup... 12
- Opportunities to share and de... 7
- Student choice of flexible wor... 6
- Student choice of activities to ... 1
- Student choice in content (e.g... 1
- Student choice in tools (e.g., b... 1
- Activities were allowing for act... 5
- None of the above 0



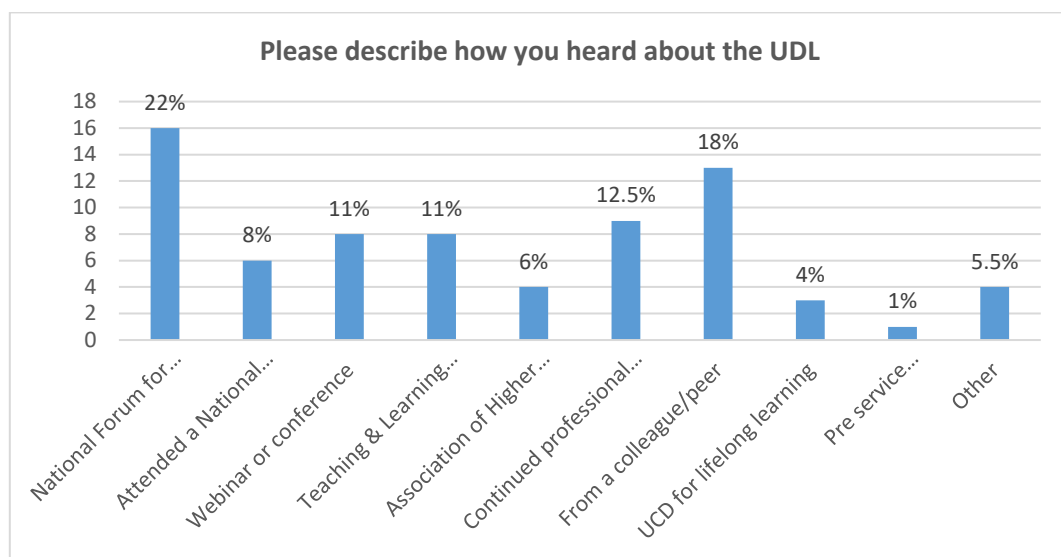
#### 4.2.3.4 Describe how you heard about UDL

Fig 4.12 shows many respondents have heard about UDL heard through the National Forum for Teaching & Learning (22%). Second was from a colleague or peer (18%) and third was CPD outside the national Forum (12.5%). The National Forum accounts for the majority who heard of UDL through CPD of its professional development framework. The literature states “The National Forum for Teaching and Learning in Higher Education is the national body responsible for advising and leading the enhancement of teaching learning in Irish HE. Their focus is on the PD of all those who teach and learn in the digital world (National Forum, 2021)”.

The literature acknowledges that PD is the most prominent way to learn about UDL. Fixsen et al. (2009) stated that PD remains the primary method for educators to expand their repertoire of effective practices and learn how to implement those practices in the classroom. Flood and Banks (2021) emphasise that PD helps educators move away from thinking about ability and disability and the traditional approach of retrospective differentiation to proactive planning for variability, requiring a change in lecturer mind-sets about difference, diversity, equity, and inclusion. The second highest result was hearing about UDL from colleagues or peers, which showed a high percentage of 18%. This percentage needs further investigation. A concern would be our participants hearing about UDL from

colleagues/peers and then trying to implement UDL within their teaching practice without any formal PD, giving the knowledge and essential foundations of the framework or are they proactively seeking PD in the area? How do we ensure that educators move from hearing about UDL from colleagues/peers and proactively engaging in PD. Edyburn (2010, pg. 38) emphasises that like any other integrative cognitive skill, UDL must be recognised as a learned skill and refined over time to produce an elevated level of performance. The results show that all awareness around UDL should be directly moving towards a CPD angle.

**Fig 4.12**



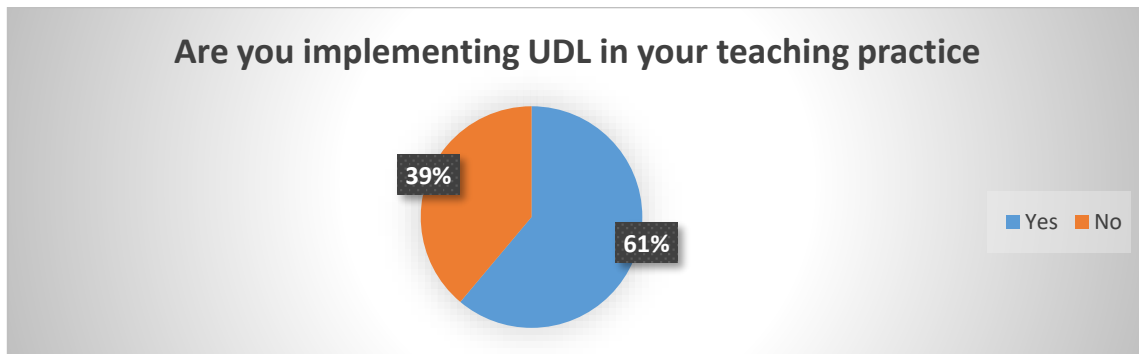
#### 4.2.4 Implementation & Confidence of UDL within Higher Education Teaching Practice

The following questions focused on Implementation of UDL in Teaching Practice in Third Level

##### 4.2.4.1 Implementation of UDL

The participants were asked if they were implementing UDL within their teaching practice. The results showed that 61% of participants said yes, and 39% said no.

Fig 4.13

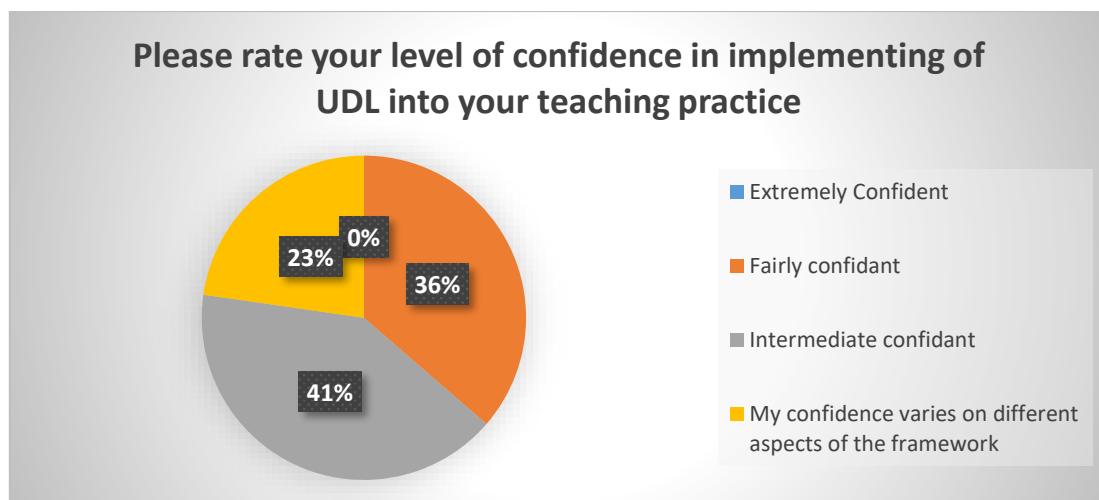


#### 4.2.4.2 Confidence Level around Implementation

The results of the previous question revealed a prominent level of UDL implementation within HE teaching practice. Participants were then asked about to rate their level of confidence around implementing UDL. Confidence levels were quite varied. 41% stating their confidence was intermediate, 36% fairly confident and 23% indicated their confidence varied across the various aspects of the framework. Interestingly, no one chose extremely confident.

The results aligned with the literature Capp (2020), Gronseth and Dalton (2019) and Edyburn (2010). These studies showed varying confidence levels concerning the foundations principles, guidelines and checkpoints and that educators' confidence varies concerning implementing this inclusive pedagogical framework. These results led to further investigation into educators' confidence, which was conducted in the qualitative section of this study.

Fig 4.14



#### 4.2.4.3 Implementing UDL within Teaching Practice

Participants were asked to describe some of the ways they are implementing UDL in their teaching practice. Responses included giving opportunities for learners to demonstrate their learnings in multiple formats, providing options for comprehension, expression, and alternative forms of assessment for all learners, introducing choice for assessment, developing Moodle pages to ensure they are more accessible and using various forms of lecture delivery, offering materials in different formats - text, audio, video

A common thread appearing from the analysis shows that participants seemed to focus and be more confident in providing students with multiple means of representation and multiple means of action and expression. This reiterates the concern raised by Capp (2020) that educators are least confident engaging with principle one, providing multiple means of engagement and with the checkpoints and guidelines in the other two principles that are related to engaging students. His study revealed educators were most confident in providing students with multiple means of representation. This could be because the principle multiple means of representation can be about teacher choice in how they present their lesson plans and content. Capp (2020) study demonstrated that educators' confidence in implementation varies and that PD in UDL should not be a general workshop with teachers examining the broader underlying principles. He stated the needs of the participants concerning UDL should be identified before PD opportunities are offered and a targeted focus placed on the specific principles, guidelines, and checkpoints. In other words, there needs to be a laser-like focus on elements of the framework. He believes a targeted focus will help increase confidence in implementing UDL. Confidence in Implementing UDL strategies across the framework was further explored in the qualitative section of the study.

#### 4.2.4.4 Not Implementing UDL within Teaching Practice

Those respondents who indicated that they were not implementing UDL in their teaching practice were asked if there were any reasons as to why they were not. The results revealed an interesting point, with educators expressing their willingness to want to implement UDL within their teaching practice. Their primary concern was time, viability, and time to commit to PD. These results aligned with the literature as Canter et al. (2017) highlighted from their study that participants encountered several challenges with implementing UDL, including lack of time, larger caseloads, lack of funding, anxiety about learning modern technology and producing ideas for students with more significant

needs. Craig et al. (2022) believes the demands on educators' time and the limited resources allocated for PD during the academic year could be barriers to enacting UDL. Participants also highlighted that they were including elements of UDL but were unsure if they were doing enough to be able to say they were implementing UDL.

Time being a barrier was the main obstacle highlighted in the responses. It was the perceived idea of how much time it would take to implement UDL. Educators need to be reassured they can start small and build with implementing UDL within their teaching practice. Rao et al., (2014) states that it can be applied to any grade level, subject area and learning environment e.g. (face to face or online). There is no required number of checkpoints that need to be included for the instruction to be considered UDL-based (Rao et al., 2014).

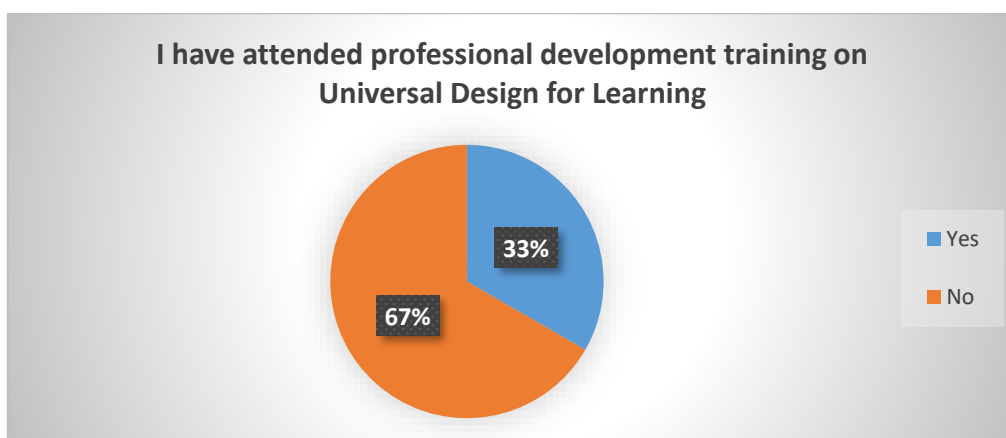
#### 4.2.5 Professional Development

This section will look at participation in PD around UDL.

##### 4.2.5.1 Attendance at Professional Development Training on UDL

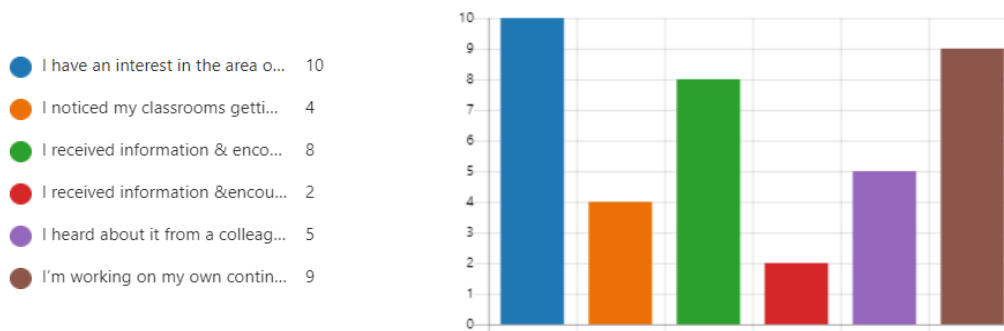
Of the respondents who initially identified themselves as being aware of UDL, only 33% have completed PD in this area (Fig 4.15). Okafor and Blessing, (2021) believes that HE quality is heavily influenced by the quality of educators teaching and the PD process has a significant positive impact on performance. Flood and Banks (2021) claim for change in teaching practice to be successful lectures need to be supported through effective PD. Ryder (2021) agrees that PD plays a key role in the transition to a UDL campus.

Fig 4.15



For those who did attend PD in UDL (Fig 4.16), the main reasons were; an interest in inclusive education (26%), working on their own CPD (24%) and encouragement from the college accounted for 21%. Currently, foundations for building a picture of UDL across the sector are inadequate (Draffan et al., 2017) but AHEAD, (2017) believe the need for vision and strategies on how to implement UDL comes from the top down. Everett (2017) and Mitchell (2014) reached similar conclusions; both agree that stakeholder buy-in is critical to the success of inclusive T&L practices.

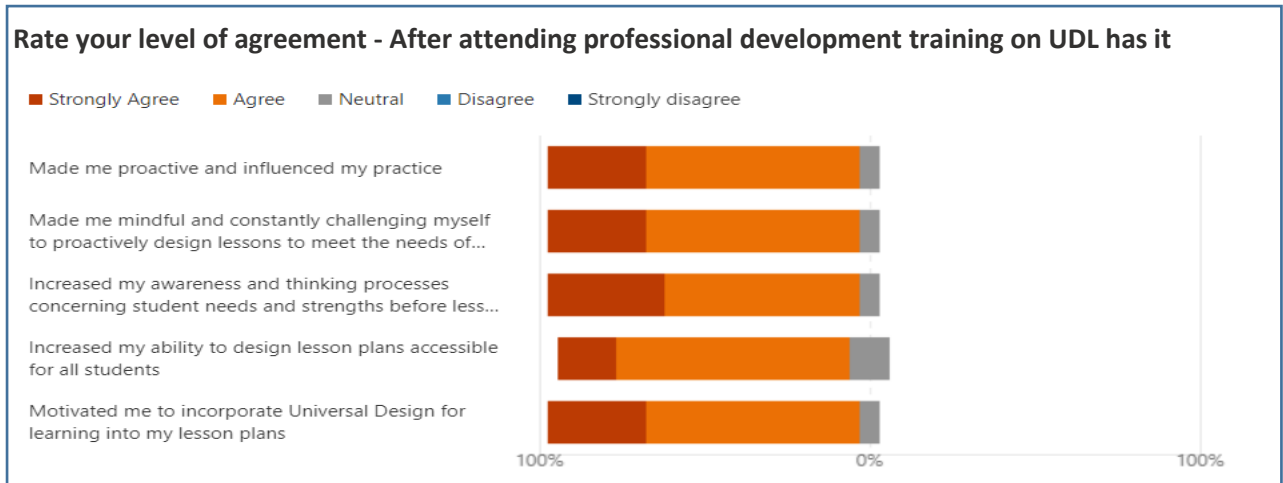
**Fig 4.16**



#### 4.2.5.2 Rate your level of agreement with the following statements - after attending professional development training on UDL

The following five statements, taken from the literature of Canter et al. (2017) study on PD training on UDL and its practical applications to the classroom through the uses of technology, were put to the participants and they were asked to rate their level of agreement with each statement. Canter et al. (2017) state that PD leads to effective change in the implementation of UDL and inclusive practices. After rating their level of agreement with the statements, the results showed over 90% of respondents selected either agree or strongly agree with each of the statements (Fig 4.17). This shows that completing PD has a considerable influence on educators' teaching practice. Canter et al. (2017) concluded when educators are offered the time and resources for training and planning, teachers can, and will, shift their instructional practices to reflect universally designed instructional settings that will better meet the needs of their students. The influence that PD represents on educators' practice was further explored in the qualitative section of this study.

**Fig 4.17**



#### 4.2.5.3 Respondents that have not completed Professional Development Training on UDL

85% of respondents who identified as not being aware of UDL and/or had not completed PD in UDL signalled that they would be interested in participating in PD in UDL.

Novak (2020) states that we need to understand the challenges of our educators to understand what they truly need in PD. We need to give them options and choices for how they learn and express their knowledge and skills. We need to meet them at their level before we help lift them up to the next." Craig et al. (2022) believes the demands on educators' time and the limited resources allocated for PD during the academic year could be barriers to enacting UDL. His study suggests considerations for a summer workshop to further the implementation of the framework. The results aligned with the literature that summertime was the best time suited to conduct UDL training. This study was conducted during the global pandemic, and Covid-19 has significantly impacted how T&L, and PD training are delivered. Most respondents said that they would prefer an online or hybrid option during summer break.

**Fig.4.18**

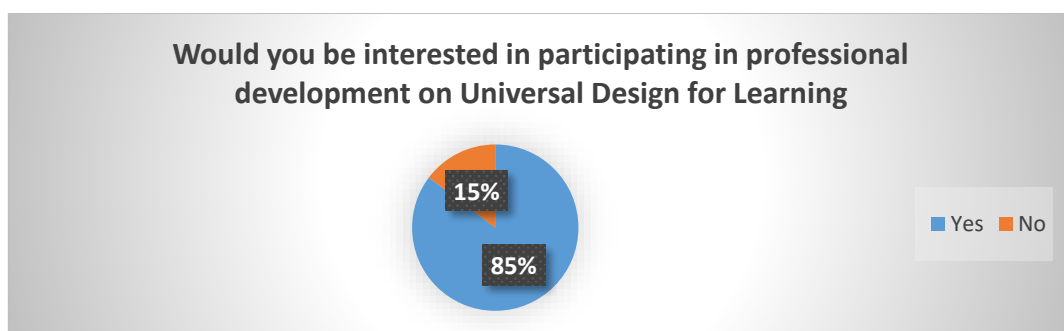


Fig 4.19

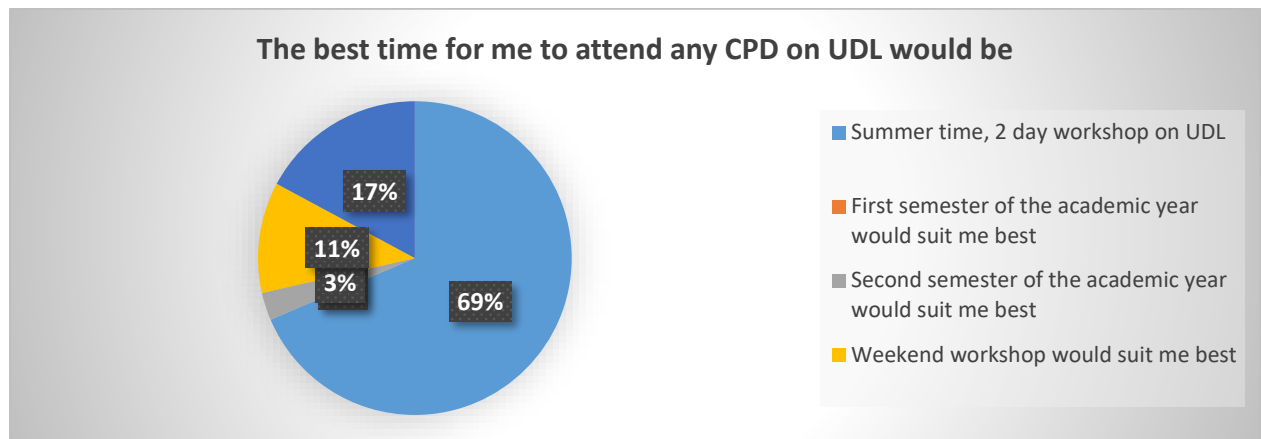
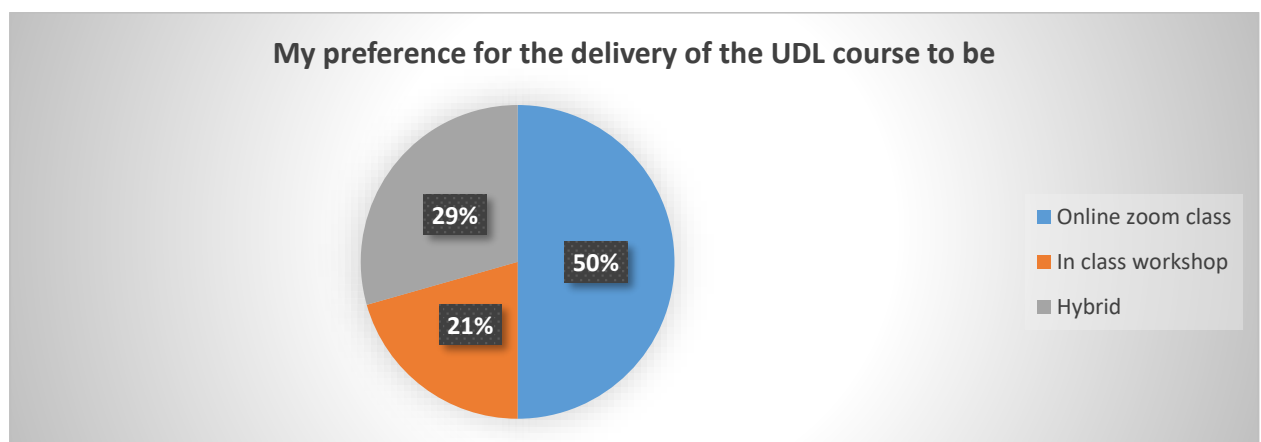


Fig 4.20



#### 4.2.5.4 Engaging best practice in UDL

Participants were asked for general feedback on any supports or resources that could be provided to enhance, support, and engage educators in UDL practices. Participant's suggestions are listed below:

- CPD overview session
- Broader guidelines for implementation in practice and training course on UDL
- Support on incorporating UDL in module descriptors, Internal training
- Short tutorials for academics that can easily be incorporated into busy schedules. Develop a community of practice develop a culture of UDL throughout the organisation Sharing of best practice across faculties. Highlights of what colleagues are implementing successfully
- Examples of what colleagues are doing, a repository of examples
- Looking at how assessments are developed
- Better use of staff on campus who have the UDL Facilitators Badge

- Payment of PD hours, particularly for part time staff who have been working for Griffith College for a minimum amount of time or delivery hours.

#### 4.2.5.5 Summary

This chapter shows that 71% of participants are aware of UDL. There was a vast difference in how participants rated their familiarity, with 6.44 being the average. 22% heard about UDL through the National Forum. 39% of respondents were unfamiliar with UDL but identified implementing several strategies that come under the UDL guidelines—raising the question of whether it can be considered UDL if they are not trained in UDL.

61% implement UDL in their teaching practice, but confidence levels among those implementing varied. No participants chose extremely confident. For those aware of UDL but not implementing it within teaching practice, time was the main reason or, more accurately, the perceived time constraint of implementing UDL guidelines in teaching practice.

The literature on PD showed a considerable correlation between PD and the success of the implementation of UDL. Only 33% of participants identified themselves as aware or implementing UDL had completed PD. 90% of participants who completed PD either agreed or strongly agreed that PD influenced their motivation, awareness, and implementation of UDL. Another interesting finding was that 85% would be interested in doing so among those who had not completed PD.

While awareness of UDL has grown, there is still work to bridge the gap between being aware and implementing it in the classroom, but the findings of this research show that there is a massive interest among HE staff to learn more about UDL.

### 4.3 Qualitative Data Findings and Analysis

This section addresses the objective aims to explore the area of UDL implementation within HE teaching practice.

#### 4.3.1 Awareness

Questions 1-3 (See Appendix 10 -Interview Questions) focus on educators' awareness of the framework.

#### 4.3.2 Where did they learn about UDL

When asked about where they had heard about UDL from, all five educators indicated that participating in a teaching qualification heightened their awareness of UDL. It also influenced four of the educators to further seek PD, specifically in UDL and to complete PD with the National Forum/UCD/AHEAD's-UDL digital badge. These findings reinforce the point made by Padden (2021) that the promotion of (UDL) has become more prevalent over the last number of years and PD remains the primary method for educators to expand their repertoire of effective practices and learn how to implement those practices in the classroom (Fixsen et al. 2009). Two educators had also become aware of UD as industry professionals, which sparked their interest in seeing how learning adapted to the concept.

#### 4.3.3 Motivation

The discussion around the motivation to implement UDL showed that for many educators interviewed, learner needs were at the centre of it. The diversity they were seeing in their classrooms prompted the need for UDL and the learner needs motivated the implementation. The National Strategy for Higher Education 2030 (2011) stated that HE is now at a transition point. The number of people entering the system is growing and students' profile is changing. Those entering HE will have diverse learning needs, and HE itself will need to innovate and develop to provide flexible opportunities for larger, more diverse student cohorts. The importance of recognising that each learner has different learning needs. Canter et al. (2017) recognises that UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone—not a single, one-size-fits-all solution but flexible approaches that can be customized adjusted for individual needs. An interesting quote from **Educator D** was *"it just made sense, when you think about UD and the built environment, it is about designing spaces that are accessible for all and if you apply that to a classroom, it is exactly the same thing"*.

#### 4.3.4 Is UDL a good framework for Teaching Practice?

All five participants agreed that the UDL framework supported learner variability, which was an essential component in selecting and implementing the framework into their teaching practice. The participants commented on UDL being about choice. According to Meyer et al. (2015), the UDL guidelines and associated checkpoints align with this neurological framework and help educators address the predictable learning variability that we know will be present in any environment. Educator E acknowledged that the classroom is made up of several individuals who need to be supported and that UDL is good framework it accommodates and supports all students. Meyer et al., (2015) believe

UDL can help educators create a flexible curriculum that can be presented in multiple formats. So that content would be accessible and appropriate for students with diverse backgrounds, learning preferences and abilities, improving and optimising the learning experiences for all individuals.

#### 4.3.5 Professional Development

The literature has previously established that PD remains the primary method for educators to expand their repertoire of effective practices and learn how to implement those practices in the classroom (Fixsen et al. 2009). When participants were asked if PD influenced them in Implementing UDL into their teaching practice they all agreed that it had. The participants commented that attending PD opened their awareness and gave them ideas on how to implement it. **Educator A** stated

*“Before completing the digital badge, I would have perceived UDL as a huge undertaking and time-consuming. PD changed my perceptions. It gave me new ideas of small changes I can make that will benefit the students”.*

This was an important statement as one of the main reasons for participants in the quantitative study not implementing UDL was due to the perceived time constraint associated. PD showed Educator A that even small changes will benefit learners. Flood and Banks (2021) acknowledge that PD helps educators move away from thinking in terms of ability and disability. The traditional practice of retrospective differentiation to proactive planning for variability requires a change in lecturer mindsets about difference, diversity, equity, and inclusion.

Participants also discussed attending/completing PD in UDL and the reality of returning to campus with the intention of implementing the strategies. Edyburn (2010) claims UDL holds considerable promise but believes that once educators understand the principles and what they look like, they are left to figure out how to apply and implement UDL themselves. This was also the view of the participants in this study. While some acknowledged that their faculties were supportive, others felt that more supports were needed to help lecturers take the knowledge gained through PD and bring that to the implementation stage.

Again, looking at Edyburn (2010) and the belief that adopting theory to practice is challenging, only one of the participants agreed with this statement in the context that it was not the actual UDL guidelines they found difficult to implement but they found it frustrating that it is a slow and gradual process as you cannot implement everything at once. They learned to be patient with UDL. The other 4 participants, while they did not consider it a challenge as such, the knowledge they gained through

completing the UDL badge prepared them for the reality of implementing UDL and managing expectations around how many strategies could be implemented at the one time.

Okafor and Blessing, (2021) believes that HE quality is heavily influenced by the quality of educators teaching and the PD process has a significant positive impact on performance

HE quality is heavily influenced by the quality of educators teaching, and the PD process has a significant positive impact on educator performance (Okafor and Blessing, 2021). These results reiterate the importance of having PD and knowledge of UDL across all facilities to help improve the quality and development of all college programmes.

### 4.3.2 Implementing UDL Challenges and Gains

This section explores the reality of implementing UDL and Instructional Gains.

#### 4.3.2.1 Incorporating UDL in Module Design

McGuire and Scott (2006) argue that implementation of UDL ideally should be at the forefront of module design or re-design stage. Padden (2021) agrees and emphasizes that retrofitting or adjusting anything while in use is much more challenging and often far less effective than building it at the design stage. The participants all agreed with this idea, from two different perspectives. Three of the participants had not been involved in the design stage of their module. Two were trying to retrofit UDL guidelines and principles into someone else's idea of what the module would look like. But Educator D made interesting point which highlighted faculty differentiation with UDL already being considered at the design stage within their faculty community *“I must reiterate that my faculty might be slightly different to the other faculties. UDL is very much there as a focus because they are already implementing many different tools for the students to learn and UDL is their baseline and works fantastically “.*

Two of the participants were involved in the design of their module but they had not completed PD in UDL at that stage so like the first group of participants they were trying to retrofit the guidelines and principles however, they have the advantage of being a part of the module design. All participants agreed that they would absolutely include UDL at design stage if given the opportunity in the future.

#### 4.3.3.2 Confidence in Implementation of UDL

Capp (2020) study demonstrated that educators' confidence in implementation varies. The survey analysis revealed varying degrees of educator confidence with UDL, which the researcher chose to further explore within the qualitative study. Educators were asked how confident they would describe themselves in implementing the UDL framework in their teaching practice. The results aligned with the literature with Educators A, C & E, indicating they were fairly confident but acknowledged there still was room for improvement and more knowledge gained in implementing UDL. **Educator C** believed that completing CPD postgrad or master in T&L increases confidence.

*"You cover all learning preferences and theories, and you know that you need meet these outcomes, having done CPD and passed the course. You actually have an increased confidence level that you know you can do it."*

**Educator B** commented they understood the concept of UDL, but their implementation of the framework within teaching practice was quite ad-hoc. **Educator D** stated they had no issues and would be highly confident implementing the framework. **Educator D** also highlighted a crucial point; their confidence may be intrinsically linked to the faculty support they receive and the fact that they already consult a community of best practices in UDL within their faculty.

An interesting point made by several the participants was that although they already had an interest in UDL and had completed PD in the area, it was the Covid 19 pandemic and the shift to online delivery had impacted their mind-set towards the UDL framework and influenced the level of implementation.

#### 4.3.3.3 Which UDL guidelines do you focus on in your Teaching Practice

Meyer et al. (2014) state that UDL ensures that a variety of pathways (choice and flexibility) are offered to students to understand the content and that goals are clear and specific to the expected outcome. That student assessment is flexibly designed to enable every student to demonstrate their knowledge, values, understanding, and skills in various ways. Participants were asked to have they changed their teaching strategies across all the UDL guidelines, or do they focus on specific guidelines? This question showed that only two out of the five educators indicated they implement various strategies across the UDL principles. Four of the educators revealed they focus on specific principles, multiple means of action and expression, and multiple means of representation.

To quote **Educator E**:

*"it's difficult to use them all. Time is so limited to get all the stuff done. I try and focus on the simple things like putting the materials up in different formats and giving people the choice in their assessments and giving them a choice, and how they and how they demonstrate their achievement".*

These results aligned with Capp's (2020) study, revealing that educators were least confident engaging with principle one, providing multiple means of engagement and checkpoints and guidelines in the other two principles related to engaging students. His study revealed educators were most confident in providing students with multiple means of representation.

Capp (2020) believes there needs to be a laser-like focus on elements of the framework. He believes a targeted focus will help increase confidence in implementing UDL. Both the quantitative and qualitative research shows that a laser focus is required on multiple means of engagement (specifically around technology).

#### 4.3.3.4 Barriers to implementing UDL

Educators expressed barriers to supporting and developing resources and stated time was a big issue. **Educator A** said, *"The main challenge has been some support in developing resources using UDL approaches, especially for students with more significant needs. Time can also be a huge barrier in developing and making significant, worthwhile changes to resources"* **Educator E** agreed, saying, *"time is an issue. It is challenging to achieve a lot, only bite-sized chunks of UDL, as it is too much work."* **Educator D** said, *"Sometimes you would hit a brick wall with UDL. Say, how do I actually-How do we do this?"* These results aligned with the literature.

Canter et al. (2017) reported from their study that participants highlighted several challenges with implementing UDL, including lack of time, larger caseloads, lack of funding, anxiety about learning modern technology and producing ideas for students with more significant needs.

Participants also discussed QQI structure around module validation as a limitation and referred to the importance of UDL being included at module design stage.

#### 4.3.3.5 Instructional Gains

The study conducted by Lowrey et al., (2017) revealed positive stories about the classroom having a sense of belonging. Students were engaged by having choices and autonomy, and they sought help from each other, creating collaboration and community.

All five educators agreed that UDL has impacted their learning environment, with some noticing students happier when offered choice in assessment, benefits in peer interactions and notice a change in students' reactions or involvement, creating a collaborative community atmosphere. **Educator C** stated, *"Absolutely it has impacted my teaching practice, students are so much happier especially when you give the choices in assessment. It also translates through feedback."* **Educator E** agrees, stating, *"You can see a change from student's reactions or involvement, there is more of a collaborative community within the classroom"*.

When asked how they measure the effect UDL has on their teaching practice, Educators reflected that it is through discussion and participation levels in activities developed with UDL guidelines in mind; others said feedback reflection is critical. Keeping the learners, voice at the centre is imperative. Advance HE (2019) states that the 'Student Voice' is key to many researchers and policymakers planning for progress toward UDL.

However, two educators indicated they were unsure how to measure UDL. **Educator E** said, *"it's not been measured now but I would welcome that. I would like to know where we need to improve and the impact it is having on our students learning, that support would be greatly appreciated."*

#### 4.3.3 Engaging best practice in UDL

The final questions allowed the author to reflect on the participants views around engaging best practice in UDL from within a HE institution.

##### 4.3.3.1 Supports and Resources available around UDL

Participants were asked whether there were any supports or resources that could be provided that would enhance/support them in implementing UDL in their teaching practice. The theme that emerged suggested tangible support, a team or support person to talk to, and creating a community practice. Craig et al., (2022) believe the institute's structure that embeds modelling, practice, content

connections and other vital elements to facilitate teacher understanding and subsequent classroom application is essential for UDL.

Suggestions from the participants included:

- A repository of sample resources including templates on how to produce them
- A team of UDL 'experts' on campus who can support lecturers in implementation. The best way of supporting & developing lecturers within their teaching practice is developing community of practice creating a culture around UDL.
- Support around using technology to implement UDL principles

Educators were then asked if there was anything, the college management could provide to enhance or engage educators in UDL practice. The analysis revealed creating a learning and organisational culture around UDL and a strong theme for stakeholder/management encouragement and support. AHEAD (2017) states that the need for vision and strategies to implement UDL comes from the top down. Draffan et al. (2017) suggest that UDL can only be achieved if approached strategically and viewed as an evolving national, organisational, and professional journey.

Suggestions from the participants included:

- Encouraging all staff to complete CPD in the area and having a committee/team on campus that provides follow-up support to lecturers through a CPD Policy around UDL
- Encouraging faculties to use learner feedback as a springboard for change and advancement of teaching practices
- Collaboration between faculties
- Encouragement of UDL from the top down. Recognition from management of the effort made by lecturers and supports for further development

#### 4.3.3.2 Emphasis on UDL in Higher Education in Ireland

When asked their opinion on if there is enough emphasis on UDL in HE, the participants all answered no. Several reasons for this answer emerged:

- The participants felt that many of their colleagues are not aware of UDL. While this differs between faculties the consensus concluded that it is managements responsibility to ensure that all faculties have access to the same knowledge and resources.

- The importance of feedback came up several times. One participant noted that feedback helps change and improve best practices and delivery. Feedback to educators is not consistent across the college. Some faculties operate differently around distributing feedback and support for UDL.

#### 4.4 Summary

When looking at awareness of UDL, all five participants pointed to their teaching qualification as the initial introduction to UDL. It sparked an interest in pursuing PD, which each did through the National Forum. The motivation behind pursuing PD in UDL was down to the increasing diversity participants recognised in their classrooms. It also helped form their opinion that it was a good framework for teaching practice, explicitly concerning Meyer et al. (2015) idea that UDL was a way for educators to address the predictable learning variability within the classroom.

Each of the participants spoke positively about the impact that PD had on their understanding of UDL. However, all highlighted the challenges of the reality, returning to campus to implement the strategies and agreed that there was a lack of support available on campus to help advance the implementation of these strategies (Edyburn 2010)

All participants unequivocally agreed that embedding UDL at the module design stage would make it much easier to implement in the classroom (McGuire and Scott 2006). While retrofitting UDL principles into a module can be more difficult, confidence levels were linked to the lack of support systems. One educator specifically referenced the importance of the support within their faculty and being able to consult a community promoting best practices. Again, as noted in the quantitative research, time was one of the main barriers to implementing UDL. Not necessarily implementing it in the classroom but the time involved in producing new resources and materials.

When looking at best practices at HE, the participants all agreed that they did not feel there was currently an emphasis on UDL. Participants focussed on encouragement from the top-down, ensuring all faculties have access to resources, support and opportunities for PD. In addition, more encouragement for staff to pursue PD and have this as a central focus through a CPD Policy around UDL and ensuring that faculties use feedback to promote and encourage change within teaching practices.

# Chapter Five: Conclusion and Recommendations

## 5.1 Introduction

This study explored UDL awareness and Implementation within HE teaching practice. The researcher sought to ascertain educators' awareness of UDL and determine whether intuitional improvement and PD to enhance educator skill sets for working with diverse learners is necessary and to identify the best approach for engaging/supporting educators in UDL practices.

The research explored the following three objectives:

1. To ascertain educator's awareness of UDL
2. To explore UDL implementation within teaching practice
3. Identify what is the best practice for supporting/engaging educators in UDL practices

This final chapter aims to draw together and present the key findings for the objectives and suggest recommendations based on the information gathered. This chapter will also address areas for further study.

## 5.2 Conclusion

When exploring the first two objectives, the author found that CPD is an integral link between awareness and implementation of UDL. CPD is at the forefront of the literature and data gathered showing educator knowledge, understanding & confidence are influenced by PD and engagement (Capp 2020). It also remains the primary method for educators to expand their repertoire of effective practices and learn how to implement them in the classroom (Fixsen et al., 2009).

The primary research revealed awareness and implementation of UDL were high however, 67% have not participated in any PD on UDL. A key finding revealed that educators are implementing UDL without any formal PD or assuming their teaching strategies are similar to UDL therefore, it is UDL. Edyburn (2010) states, like any other integrative cognitive skill, that UDL must be recognised as a learned skill refined over time to produce a high level of performance. In addition, participants who identified as being unaware and unfamiliar with UDL unconsciously and regularly incorporate a wide variety of strategies that align with the "UDL guidelines" without understanding what UDL is. It also

considers how educators could be better prepared to implement these strategies if formally trained on UDL. An interesting outtake from the survey showed that 85% of respondents in this category signalled that they would be interested in participating in PD in UDL.

The study revealed that participating in a teaching qualification or UDL PD increased awareness and influenced the implementation of UDL within teaching practice.

The research focus on implementation of UDL highlighted a number of valid points, which aligned with the literature available on the topic. Firstly, as discussed above, CPD and participating in PD around UDL was crucial however, confidence in implementing the framework was still quite varied, and the study identified a skill gap. Educators are focusing on specific UDL principles. Capp (2020) believes there needs to be a laser-like focus on particular framework elements. He believes a target focus will help increase confidence in implementing UDL. The quantitative and qualitative research shows that a laser focus is required on multiple means of engagement. CPD, having a teaching qualification was also deemed to be essential in the awareness and implementation of UDL within HE teaching practices.

A barrier to implementation, highlighted a number of times, was time. The participants firmly agree that if implementation were done at the design stage, it would be extremely beneficial, especially with time. Padden (2021) emphasises that retrofitting or adjusting anything while in use is much more challenging and often far less effective than building it at the design stage. However, there is a discrepancy; the study revealed three out of the five educators were not involved in their own module design.

The third research objective was to discover best practice for supporting/engaging educators in UDL Practices. The research found that intuitional improvement and PD to enhance educators' skill sets for working with diverse learners is required and of vital importance. In addition, engaging best practices in UDL, implementing a strategic learning and development plan and creating a culture of UDL resides not only with educators but also with the educational institution. AHEAD (2017) states that the need for vision and strategies to implement UDL comes from the top down. Results revealed the importance of PD with encouragement/support from stakeholders/management and creating a learning and organisational culture around UDL. Draffan et al. (2017) suggest that UDL can only be achieved if approached strategically and viewed as an evolving national, organisational and professional journey. Primary research revealed that there are differences in how faculties support and implement UDL,

with some already focusing on UDL module design stage. No faculty should be different regarding the support or resources provided to educators or students. UDL support should be reflective across the institution and there should be a commitment to using UDL as a lens throughout the college.

This research is a means to raise awareness among educators and management/stakeholders that participating in PD on UDL holds considerable promise for teaching practice and, if approached strategically, will result in a higher quality of teaching, learning and potential better service standards across the institution.

### 5.3 Recommendations

A number of recommendations listed below focus on educators, but all require support and implementation from the institution's management.

The recommendations address both policy and CPD.

#### 5.3.1 Recommendation 1 – CPD Policy

The first recommendation is to introduce a CPD policy, with educators undertaking a specific number of CPD hours around UDL per annum. As different learning activities can qualify as CPD, the most appropriate for the institution's needs, based on the research, is compulsory hours directed explicitly at a teaching qualification and UDL training. A CPD policy will ensure the institution maintains and raises all educator's professional standards and meets 21st students' needs.

#### 5.3.2 Recommendation 2 – Monitoring and Evaluation

CPD should be a continual process with monitoring and evaluation through years of service. Monitoring will ensure things are going according to plan and if they are not, then taking appropriate action to ensure they are. In addition, gauging the impact of CPD or evaluating its effectiveness is extremely important. Best practice would be to survey educators' pre- and post-PD training to identify areas for CPD content focus and to provide CPD workshops to boost confidence and individual learning and development in identified skill gaps i.e., a laser focus CPD offering on multiple engagement is required.

#### 5.3.3 Recommendation 3 – Support and Resources

Create and promote a community of support, bringing together a committee staff who have the UDL Facilitators Badge. Doing so will provide a network of support for educators, which in turn help

develop practical support (templates, resources, and explainer videos). A community of facilitators will ensure that supports are available, accessible, and inclusive to all faculties.

#### 5.3.4 Recommendation 4 - Module Design

Ensure, as far as reasonably practicable, that educators are involved in the design stage of their module. When an educator is handed a module, they did not author themselves they are then trying to retrofit or embed UDL guidelines, which can be challenging and time consuming. To support educators in that process management and QA responsible for the coordination of module design has a firm commitment to integrating UDL at design stage, enforced by policy.

In addition, future CPD offerings could be to design a module descriptor embedding UDL guidelines.

#### 5.4 Recommendations for further Research

There is considerable potential for expanding this body of research further with an investigation into other HE institutions' awareness and implementation of UDL, which can be analysed and compared to get an overall vision of UDL awareness and implementation of UDL in Ireland.

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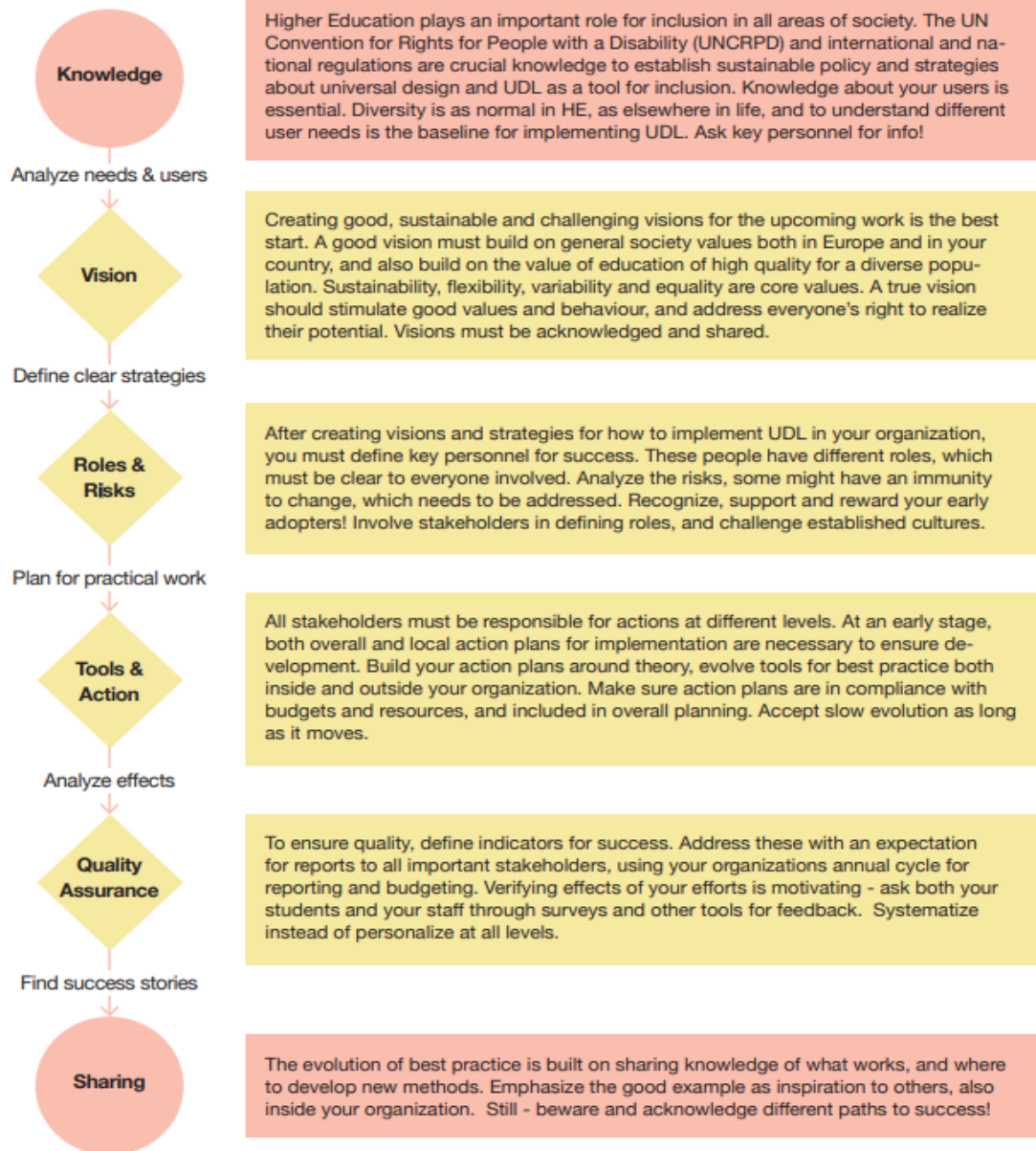
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## Top-down implementation of UDL

### A quick guideline for decision makers



## Appendix 3: Participant Information Sheet – Online Survey

### **Research Information**

Dear Participant,

My name is Sarah Ward, and I am pursuing a Master's of Arts in Education Learning and Development with the Faculty of Teaching and Learning at Griffith College Dublin.

As part of my dissertation, I am conducting exploratory research that looks at Higher Education institutions awareness and implementation of Universal Design for Learning (UDL) within teaching practice. The research will be published in the form of a Masters dissertation and, where possible, may be published in academic journals and presented at appropriate conferences. You have been invited to participate in the study, as I would be interested in drawing from your views and experience as an educator. If you decide to take part in the study, the following will happen:

### **Description of Study**

1. Participants will be asked to complete an online survey about their awareness and behaviours towards the Universal Design for Learning.

1.1 The survey will be collated, and the data gathered will be treated in the strictest confidence.

1.2 The completed survey will be kept in a digitally secure location, password word encrypted and destroyed after graduation or in 24months, whichever comes sooner.

1.3 The findings will be accumulated & included in the final paper.

1.4 The findings will be displayed visually using graphs and delivered as a commentary.

The Identify of the Participant will never be disclosed in the report or any associated documents.

### **Benefits of the Study**

It is hoped that findings from this study are with best intentions on enhancing best practices in engaging lecturers in UDL practices.

You do not have to take part in this study. You can decline to take part or withdraw from the research, at any time, before the analysis. The analysis phase will commence 10 days after the survey takes place.

If you have any questions or concerns about the study, you can contact me at [Sarah.ward@griffith.ie](mailto:Sarah.ward@griffith.ie) or 0868866129.

Many Thanks,

*Sarah Ward.*

## Appendix 4: Consent Form – Online Survey

**Research Title** – An Exploration into Universal Design for Learning Awareness and Implementation within an Irish Higher Education Institution.

Please tick the statement below:

Read	Tick
I voluntarily agree to participate and take part in this research study	
I have read the information sheet for this study	
I understand what this study is about and was given a chance to ask questions before agreeing to participate.	
I understand why I have been asked to participate	
I understand I have the right to withdraw up until the survey is submitted to the researcher.	
I understand that all information/data gathered will be treated confidentially and stored securely.	
I understand that my identity will remain anonymous on the results of this research.	
I understand that my data may be used for additional research and will remain anonymous.	
I understand data gathered as part of this research will be destroyed after graduation or in 24months, whichever comes sooner.	
I understand that this research will be published in the form of a Masters dissertation and, where possible, may be published in academic journals and presented at appropriate conferences.	

Signature of research participant

Date

\_\_\_\_\_

\_\_\_\_\_

Orla Butler, Griffith College Dublin, supervises this study.

**Researcher contact details:** Sarah Ward – Email: [Sarah.ward@griffith.ie](mailto:Sarah.ward@griffith.ie) Phone: 0868866129

## Appendix 5: Participant Information Sheet – Semi Structured Interviews

### **Research Information**

Dear Participant,

My name is Sarah Ward, and I am pursuing a Master's of Arts in Education Learning and Development with the Faculty of Teaching and Learning at Griffith College Dublin.

As part of my dissertation, I am conducting exploratory research that looks at Higher Education institutions awareness and implementation of Universal Design for Learning (UDL) within teaching practice. The research will be published in the form of a Masters dissertation and, where possible, may be published on the Griffith College dissertations repository. You have been invited to participate in the interview study, as I would be interested in drawing from your views experiences and beliefs on Implementing UDL within teaching practice

If you decide to take part in the study, the following will happen:

### **Description of Study**

1. The interview will be arranged at your convenience and will be about your feedback from the survey.
2. The interview will take place on zoom; it will be audio-recorded, transcribed and saved in a digitally secure location with password encryption on the researcher's PC. The interview will last 20 minutes.
3. The data transcribed will be collated, anonymized, and saved in an excel file on the researcher PC with password encryption and treated in the strictest confidence.
4. There will be no identifiable material in the transcripts. Each Participant's interview will be assigned a number, which will be used when collating the data.
5. The interview process and the report will remain anonymous.
6. Recordings and transcripts gathered as part of this study will be destroyed after graduation or in 24months, whichever comes sooner

The Identify of the Participant will never be disclosed in the report or any associated documents.

### **Benefits of the Study**

It is hoped that findings from this study are with best intentions on enhancing best practices in engaging lecturers in UDL practices.

You do not have to take part in this study. You can decline to take part or withdraw from the research, at any time, before the analysis. The analysis phase will commence one week after the interview takes place.

If you have any questions or concerns about the study, you can contact me at [Sarah.ward@griffith.ie](mailto:Sarah.ward@griffith.ie) or 0868866129.

Many Thanks,  
Sarah Ward

## Appendix 6: Consent Form – Semi Structured Interviews

Please tick the statement below:

Read	Tick
I voluntarily agree to participate and take part in this research study.	
I have received sufficient information about this research and understand what is required of me.	
I understand what this study is about and was given a chance to ask questions before agreeing to participate.	
I understand why I have been asked to participate.	
I understand that this request is voluntary and can withdraw at any time or refuse to answer any questions without any consequences of any kind.	
I am satisfied that my data will be treated in strict confidence and safely stored for the duration of the research	
I agree to participate in a 30-minute interview via Zoom with the researcher and agree to my interview being recorded and transcribed.	
I understand; in the results of this research, my identity will remain anonymous. The researcher will do this by changing my name and disguising any interview details.	
I understand the researcher may quote disguised extracts from my interview in the dissertation.	
I am satisfied that the researcher will destroy data gathered as part of this research after graduation or in 24months, whichever comes sooner.	
I understand that this research will be published in the form of a Masters dissertation and, that the anonymised data I provide will be used for the sole purpose of this research and may be published on the Griffith College dissertations repository	

Signature of research participant

Date

\_\_\_\_\_

Orla Butler, Griffith College Dublin, supervises this study.

**Researcher contact details:** Sarah Ward- Email: [Sarah.ward@griffith.ie](mailto:Sarah.ward@griffith.ie) Ph.: 08688661289

## Appendix 7: Ethics Committee Research Approval



FACULTY ETHICS COMMITTEE, FEEDBACK - 18<sup>th</sup> February 2022

**Student: Sarah Ward**

**Student Number: 2994648**

**Supervisor: Orla Butler**

The Master of Arts in Education Learning and Development (MAELD) \*Faculty Ethics Committee (FEC) has approved this proposed study you may proceed.

A handwritten signature in blue ink, appearing to read "Peter Gillis". The signature is stylized and cursive.

Peter Gillis  
Dissertation Module Lead

# UDL Research Survey - Sarah Ward Dissertation

An Exploration into Universal Design for Learning Awareness and Implementation within Teaching Practice in Higher Education

Thank you for participating in this research study.

\* Required

## Participant Information

1. Please tick below to confirm you have read the attached information sheet and consent to participate in this research \*

I Consent

2. As a lecturer in Higher Education my employment status is: \*

Full Time

Part Time

3. In which campus do you teach? Please select all that apply \*

Dublin

Cork

Limerick

Dublin, City Centre

**4. Please select the faculty that you teach in the majority of the time ? \***

- Apprenticeships
- Business
- Computing
- Counselling & Psychotherapy
- Graduate Business School
- Institute of Language
- Teaching & Learning
- Design
- Lifelong Learning
- Engineering
- Law
- Short courses
- Pharmaceutical science
- Journalism & Media Communications
- Music and Multimedia
- The Leinster school of Music
- Professional Law
- Professional Accountancy
- Springboard+
- Other

**5. How long have you been teaching in higher education? \***

- I have less than 2 years experience
- I have 3 to 5 years experience
- I have 6 to 10 years' experience
- I have more than 10 years' experience

**6. What level of education do you hold \***

- Doctoral Degree
- Level 9 - Masters
- Level 9 - Post Graduate Diploma
- Level 8 - Higher Bachelor's Degree
- Level 8 - Higher Diploma
- Level 7 - Bachelor's Degree

**7. As an educator, have you attained any of the following: \***

- Certificate in Education Learning and Development
- Postgraduate diploma in Education Learning and Development
- Master's in Education Learning and Development
- None of the above

**8. Are you familiar with Universal Design for Learning (UDL)? \***

Yes

No

**9. Please rate your level of familiarity with UDL on a scale of 1 - 10 with 10 being the highest \***

1   2   3   4   5   6   7   8   9   10

**10. Please describe how you heard about the UDL (choose all that apply) \***

- From the National Forum for Teaching & Learning
- Attended a National Forum related event
- Webinar or conference
- Teaching & Learning Showcase
- From the Association of Higher Education Access and Disability (AHEAD)
- UCD for lifelong learning
- From a colleague/peer
- Pre service training/education on UDL
- Continued professional development course
- Other

**11. Are you implementing UDL in your teaching practice? \***

Yes

No

**12. Please rate your level of confidence in implementing of UDL into your teaching practice \***

Extremely confident

Intermediate confident

Fairly confident

My confidence varies on different aspects of the framework

**13. What ways have you incorporated UDL in your Teaching Practice? \***

**14. If you answered no, are there any particular reason why you are not implementing UDL in your teaching practice?**

15. **Do you use any of the following strategies to offer learners various ways of acquiring information and knowledge? (choose all that apply)**

\*

- Visual media (e.g., video clips, you-tube, animations, diagrams, charts)
- Teach background information before lessons (Concepts)
- Auditory media (e.g., digital, MPS, audiobooks, podcasts)
- Varied instructional materials (e.g., text, video, graphics)
- Multiple views or print formats (e.g., changing size of text or image)
- Use of cues and prompts to draw attention to critical features
- Supports (e.g., outlines, graphic organisers, concept maps, Moodle)
- Help students connect what they are learning to what they already know
- None of the above

16. **Do you use any of the following strategies to allow students to express what they know? (choose all that apply) \***

- Vary the methods for student response (e.g., text, speech, drawing, video, storyboards)
- Optimise access to tools and assistive technology
- Assignments use multiple media/ formats (e.g., text, speech)
- Use multiple tools for construction/composition (e.g. Grammarly, editor text-to-speech)
- Build fluency through graduated levels of supports for practice and performance
- Present different approaches, strategies, or skills that have the same outcome
- Use of supports and scaffolds to express student understanding (e.g. pre readings)
- Assessments use multiple media/format (e.g., text, speech, and video, portfolios. presentation)
- Prompts to "stop and think" before acting
- Tasks or activities are differentiated
- None of the above

**17. Do you use any of the following strategies you use to engage students? (choose all that apply) \***

- Tasks are related to student interest
- Assignments have varied levels of challenge (e.g. differentiated)
- Students have a choice in which resources to use (e.g., graphic organisers e.g. Miroboards, mind map), templates, read or audio.
- Students have grade guidelines that allow them to complete assignments at varying levels of proficiency (e.g., scoring rubric)
- Individualised feedback to support student learning (written or audio, one to one)
- Opportunities to share and demonstrate their learning (e.g., explain their answers to others, share problem-solving skills)
- Student choice of flexible workgroups (e.g., individual, pairs, small group)
- Student choice of activities to demonstrate their learning, as opposed to offering one activity that all students must use.
- Student choice in content (e.g., book to read, report topic, video, podcast)
- Student choice in tools (e.g., by hand or with computer)
- Activities were allowing for active participation, exploration and experimentation.
- None of the above

**18. I have attended professional development training on Universal Design for Learning. \***

- Yes
- No

**19. Would you be interested in participating in professional development on Universal Design for Learning. \***

- Yes
- No

**20. I would interested in \***

- Participating in professional development on Universal Design for Learning,
- Some information on Universal design for learning
- Attend a workshop on UDL
- Support staff to talk and gain more information about UDL

**21. The best time for me to attend any CPD on UDL would be**

- Summer time, 2 day workshop on UDL
- First semester of the academic year would suit me best
- Second semester of the academic year would suit me best
- Weekend workshop would suit me best
- Student study week within the academic year would suit me best

**22. My preference for the delivery of the UDL course to be**

- Online zoom class
- In class workshop
- Hybrid

**23. What prompted you to sign up for Professional Development in UDL(choose all that apply) \***

- I have an interest in the area of Inclusive teaching
- I noticed my classrooms getting larger with an increase in student diversity
- I received information & encouragement from the college
- I received information & encouragement form the faculty
- I heard about it from a colleague/peer
- I'm working on my own continued professional development (CPD)

**24. Rate your level of agreement - After attending professional development training on UDL it has \***

	Agree	Agree	Neutral	Disagree	disagree
Made me proactive and influenced my practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Made me mindful and constantly challenging myself to proactively design lessons to meet the needs of diverse learning styles, using various strategies, technologies, and other resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased my awareness and thinking processes concerning student needs and strengths before lesson planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased my ability to design lesson plans accessible for all students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivated me to incorporate Universal Design for learning into my lesson plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**25. Are there any supports or resources that the institution could provide to enhance, support and engage lectures in UDL \***

**26. Follow up interviews will be taking place for this research. If you would be willing to participate in a 10-15 minute interview please leave your email below**

## Appendix 9: Survey Graphs

Fig 4.1 Employment status

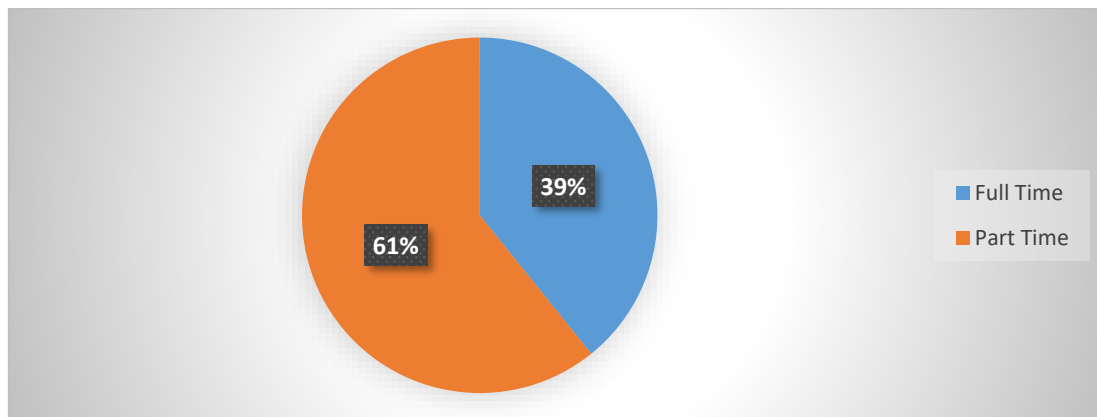


Fig 4.2 Campus

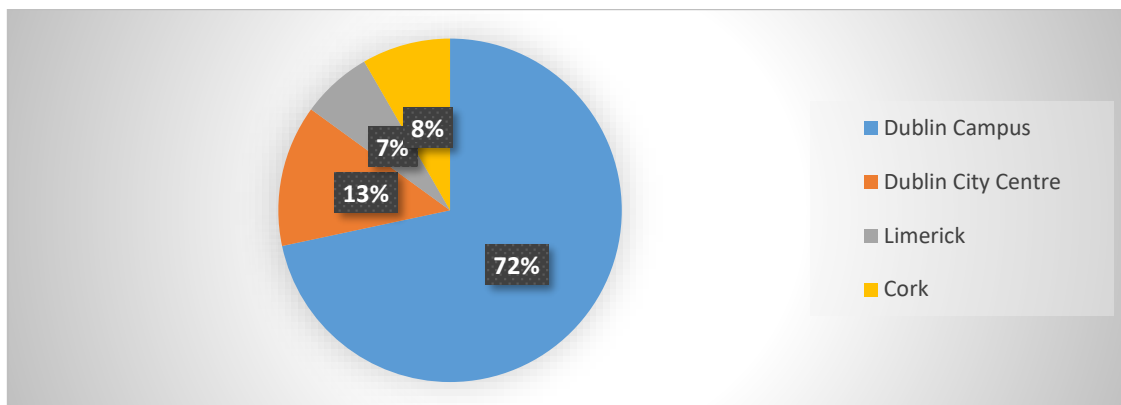


Fig 4.3 Faculty

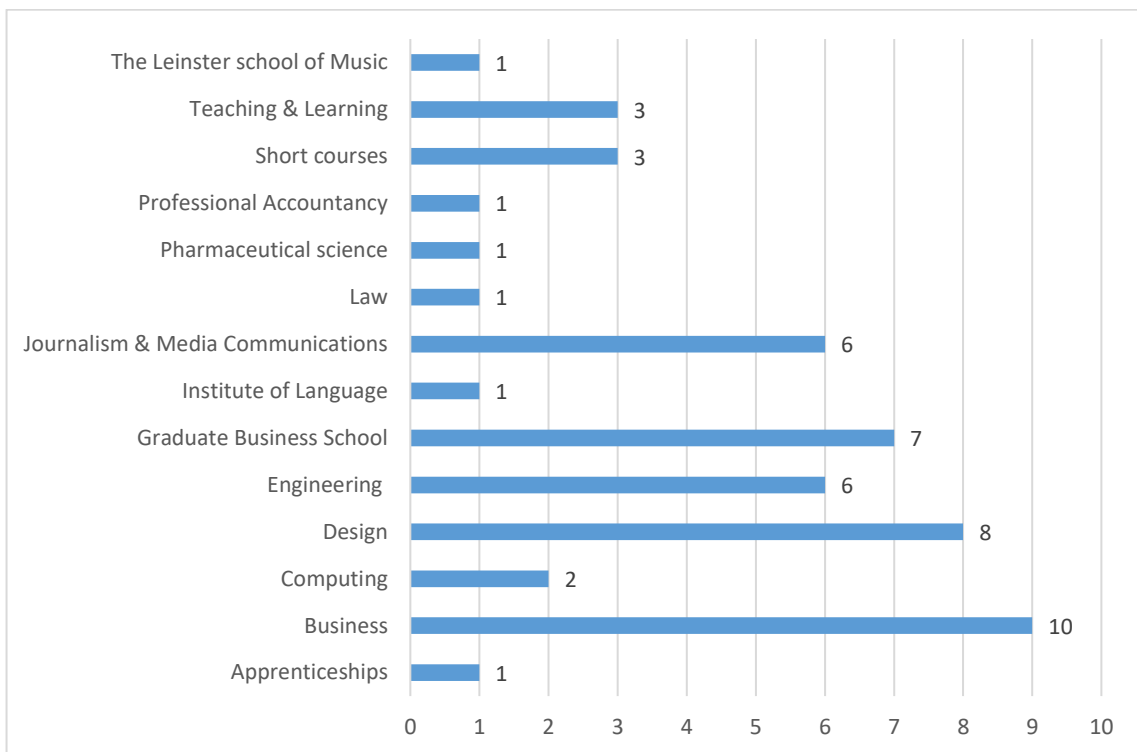


Fig 4.4 Teaching Experience

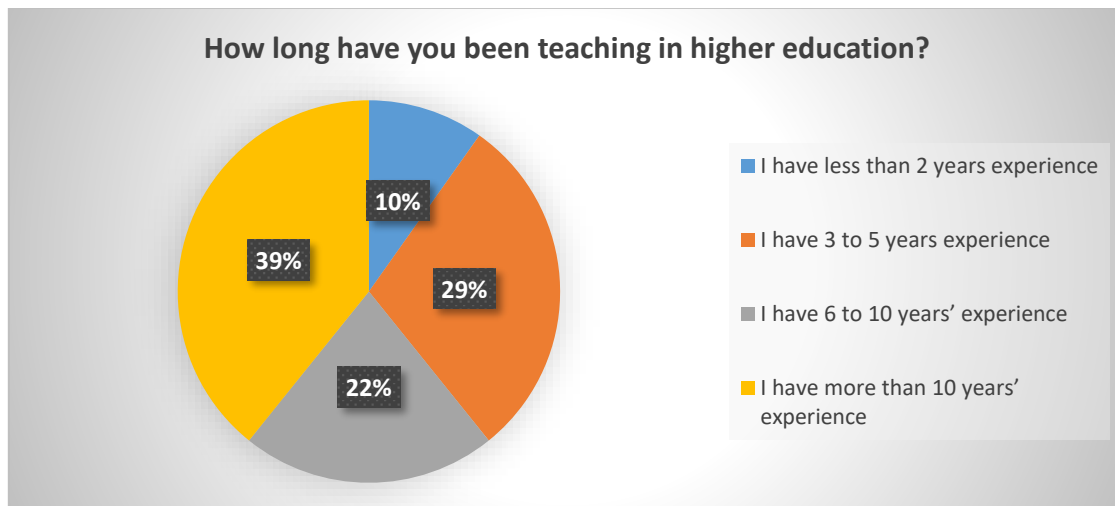


Fig 4.5 Level of Education Attained

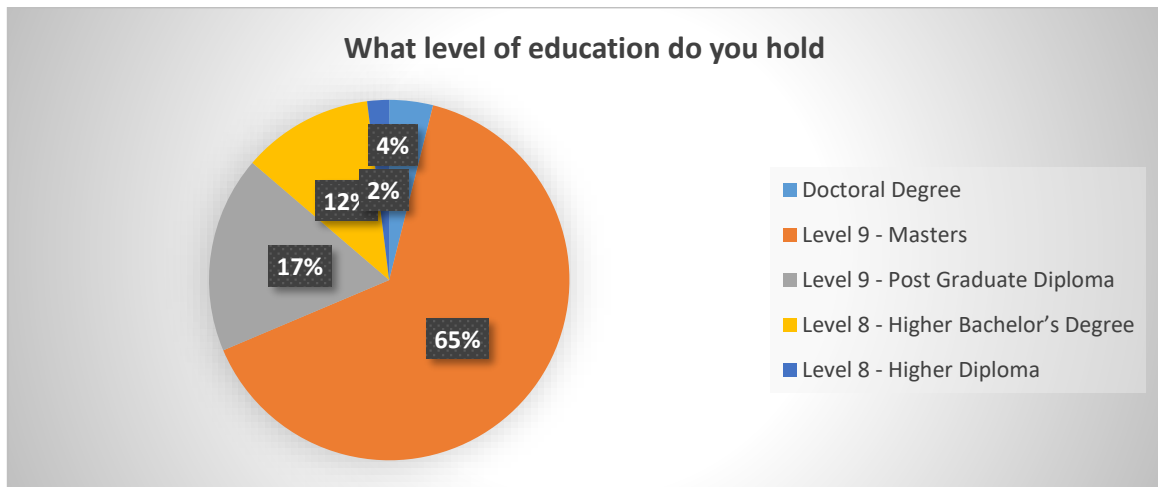


Fig 4.6 Teaching Qualifications

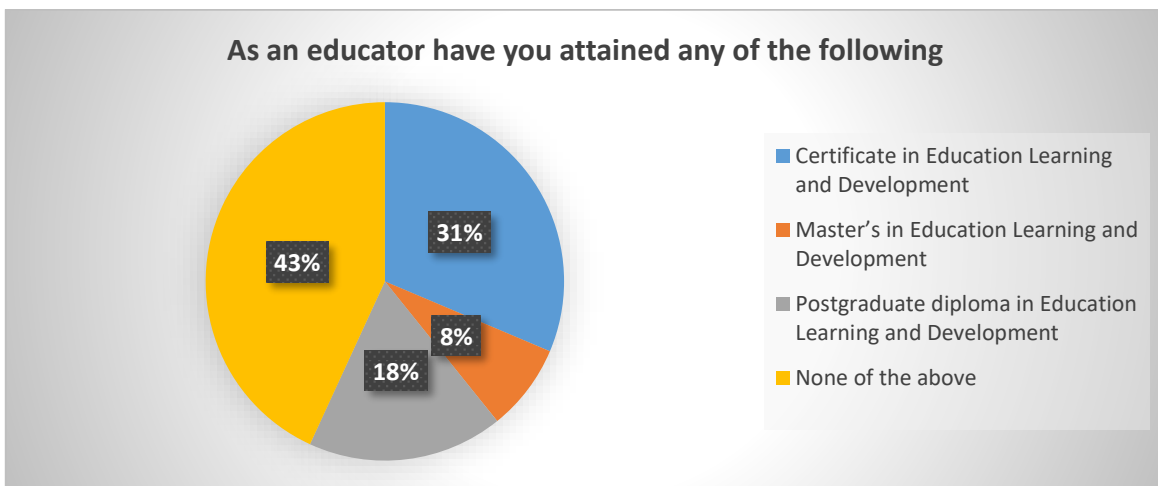


Fig 4.7 Familiarity with Universal Design for Learning (UDL)

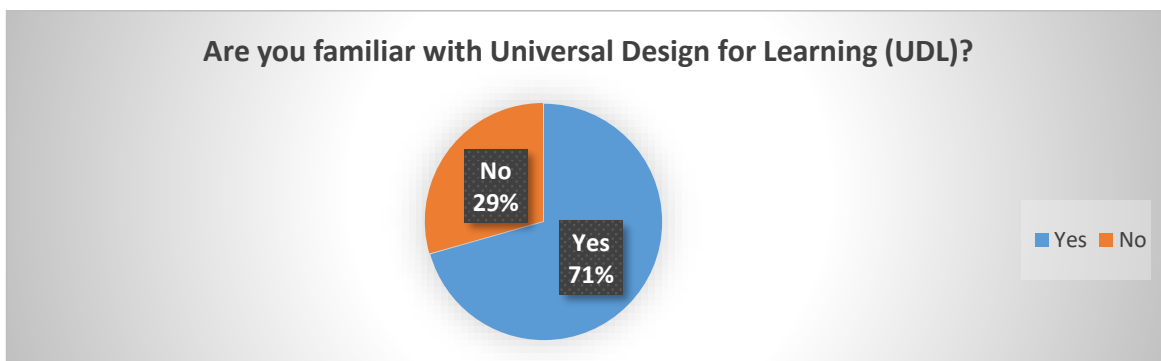


Fig 4.8 Level of familiarity with UDL - Rated

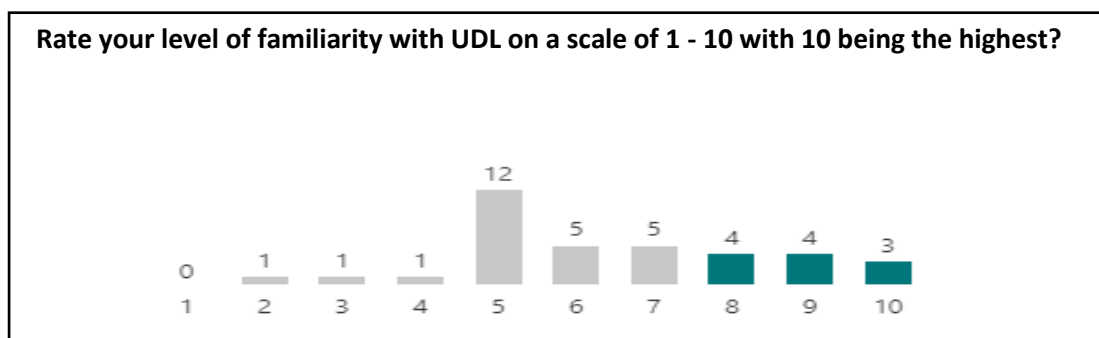


Fig 4.9 - Do you use any of the following strategies to offer learners various ways of acquiring information and knowledge? (Choose all that apply) – Strategies that align with multiple means of representation.

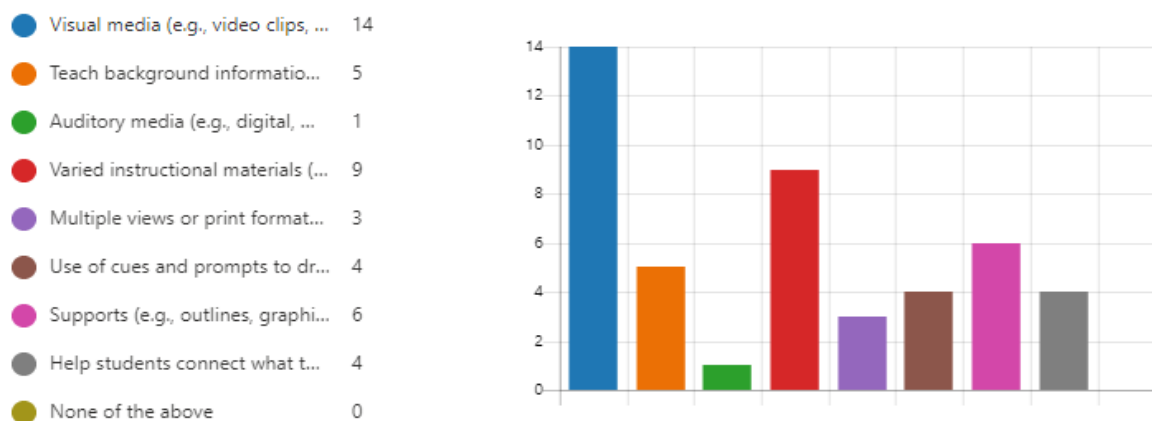


Fig 4.10 Do you use any of the following strategies to allow students to express what they know? (Choose all that apply) – Strategies that align with multiple means of action and expression.

- Vary the methods for student ... 1
- Optimise access to tools and a... 5
- Assignments use multiple me... 2
- Use multiple tools for constru... 3
- Build fluency through graduat... 1
- Present different approaches, ... 2
- Use of supports and scaffolds ... 8
- Assessments use multiple me... 5
- Prompts to "stop and think" b... 3
- Tasks or activities are different... 3
- None of the above 1

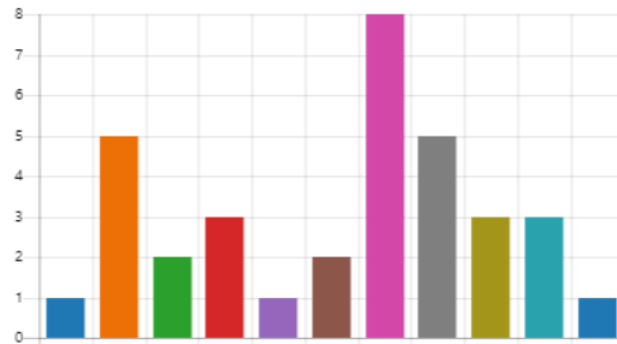


Fig 4.11 Do you use any of the following strategies you use to engage students? (Choose all that apply) – Strategies that align with multiple means of engagement

- Tasks are related to student in... 3
- Assignments have varied level... 2
- Students have a choice in whi... 1
- Students have grade guideline... 2
- Individualised feedback to sup... 12
- Opportunities to share and de... 7
- Student choice of flexible wor... 6
- Student choice of activities to ... 1
- Student choice in content (e.g.... 1
- Student choice in tools (e.g., b... 1
- Activities were allowing for act... 5
- None of the above 0

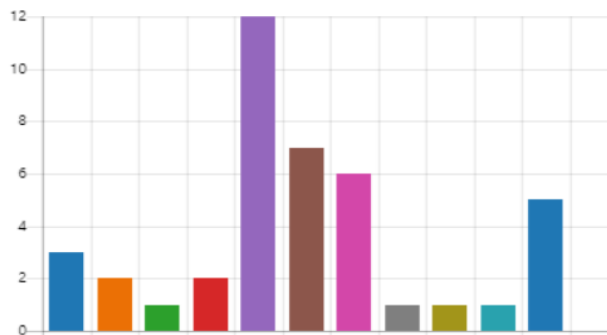


Fig 4.12 Describe how you heard about the UDL

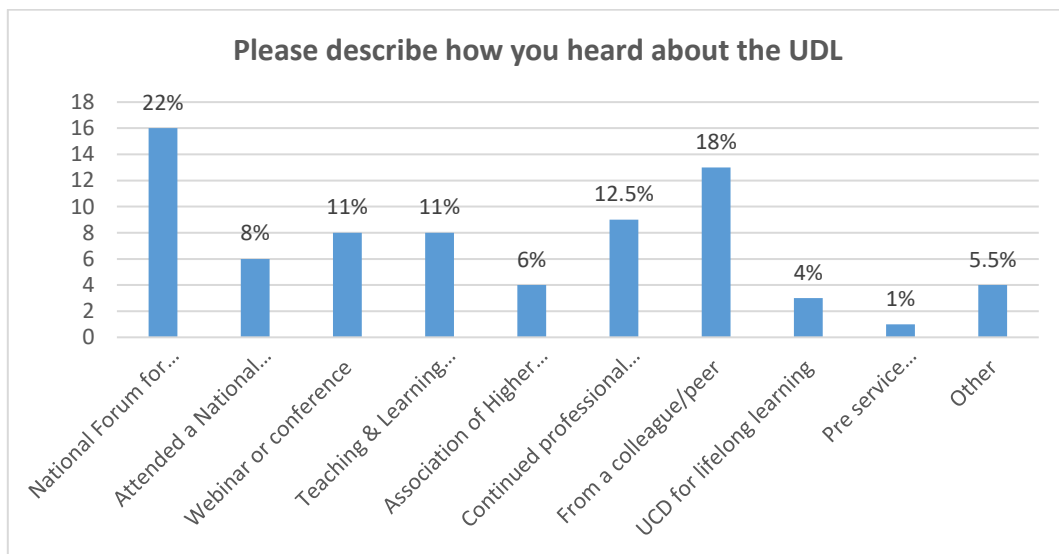


Fig 4.13 Implementation of UDL

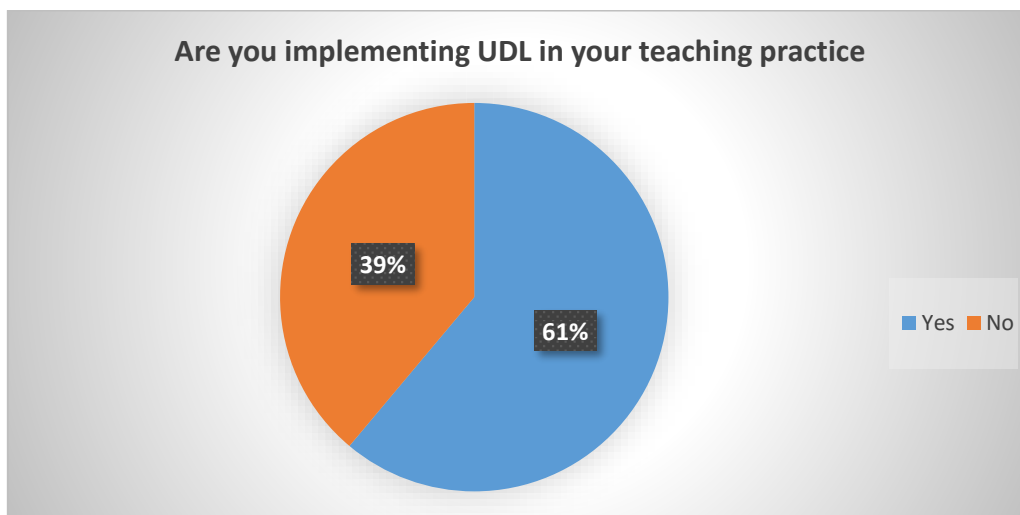


Fig 4.14 Confidence Level around Implementation

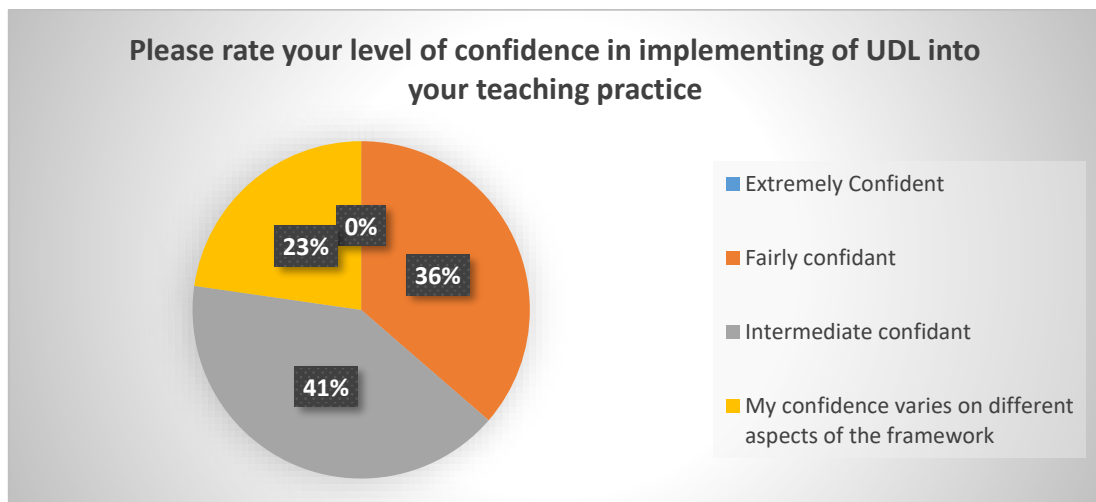


Fig 4.15 Attendance at Professional Development Training on UDL



Fig 4.16 Reasons for attending Professional Development

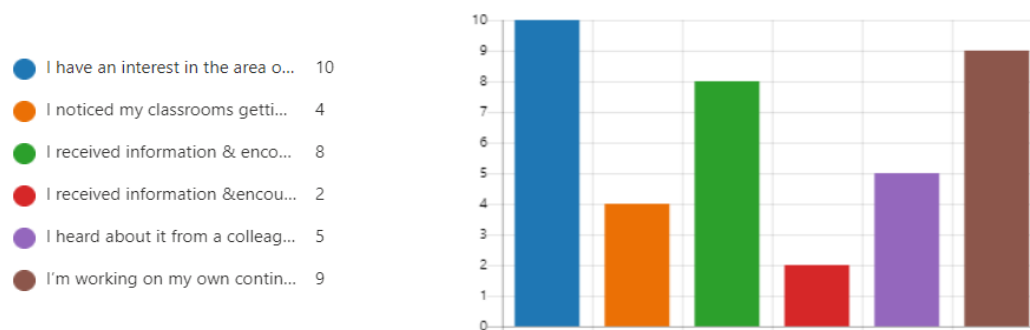


Fig 4.17 Rate your level of agreement with the following statements - after attending professional development training on UDL

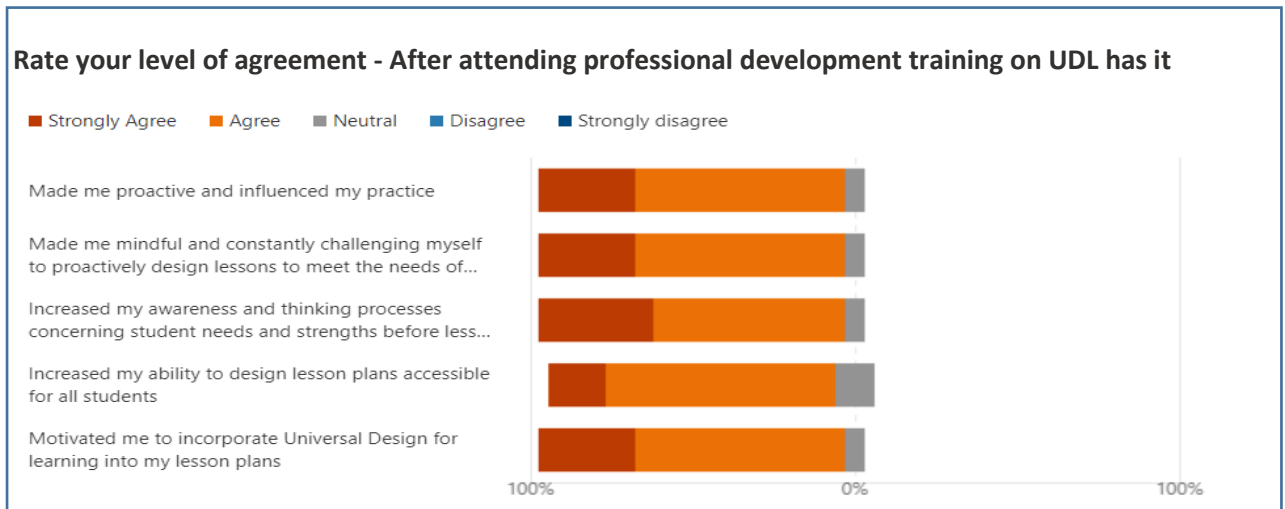


Fig 4.18 Professional Development I would be interested in

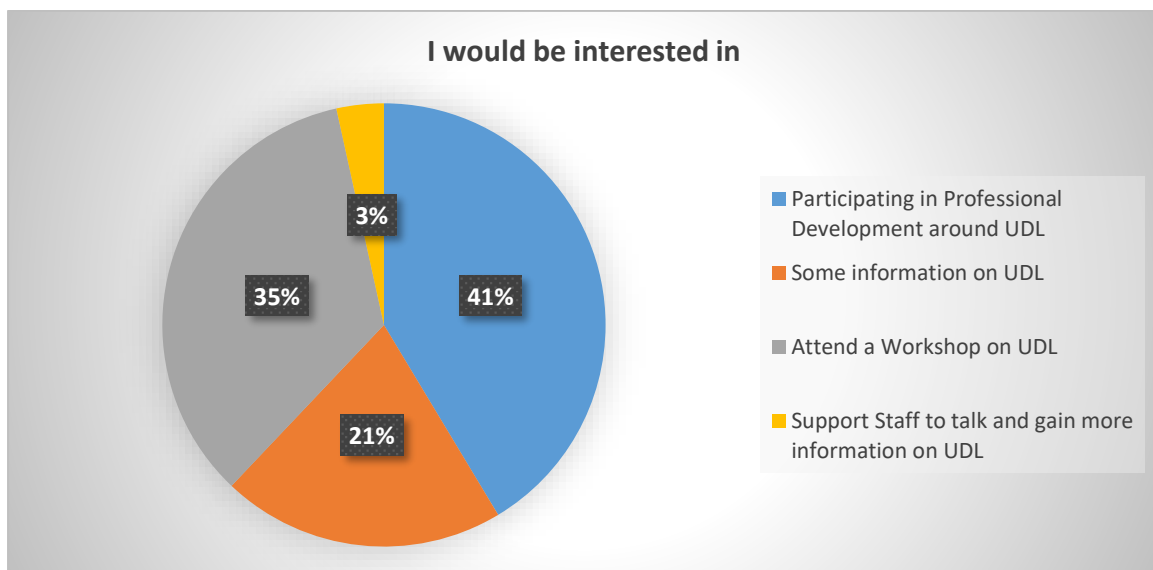


Fig 4.19 The best time for me to attend any CPD on UDL would be

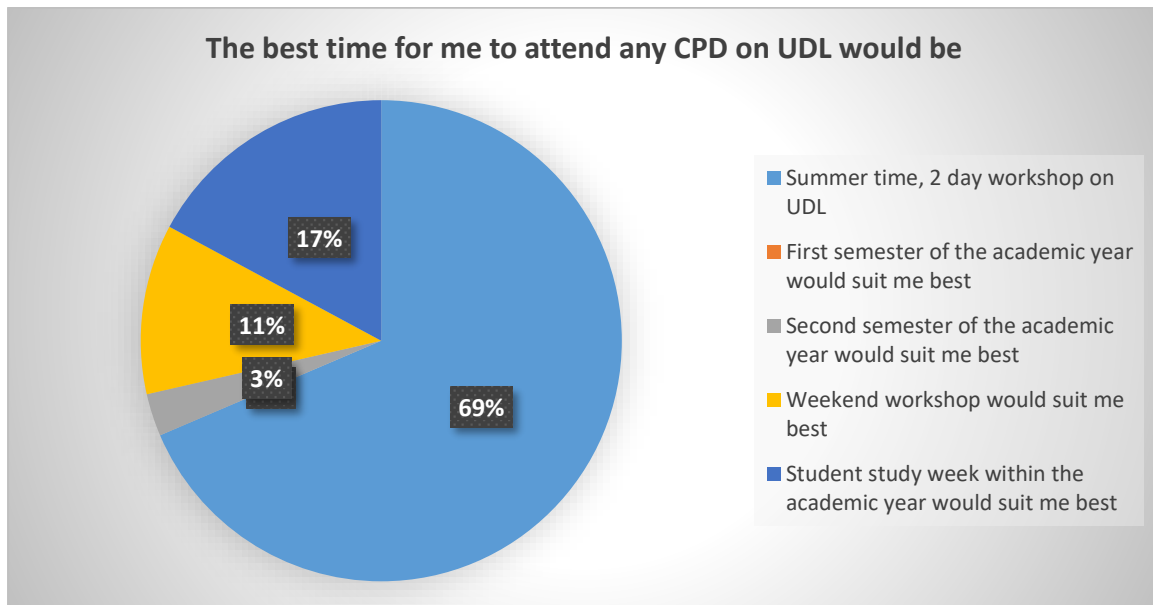
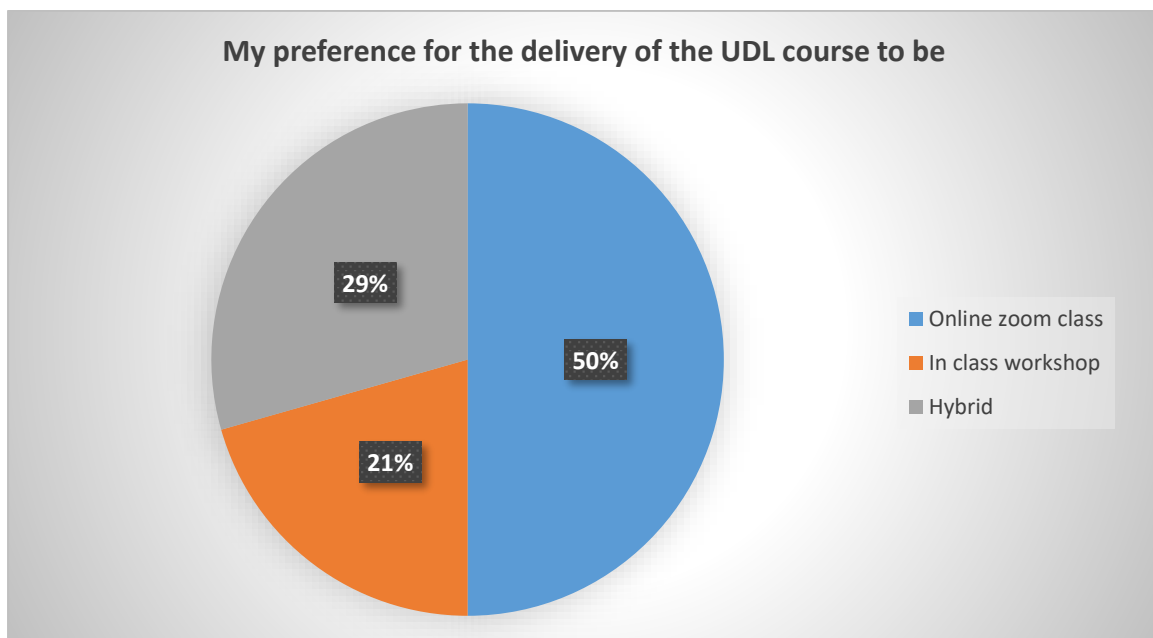


Fig 4.20 My preference for the delivery of the UDL course to be



## Appendix 10: Semi Structured Interviews Questions

### **Awareness**

1. Can you tell me how you came to know about Universal Design for Learning (UDL)?
2. What motivated you to implement UDL into your teaching practice?
3. Why do you feel UDL was a good framework for your teaching practice?

### **Professional Development**

4. Have you attended any CPD for UDL?

**If Yes,** Has Professional Development influenced you on implementing UDL into teaching practice. Please explain in what ways...

**If No,** where did you learn about implementing the UDL framework for your teaching practice?

5. Did you find adopting theory to practice challenging or straightforward? Please explain...
6. After attending CPD or learning about UDL, were there any supports for you implementing UDL into your teaching practice?

### **Implementing UDL Challenges & Gains**

7. Were you involved in developing your own module descriptor?

**If YES to Q7-** was implementing UDL, considered at that time

(If **yes**, did you find Incorporating UDL at the design stage helpful?

**If No** – would that be helpful to you regarding implementing UDL?

**If NO to Q7** –if you had of been involved in developing your module descriptor, would building in UDL at the design stage been helpful to you? Would you have included anything differently regarding UDL?

8. How confident would, you describe yourself in implementing UDL principles within your teaching practice.
9. Have you changed your teaching strategies across all the UDL guidelines or do you focus on specific guidelines? Do you offer variety?
10. Where there any challenges/barriers you faced when Implementing UDL into your teaching Practice?

11. Has implementing UDL into your teaching practice have had impact in the learning environment and student experience? Please explain....
12. How do you measure or know the effect UDL has had on your teaching practice?

**What is Best Practice in Engaging educators in UDL practices**

13. As an educator, implementing UDL into your teaching practice, are there any supports or resources that could be provided that would enhance/support you in implementing UDL in your teaching practice.
14. Is there anything the college management could provide to enhance or engage educators in UDL practice?
15. In your opinion, as an educator, is there enough emphasis put on UDL in Higher Education? Please explain, in what ways

Is there anything you would like to add?

## Appendix 11: Interview research questions and rationale for their inclusion

<u>Literature</u>	<u>Rationale</u>	<u>Question</u>
<b><u>Awareness</u></b>		
<p>The promotion of Universal Design for Learning (UDL) has become more prevalent over the last number of years (Padden, 2021) and gaining momentum in Ireland, evidenced by its increasing appearance across Irish educational literature from primary to post-secondary education and pre-service teacher training (Hick et al., 2020)</p>	<p><b>This question will be asked to participants so that the researcher can establish how they came aware of UDL where they were informed about the framework.</b></p>	<p>Can you tell me how you come to know about Universal Design for Learning (UDL)?</p>
<p>HEIs appear to operate with a mixture of aspects of UDL in relation to pedagogy and delivery (Martin, 2019).</p> <p>Canter et al., (2017) an education system and environment that utilises UDL meets the needs of inclusive classrooms and diverse learners.</p>	<p><b>This question will be asked to participants so that the researcher can establish if they are in fact implementing UDL in their teaching practice</b></p>	<p>Are you currently implementing or utilising UDL into your teaching practice?</p>
<p>According to Flood (2021), education in Ireland is at a critical stage in review and redevelopment across all sectors.</p> <p>HE is now at the point of transition. The number of people entering the system is growing, and students' profile is changing. Those entering HE will have very diverse learning needs, and HE itself will need to innovate and develop to provide flexible opportunities for larger, more diverse student cohorts (National Strategy for Higher Education 2030, 2011)</p>	<p><b>This question will be asked to participants so that the researcher gauge what motivated them to implement UDL into their teaching practice</b></p>	<p>What motivated you to implement UDL into your teaching practice?</p>

<u>Professional Development</u>		
<p>Higher education quality is heavily influenced by lecturer quality, and the professional development process has a significant positive impact on teacher performance (Okafor and Blessing, 2021)</p> <p>(Ryder, 2021) states that professional development plays a key role in the transition to a UDL campus.</p> <p>PD remains the primary method for educators to expand their repertoire of effective practices and learn how to implement those practices in the classroom (Fixsen et al. 2009).</p> <p>Capp (2020) agrees that teacher knowledge, understanding &amp; confidence is influenced by professional learning and engagement</p> <p>Flood and Banks (2021) acknowledges that PD helps educators to move away from thinking in terms of ability and disability and the traditional practice of retrospective differentiation to proactive planning for variability requires a change in lecturer mind-sets about difference, diversity, equity and inclusion</p>	<p><b>This question will be asked to participants so that the researcher can gauge if PD either formal or informal training on UDL have influenced educators teaching practice.</b></p>	<p>Have you attended any CPD on UDL?</p> <p><b>If Yes,</b> Has Professional Development influenced you on implementing UDL into teaching practice. Please explain in what ways...</p> <p><b>If No,</b> where did you learning about implementing the principles of UDL in your teaching practice?</p>
<p>Edyburn (2010) believes UDL holds considerable promise, he argues that adopting theory to practice is challenging</p> <p>Edyburn (2010) claims that UDL is much more complex than originally thought and</p>	<p><b>This question will be asked to participants so that the researcher to gage any challenges to implement UDL into their teaching practice</b></p>	<p>Did you find adopting theory to practice challenging or straightforward?</p>

<p>that educator’s confidence varies in relation to implementing the guidelines, checkpoints of this inclusive pedagogical framework.</p>		
<p>For change to be successful and change in teaching practice, lectures need to be supported through effective professional learning (Flood and Banks, 2021).</p> <p>Edyburn (2010) believes UDL holds considerable promise he believes that once educators understand the principles and what they look like they are left to figure out how to apply and implement UDL themselves</p> <p>An educator may feel confident at implementing a specific pedagogical strategy outline in the UDL framework but may not implement it effectively within the classroom (Capp 2020)</p>	<p><b>This question will be asked to participants so that the researcher to see if supports are there for educators implement UDL into their teaching practice.</b></p>	<p>After attending CPD on UDL, were there any supports in place for educators implementing UDL into their teaching practice</p>
<p><b><u>Implementing UDL Challenges &amp; Gains</u></b></p>		
<p>(Padden, 2021) agrees and emphasizes that retrofitting or adjusting anything while it is already in use is certainly, much more challenging and often far less effective than building in at the design stage. Implementing UD strategies in a new module therefore is ideal. However, when reviewing existing modules and considering student performance and feedback on the module UD strategies can be consider addressing any</p>	<p><b>This question will be asked to participants so that the researcher can determine if retrofitting or adjusting anything while it is already in use is challenging or more helpful building in at the design stage</b></p>	<p>Were you involved in developing your own module descriptor?</p> <p><b>If YES</b> was implementing UDL, considered at that time?</p> <p>(If <b>yes</b>, did you find Incorporating UDL at the design stage helpful?</p> <p><b>If no</b> – would that be helpful to you regarding implementing UDL?</p>

<p>difficulties to increase student engagement and inclusion.</p> <p>McGuire and Scott, (2006) state that implementation of UDL ideally should be carried out a module design or re-design stage and notes that:</p>		<p><b>If NO</b> –if you had of been involved in developing your module descriptor, would building in UDL at the design stage been helpful to you?</p>
<p>Capp (2020) study demonstrated that educators' confidence in implementation varies</p>	<p><b>This question will be asked to participants so that the researcher can gauge educators' perceptions of their confidence in implementing UDL</b></p>	<p>How confident would, you describe yourself in implementing UDL principles in your teaching practice.</p>
<p>Capp (2020) study revelled educators where least confident engaging with the principle one, providing multiple means of engagement and with the checkpoints and guidelines in the other two principles that related to engaging students. His study revelled educators were most confident in providing students with multiple means of representation. This could be because the principle multiple means of representation can be considered to be about teacher choice in how they present their lesson plans and content in contrast to with principle one and three where the student voice and agency come to the forefront.</p> <p>A study by Gronseth and Dalton, (2019) on UDL initial teacher training (ITE) revelled that teachers were confused by the principle of multiple means of representation and found the UDL guidelines difficult to follow at times, with much information to process. Both these studies showed varying levels of</p>	<p><b>The researcher-included theses question it to explore UDL implementation within teaching practice and if any of the UDL strategies where more focused on or preferred over other guidelines.</b></p>	<p>Have you changed your teaching strategies across all the guidelines, or do you focus on specific guidelines?</p> <p>Do you offer variety?</p>

confidence in relation to the foundations -principles, guidelines and checkpoints of UDL.

UDL is about ensuring that a variety of pathways (choice and flexibility) are offered to students for understanding content; those goals are clear and specific to the expected outcome; and that student assessment is flexibly designed to enable every student to demonstrate their knowledge, values, understanding, and skills in a variety of ways (Meyer et al., 2014).

UDL framework puts the responsibility for adjusting traditional methods on the faculty member instead of the student (Mayer & Rose 2005)

UDL addresses the fact that there is no one form of representation that will work for all learners and that educators need to present the content of the lessons in a variety of ways (Mavrovic-Glaser2017)

According to AHEAD (2017), UDL aims to improve the educational experience of all students by introducing more flexible methods of teaching assessment and service provision, to cater for the diversity of learners in classrooms

UDL acknowledges that learners interact with the material differently and should be given the opportunities to show what

<p>they have learned in ways that suit their individual needs (Dell et al., 2012)</p> <p>Educators must consider diversity and provide opportunities for all to be engaged and motivated to learn (Dell et al., 2012).</p>		
<p>National Strategy for Higher Education 2030 (2011) believes that the positive engagement that students have with higher education, the quality of their learning experiences and the environment in which students learn shape the future development of society</p> <p>Dymond et al., (2006) The study found many positive outcomes for teachers and students, exceptionally positive for students with disabilities, increasing social skills, participation, completion of work, grades, and test scores</p> <p>Lowrey et al., (2017) study the results revealed positive stories about the classroom having a sense of belonging. Students were engaged by having choice, autonomy and they sought help from each other, creating collaboration and community</p> <p>Advance HE (2019) states that the 'Student Voice' is key to many researchers and policymakers planning for progress towards UDL</p>	<p><b>This question will be asked to participants so that the researcher can determine has implementing UDL had positive or negative effects on learning environment and student experience within teaching practice</b></p> <p><b>This question is being asked to educators to gauge if any, how they measure the effectiveness UDL has on your teaching practice</b></p>	<p>Has implementing UDL into your teaching practice have had an impact on the learning environment and student experience? Please explain....</p> <p>How do you measure or know the effect UDL has on your teaching practice?</p>

<p>Canter et al., (2017) reported from their study that participants highlighted several challenges with implementing UDL, including lack of time, larger caseloads, lack of funding, anxiety about learning new technology and coming up with ideas for students with more significant needs</p> <p>Craig et al., (2022) believe the demands on educators' time and the limited resources allocated for PD during the academic year could be barriers to enacting UDL</p>	<p><b>This question is being asked to teachers to compare responses to definitions available in the literature review.</b></p>	<p>When Implanting UDL into my Teaching Practice some challenges/barriers I face</p>
<p><b>What is Best Practice in Engaging educators in UDL practices</b></p>		
<p>AHEAD (2017) acknowledges that creating spaces for reflection and collaboration is an integral part of an educator's implementation of UDL.</p> <p>Craig et al., (2022) believes the institute's structure that embeds modelling, practice, content connections and other vital elements to facilitate teacher understanding and subsequent classroom application is essential.</p>	<p><b>This question is being asked to participants to get their perspective is there anything required to further support or enhance in implementing UDL in your teaching practice.</b></p>	<p>As an educator, implementing UDL into your teaching practice, are there any supports or resources you feel could be provided that would enhance/support you or other educators in implementing UDL in your teaching practice.</p>
<p>The need for vision and strategies on how to implement UDL comes from the top down (AHEAD, 2017)</p> <p>Draffan et al. (2017) suggest that UDL can only be achieved if approached strategically and viewed as an evolving national, organisational and professional journey</p> <p>UDL and inclusion encompass all facets of college life, not</p>	<p><b>This question is being asked to participants to gauge if the institution incorporate any strategies to enhance UDL or engage educators in UDL practices.</b></p>	<p>Is there anything the college management could provide/do to enhance or engage educators in UDL practice?</p>

<p>just teaching and learning (Martin, 2017; Milton et al., 2017). HE is acknowledging the systemic nature of the organisational change required in introducing UDL is the first key factor for success. (Draffan et al., 2017).</p>		
	<b><u>Closing</u></b>	
		<p>In your opinion, as an educator, is there enough emphasis to be put on UDL in Higher Education? Please explain, in what ways</p>
		<p>Is there anything you would like to add?</p>

Appendix 12: Semi Structured Interviews – Coding for Data Analysis

	Lecturer A	Lecturer B	Lecturer C	Lecturer D	Lecturer E	Themes
<b>Awareness</b>						<b>Awareness</b>
<b>1. Can you tell me how you came to know about Universal Design for Learning (UDL)?</b>	I always had a huge interest in accessibility within Education and learned a little bit about UDL during my masters and then I completed the UDL Badge through the National Forum	I would have learned about or known about university design (UD) because that's been around for donkey's years and then, began to hear a little bit about universal design for learning, I would have confidence, knowing the universal design side of things with design, and then seeing how learning has adapted or taking that on as well gave me an interest in it. I then learned more about UDL doing PD.	When I started doing the masters course basically under this subject, I think it was EDI equality, diversity inclusivity and that's when I came across the concept or shared with the concept UDL	I work as an Industry professional in the construction area. So that would be my initial background and universal design (UD) for the built environment is something that I would be extremely familiar with. When I attended the postgraduate graduate CPD with Griffith College, I then learned about universal design for learning. It was a lovely merging of the 2 disciplines coming together, and actually, the principles were very similar.	I first learned about the concept on the post graduate doing CPD and then I got to know through the college when they advertise the universal design digital badge and I decided I like to look at that so I went to the head and did the UDL digital badge. I went on and did the facilitators badge then because I actually got into it and really enjoyed it. I then did a bonus first level with CAST, on udl so I did that as well. I really liked the concept.	CPD T&L (4) Industry (2) UDL Digital Badge (3)

<p><b>2. What motivated you to implement UDL into your teaching practice?</b></p>	<p>Classrooms are becoming larger with more diverse students entering HE. I think it is important and I am really interested in making sure education is accessible to all and accommodating a variety of learning styles within the class.</p>	<p>Thinking about my learners, you know how much more diverse classrooms are becoming larger. if you think back to college experience. There would not have been any kind of considerations for other ways of learning, other ways of presenting things, or ways of doing anything. Just a linear one-way, no other approach so I suppose that is probably. Why, from personal experience, and observing the more diversity group. Obviously observing a large diversity coming into your class. Classrooms are larger now with lot more student diversity motivated me.</p>	<p>CPD helped me become aware of it and would have motivated it but also circumstances called for it anyway. More diverse students entering into college and with covid for example: last year it actually turns out that one of the students in in the class was deaf thankfully with zoom and technology. I was able to plan to close captions and subtitles to help also I could use the chat with really helped.so that was all UDL multiple representations of multiple engagement. It was more the situation called for it I don't know what I would have done if I wasn't aware of UDL. Therefore, when I think back on past classes before I knew about UDL there could have been loads of students that never flagged it and how the hell did</p>	<p>It just made sense... when you think about universal design and the built environment it is about designing spaces that are accessible for all. No matter if you're you know if you have impaired visual. If you have impaired body ailments if you're heavily pregnant, or you're pushing a buggy, and if you apply that to a classroom, it is exactly the same thing.</p>	<p>I suppose, was to when I was doing the postgrad. You have all these theories, you're learning and you're learning that each individual learns differently, you sort of think found out all that knowledge as you as you went through the postgrad, and suddenly realizing, Yeah, that's so true and realized that. there's got to be a better way of doing things.</p>	<p><b>Motivation</b> Diversity within HE (4) CPD (2) It made sense (1)</p>
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			<p>they get by. so UDL has really opened up my eyes and made more aware and more aware of what's needed for everyone no matter the circumstances suddenly realise the benefits of UDL. the importance of it. It now makes me stop and think put things in place before starting a class. Not everyone discloses information if they need extra support so it's my responsibility to ensure that everyone has the same learning experience not matter the circumstances. it opened up a whole new world. Once you became aware of it. Then you suddenly realize this makes a whole lot of sense. it's so logical and common sense</p>			
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<p><b>3. Why do you feel UDL was a good framework for your teaching practice?</b></p>	<p>The students in my class are from a variety of educational backgrounds with some never having attended third level before. Using UDL has allowed me to be a bit more conscious of those in the classroom and ensuring they all have the same chances within the learning environment</p>	<p>Would not say, I somewhat strictly use it as my framework. However, I would definitely have it with back my head. Been thinking about things moving to more online and engagement students through, Moodle and Candace and blackboard. It kind of forces you to be a bit more Universal friendly. I guess it makes sense with such a diverse student group, 2022 we are not just sitting in boring lecture walls with 500 people listening to a lecture and regurgitated information. We need to be evolving and thinking of everyone and the diversity in learning. The UDL framework fitted supporting learner variability, which is important for today's diverse HE classrooms. So that why I thought, it was a good framework</p>	<p>It made perfect sense also with the amount of student diversity and recognising everyone learns differently I wanted to ensure I was reaching everyone and UDL framework seemed the perfect fit.</p>	<p>It just made sense... perfect sense.</p>	<p>When I then started reading through the UDL guidelines, I said, they're really good guidance. I really thought it is a fabulous concept. What I really liked was the 3 principles. Programmes that are structured do not allow people to express themselves. Some people are better expressing themselves veritably as opposed to writing things down that's one of the things I liked about UDL its about giving choice. Also, when you're presenting your materials, I'm very visual, I like to see mind maps, I like to see diagrams other people like to see text and read text, other people like videos or audio. So, what I liked about UDL, you need to produce your materials in the in different formats. Why not produce a mind-up and piece of text gave that layer of variability and</p>	<p>Good Framework for teaching practice Catered Learner Variability (5)</p>
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		it accommodates and supports all students.			accommodated all students.	
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Professional Development						
<b>4. Have you attend any CPD for UDL?</b>	Yes, through the Masters CPD and I also completed the UDL Badge through the National Forum and I also completed the Facilitators Badge	Yes, I did it myself, there is an option for it, I took it on myself. It was offered made aware of it by my department. It was kind of voluntary sign up out of my own time. And so, no, I wouldn't say there was any kind of encouragement from the college side. Nobody pushed it or suggested I did it, or anything. I did it with the national form - AHEAD- UCD, UDL the digital Badge.	well, yes through the master's as I said but I am now aware there is a course with AHEAD on UDL which I would be really interested in doing to learn more about it.	Yes, I learned about UDL in the post grad, and I then took on the UDL Digital badge with the National forum with Ahead and UCD.	Yes, the post grad, UDL digital badge and CAST level one	<b>Attended PD</b> UDL digital badge (4) CPD post grad or Masters (4)

<p><b>If Yes, Has Professional Development influenced you on implementing UDL into teaching practice. Please explain in what ways...</b></p>	<p>Yes, completing the badge has definitely influenced me to implement new things into my teaching. It gave me new ideas of small changes I can make that will benefit the students</p>	<p>I guess it did. In doing the badge itself, you to do some sort of an intervention, some sort of udl intervention as part of it. And you kind of write about that in the assignment at the end. Definitely did influence my practice made me more aware moving forward and the fact that learning went online and the change in teaching environment it really helped. Covid probably made me think a lot about udl as well, because of the fact that you were perhaps using zoom and transcripts. You were sending some slides and perhaps a little video thing like that. Might have kind of progressed to the well. So doing the course was kind of well timed, in, that sense that it wasn't like a major shock to be thinking about how to implement it. I guess we have been doing it</p>	<p>Without a shadow of a doubt PD has influenced me on implementing UDL in my teaching practice. Once it opened up your awareness of what you were doing it just shifted your mindset. Well, I didn't have any mechanisms for getting feedback from students, so I was given a lecture, but the learner was passive it suddenly made you aware that we need to do engagement here to see if they're picking up on the information. So that triggers you have to engage with questions just to get feedback Have they got what you're talking about are they interested that they engaged. So yeah, it brings it to a level that once you do it, and you look back and say it was madness to try you the other way, because it just it wasn't effective. once</p>	<p>I learned about UDL in the post grad which I just found like to me it was like a moment of enlightenment so then took on the digital badge. It did motivate me to want to learn more and more and to implement it into my classroom. absolutely it had an influence would also say Covid had a big impact too.</p>	<p>Doing the digital badge PD was not a complicated course or massively time consuming either. It's very well structured and actually you know you learn so much as a CPD course I think it's fantastic. Yeah, definitely, 100% I find you're constantly learning and adding to your knowledge as you go. I would say yes definitely influenced my practice and my facility tutors, when developing their content, I want you to adhere to the UDL guidelines as much as you possibly can, and I gave them the UDL guideline sheet. once we get to the end of the year, I want to be able to sit down with my tutors and say, okay, what did we implement this year and then what was the plus we're going to do for next year.</p>	<p><b>PD influenced teaching practice</b>  Yes (5)  No (0)  Covid (2)</p>
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		anyway, but it did help with implementing other aspects.	you've done the CPD postgrad or masters you've covered all the learning styles and theories and you know that you're supposed to meet these outcomes, Having done the course and passed the course. you actually have then a confidence level that you know you can do it. actually, give you the means and the methodology to actually delve deeper and basically seek answers to questions. get deep and come up with what would be described as perhaps relevant answers			
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<b>If no, where did you learn about implementing the UDL framework for your teaching practice?</b>	N) A	N/A	N/A	N/A	N/A	
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<p><b>5. Did you find adopting theory to practice challenging or straightforward? Please explain...</b></p>	<p>I found it straightforward but it's a huge area. I have only been able to make small changes with each module and I've built on these each semester. Before completing the digital badge, I would have perceived UDL as a huge undertaking. PD changed my perceptions and what I've learned from doing the digital badge is that its bite size bits at a time. Making small changes and building it into your curriculum slowly is the best approach.</p>	<p>No, it's pretty straightforward. By doing CPD It was probably just force me to implement it into my practice, you know, rather than kind of thinking about it. It was a real kind of incentive. So, it dd influence you, think it on it after attending the Cpd.</p>	<p>It was quite straightforward because a lot of it was happened during lockdown for me that was the big shift for me in UDL mindset. The technology actually helped and provided it for you. technology really made it easy for the lecturer and now incorporating all what I have learned from UDL and lockdown incorporating back into my classroom teaching really opened a whole new world around UDL. So, I found technology was a great assistant to do in the Udl. that's something that really helps in support it was almost essential, it was brilliant.</p>	<p>Well, for me It was quite straightforward. But you got it, understand that I'm involved in a faculty and our class the way they're set up actually lend themselves very much to UDL. What I teach is very much a lot of hands on I always think I don't really lecture... I mentor and they're always getting formative feedback constantly. There's a lot of one on one with me, and I can then adapt the classes depending on their needs. So, I can react to students, very easily. I suppose it's something I want to have done naturally but now knowing about UDL it almost gives me the license to be able to do it. This does exist this is the right thing to do</p>	<p>The I found it challenging, it felt incredibly slow. Initially, when you see something new and You're, all enthusiastic about it, it looks straightforward, and you want to just do everything. you suddenly realise you can't do everything. it's time very time consuming and been very gradual process. That's one thing I've learned you've got to learn to be very patient with UDL. When I did the UDL Badge I wasn't actually lecturing at the time. So, I Did I did a session with me with my tutors on it. and honestly, what was surprising that came out of that is that a lot of them are doing a lot of the udl things but they're not they weren't conscious that that it was UDL and doing it naturally. They were just not aware it was UDL. when we talked through</p>	<p>straightforward (4) Challenging (1)</p>
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					<p>it there was a few things we identified, and it was an eye opener to them. I think by encouraging them all to the badge or PD which I have done, will definitely make a big difference and enhance their awareness around UDL. Once their awareness is their it opens up your eyes to a whole new teaching approach and so much more conscious about learner variability and accommodating it.</p>	
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<p><b>6. After attending CPD or learning about UDL, were there any supports for you implementing UDL into your teaching practice?</b></p>	<p>Not really, no, there is CPD Sessions held on to campus that again give you good ideas to use but no real support on how to implement them</p>	<p>Not official supports. you know there's lots of things available online, and not directly through the college, but I am seeking them myself. Not that I'm aware, of the supports through the college but I'm sure if seek in the college they'd be there, but as a part time lecture I'm not just hang around to college you know. I work outside and I part time teach. I don't have full days there. Yes, it would be nice to have more support, someone to talk to or repository</p>	<p>No there wasn't but then again, I didn't necessarily go looking for them right so if you're there I don't know about them. I just applied what I learned or remembered from PD around UDL.</p>	<p>I would find that my faculty are highly supportive and there are so many skilled people in the team and very much UDL focused so the support is there within the faculty. Outside of the that, the digital learning supports are amazing and are so supportive and were very helpful when we moved to the digital world, I was able to say, this is what I need to do, how do you feel? How can I do it? And like within my minutes they had solutions. I think we're very fortunate or should I say I feel very fortunate, the support systems that are there for me, I can't speak for everyone.</p>	<p>Not really, not that I know of, I don't know anything. What I do know, there is a movement there of people who would like to create a community of practice for Udl, and I'd love to see that and come to fruition. And if it was across faculty, it would create a community of practice, I think, it would be absolutely fantastic, because you know, it'd be sharing of best practice, and people can see how it's done because it sometimes it's hard to simulate in your mind how to integrate UDL into your practice. so, get more peer collaboration around UDL would be fantastic.</p>	<p>No (4) Faculty highly supportive with UDL (1)</p>
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**Implementing UDL Challenges & Gains**

<p><b>7. Were you involved in developing your own module descriptor?</b></p>	<p>Yes, I was involved in developing my module for review</p>	<p>No, that would have been at program director level and I was just given the logic description.</p>	<p>No, but what I actually do, I allowed myself because, it was the module I teach and, working in that space for years. I give myself a license to interpret the outcomes it in a way that I believe the class would be a benefit to them. Based on feedback from the students by talking to the students I knew whether I was actually hitting the targets or not just for what they wanted out of a course, So therefore, you address those areas to give them what they're looking for. the module is in the area of personal or personal subjectivity, from that point of view. So that way you can adopt it and I adopted and took a Udl perspective and take a personalised view. what do they need for</p>	<p>No, so our modules and handbooks are already approved and set down pretty much in stone and have been QQI approved. I can't really do anything as far as the grading system is concerned of the module learning outcome they are set but the small things that we can change like, if this additional small items that we feel that might be more relevant for the students, or actually sometimes I find that, you know, maybe, if something wasn't very clear in the module handbook, I kind of rewrite it or add to it, and then highlight that send it to my programme director for their review. I actually don't think the PD ever not and said no, that makes sense. Go ahead. I can make small amendment a small Nothing, nothing to do with grading or learning outcomes, or anything like that, they stay set. But yet they're all they're very</p>	<p>Yeah, I was.</p>	<p>Yes (2) No (3)</p>
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			them and that allowed them that'll let you want to allow almost a personalization of it for each person they were all at different stages and different understandings and different interests this way you could give it in such a way that, and people could actually identify with and tune in at the point where they believed themselves to be	open to you know, making the module handbook clearer as we go along.		
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<p><b>If YES to Q8-, was implementing UDL, considered at that time</b></p>	<p>No not at the time as I hadn't completed the badge at that time</p>				<p>No, well, the problem. There was all of that was developed before I done all my CPD around UDL. we've got validated for a number of years so when it comes to revalidation, time, and we'll be looking at it very differently, we will be adding and building in the UDL parts.</p>	<p>Had not completed PD before designing modules (2)</p>
<p><b>(If yes, did you find Incorporating UDL at the design stage helpful? If no – would that be helpful to you regarding implementing UDL?</b></p>	<p>Yes, the next time the module is being reviewed I would Definity include more UDL elements. At the moment I have been able to make small changes within the confines of the QQI approval we currently have</p>				<p>Yes, without a shadow of a doubt it would be much easier to intergrade at design stage would be extremely helpful and better, but you need to have the UDL knowledge at the design stage.</p>	<p>YES (2)</p>

<p><b>If NO to Q8 –if you had of been involved in developing your module descriptor, would building in UDL at the design stage been helpful to you? Would you have included anything differently regarding UDL?</b></p>		<p>Yes, a lot easier, it's very difficult when you're just given a module descriptor. and you have to work to it. Obviously it's always more beneficial when the lecturer is involved in development from the beginning. And yeah, Obviously it means that you know, when you're thinking about it from kind of the wider kind of strategic level, you can begin to implement it rather than trying to shove things in or you know change assessments, and hope and they'll get accepted, and all that sort of stuff/ it would be so much better at design stage as its universal to implement UDL it would be easier rather than fitting it in.</p>	<p>Without a shadow of a doubt. Once you you've been introduced to UDL. You suddenly realize the only way to go is really the only the only show and the only way to teach. It's so self-evident. Its madness not to use it, so anything that helps in the design stage with UDL would be brilliant. You would go for it as an educator because it makes sense but who it really makes sense to is the learner. once it helps them that's all that matters. you are just a few so in that sense its ideal for a learner centre approach or learning. it's important to get UDL into your teaching either way but getting it in at the design stage just makes sense. UDL always has these learner activities involved, and that way, then they have to do a bit of work which</p>	<p>I think it's all it was already there yeah you know; it was already there and again, I have to reiterate that my faculty might be slightly different to the other faculties. UDL is very much there, a focus because they're already implementing a variety of lots of different tools for the students to learn and that is kind of like their baseline and works fantastically. For example: when students enter first year, we have a variety of disciplines in all the same classroom with each other. So already they're being collaborative you've already. Got a mixed group of different people in different interests, and that first year they learn a little bit of everything. So even though they want to be one of the career paths. They learn about all these other disciplines in that first year, and some of them, then it may kind of make some of them think. OH, you know I actually do like go down a different</p>		<p>YES (3)</p>
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			<p>means there statistically. they're more likely, remember. and to learn more than just sitting back and listening passively. I'm a big fan of UDL but hadn't heard of it until I walked into a PD class one day.</p>	<p>path and they can change within that first year, and then specialize then it. It's opening them up to everything really that choice of the path that they choose that's exactly so with that alone you can see it's already implemented.</p>		
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<p><b>8. How confident would, you describe yourself in implementing UDL principles within your teaching practice.</b></p>	<p>I would say I am fairly confident but there are definite areas I would like to include more of in my teaching practice.</p>	<p>I wouldn't say I'm super confident because I wouldn't say it's like something I'm every day thinking about. If I was a full-time staff member and was able to devote time to, be researching it, implementing it, thinking about every class, every lesson how to implement it. That would be great, and I love to do that. but I don't have that capacity as a part time lecturer at the moment I understand the principles I understand the concept of it, and implement bits here and there when I can, it is quite ad hoc how I approach UDL. wouldn't say I'm an expert or anything.</p>	<p>I would say I'm fairly confident, no expert there's always room for improvement or to better implementing UDL. It would be nice to talk to someone get some ideas.</p>	<p>I would have no issues, none at all and would be very confident.</p>	<p>Fairly confident. I wouldn't say I'm absolute fantastic or anything like that. I kind of feel I'm in the intermediate stage. Not a novice or a beginner I'm in that middle and I've still got a lot more to learn, and to listen and hear what other people are doing and build that knowledge. Which I you know I intend to do that's part of my learning plan</p>	<p>confidences vary ad hoc (1) Fairly confident (3) No issues very confident (1)</p>
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<p><b>9. Have you changed your teaching strategies across all the UDL guidelines, or do you focus on specific guidelines? Do you offer variety?</b></p>	<p>Because of the nature of what I teach, I have primarily focused on Action and Expression, but I would like to include some points from the other areas moving forward.</p>	<p>I would say I introduce one principle in particular. I kind of take it as more holistic overall kind of approach. I guess my understanding of beauty came initially from universal design, which is kind of generally designing for everyone. Yeah, so I try a variety, where possible.</p>	<p>I wouldn't actually focus on specific principles. I would implement them across the teaching as much as I can but primary looking at Action and Expression giving the students choice and presentation, providing different formats. Once you've done the CPD postgrad or masters you've covered all the learning styles and theories and you know that you're supposed to meet these outcomes, Having done the course and passed the course. you actually have then an increased confidence level that you know you can do it.</p>	<p>I'd offer a variety but if I had to pick one to improve, It be more in with the principle involving technology (engagement). additional resources for online. So I found before Covid I didn't really know much about the digital world. It wasn't something that we use a lot and I'd that would be the one that would probably be my weakest point. I think the supports there at the moment, but I'd welcome more of it.</p>	<p>it's very difficult to use them all, because if you use them all, you need a little army to do all the work. so, it's to try and focus on getting one or 2, aspects influences when their influence, and they're working and everybody's working towards that then go on to the next bit, and then go on to the next bit. It's just not possible to do. to do the thing can you could you could actually end up getting swamped losing your way, then whereas I think if you if you can keep your focus on one aspect initially, and then, when you're happy that that that's being mastered, then move on to the next bit in the next. it's really difficult because it's time it so limited to get all the stuff done but try and focus on the simple things like putting the materials up in different Format: (Multiple means of Representation)and</p>	<p>Action &amp; Expression (3) Representation (3) variety (2)</p>
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					<p>then try and focus on at the other end, giving people the choice in their assessments and giving them a choice, and how they and how they demonstrate their achievement.(Multiple means of Action and Expression)</p>	
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<p><b>10. Where there any challenges/barriers you faced when Implementing UDL into your teaching Practice?</b></p>	<p>The main challenge has been having some support in developing new resources using UDL especially for students with more significant needs. Time can also be a big barrier in developing resources and making significant, worthwhile changes to resources</p>	<p>well, things like change in assessments as not always clear cut or easy. It's not one of the easiest things especially with QQI barriers. for example, I've been trying to do site visits and did them in the past, and they were rejected, you know again to diversify the learning environment. They were rejected by faculty as well. So yeah there's lots of barriers.</p>	<p>Yes, of course, I suppose it was in the sense that you would hit a brick wall. Say, how the hell do I actually-How do we do this? also when you are initially introduced to Udl. It seems self-evident, and it appeared to be self-evident But then, as you delve into it there was stuff that wasn't self-evident, you'd have to ask yourself. How do you know that they're actually understanding this What do you need to do? how do I know it's working. I do a bit of a questionnaire what's your understanding of this? you would get feedback and suddenly realise they're not getting this at all</p>	<p>As I said it was actually implemented already but I think it's always going to be try, reflect, try again, and I can think something's an amazing idea and this is going to work fantastic and then it actually doesn't work very well with the students So you have to be constantly reflecting on reviewing everything that you do and I also talk to them, I talk to the students hear their voice. I'd be going back to the with How did you find that? Was that helpful? Any ideas? So reflection and, feedback is really important, really important, especially from the people you're working with "The learners" in your room. you can't get too much into your own bubble.</p>	<p>Time is an issue. It is very difficult to achieve a lot, only bite sized chunks of UDL as its just too much work. Also, problem is once you've developed a program for QQI has been validated, you're very than hamstrung, and certainly by the structure. Not necessarily the detail of the assessments but you're stuck. Then, and if you've sat in the office again, and actually, when you really get into it, you find that maybe the case study wasn't the best option you have to stick with it. so there's a little bit of a little bit of that to you. You get very locked in by the by that QQI structure and if you've known a bit more about UDL when you were developing or the team had known a bit more when developing we probably would have come up with a lot more. So if the</p>	<p>Time supports (2) barriers in making changes</p>
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					<p>awareness was there at the design stage, it would probably made a little bit more easier than fitting and having to try to slot things into the curriculum here and there. If it was structured and developed at design stage and implemented at design stage, it would be a lot easier moving forward</p>	
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<p><b>11. Has implementing UDL into your teaching practice have had an impact in the learning environment? Please explain....</b></p>	<p>Yes, including forums on Moodle has been a great way to get students involved in discussions. Also, giving options within the assignment has been great and alleviated stress among students. Part of the assignment asks for a LinkedIn Profile to be developed. Not all students were comfortable with this so offering an alternative has been well received from the class</p>	<p>I guess just kind of looking at it from an outsider for a second, the learning environment is so different. So obviously it has an impact, and if you think of the learners are so different as well. I hope so. But again, it depends because some modules there have been less, I guess udl first versus others that maybe have been considered a look.</p>	<p>Absolutely, it has impacted my teaching practice. students are so much happier especially when you give the choice on assessment e.g. video or write. It would also translate through Feedback.</p>	<p>Yeah, I would, I think it has impacted but you know what, and I have to be brutally honest I think it's that covid I think and I've talked about this with people before, but something happens to us all when we went into lockdown and something happened when we were all forced online. We were suddenly invading into each other's homes and there was there was a huge side of me, became a lot more empathetic and gave that shift in mindset. More than I've ever been before...I think as well, without having the teaching practice or post grad and learning about udl before that maybe I might have been a little bit traditional myself, like that's the way I was taught so that's the way I should teach so I think a combination of both udl and covid has impacted my learning environment for the better. that traditional part is gone completely gone it's it doesn't exist,</p>	<p>That's tricky one, I don't know. It makes you be very much more cognizant of doing group work and the benefit of peer interactions and that kind of thing and you can see a change from students' reactions or environment. There's more of a collaborative community within the classroom. It certainly makes you much more aware of trying to build all of those things in here into the environment.</p>	<p>yes (3) covid mentioned again(impacted)</p>
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				<p>it's irrelevant, and it's not healthy, it does not make a healthy trusting atmosphere for the people. So, I think both covid &amp; UDL</p>		
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<p><b>12. How do you measure or know the effect UDL has had on your teaching practice?</b></p>	<p>Discussion and participation level in activities that have been developed with UDL guidelines in mind and also in the assignment, I can see how resources developed with UDL guidelines have definitely helped the students produce really good documents</p>	<p>I'm not sure how to measure it. I never thought of that or do that in my own practice anyway. Again, as someone doing quite ad hoc, not very strict on my implementation approach. I haven't measured it to date.</p>	<p>Feedback and reflection is key. I have to ask the students or do feedback myself some faculties never share feedback with me, so I never knew how I was doing. If I got it, you'd know you were hitting the areas. feedback is critical because it helps it helps you cover yourself cover the material better to be more conscious of what way you're doing it you then you almost get a a second, an insight into when you're writing something. and you're presenting something putting a bit of text on PowerPoint. This is where you develop a confidence level that allows you engage on a level that you can suspend your own. feedback will help your reflection process. It's a continuous role for you in terms of continuous talk</p>	<p>By feedback and speaking to my students it's so important.</p>	<p>I'm not sure, well it's not been measured at the moment but I would welcome that. I'd like to know where we need to improve and the impact it is having on out students learning, that support would be greatly appreciated.</p>	<p>Not sure (2) Learner participation and Feedback (3)</p>
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			<p>process and continuous improvement. it helps you present the new the same stuff in a refresh manner all the time, as opposed to just rehearsal presentation of 4 years ago. It's doing the students and injustice by not hearing their voice.</p>			
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**What is Best Practice in Engaging educators in UDL**

<p><b>13. As an educator, implementing UDL into your teaching practice, are there any supports or resources that could be provided that would enhance/support you in implementing UDL in your teaching practice.</b></p>	<p>A repository of sample resources would be great that also included templates on how to produce them. There has been some fantastic ideas shared at UDL focussed CPD Sessions on campus but it would be great to have a handbook/templates on how to produce them for your own class</p>	<p>Yeah, I think by sitting down with someone who is an expert or support in UDL or someone to sit down with at that design stage and look over the modules have a discussion around things it can be very solitary otherwise. To soundboard things off someone would be fantastic. Again, if that came from department level or a person in the college I could go to. I'm trying to think of things that wouldn't be totally time-consuming cause that's the issue and barrier to UDL. I think the information is there it's the time implantation...Time is a big barrier, But I think having someone to go too would be fantastic Or at a higher level when it's not even questioned and put in at that design stage and</p>	<p>Maybe a team or support person I could go or talk too would be fantastic. Even to help with innovative ideas implementing UDL in the classroom also measuring it. I love to know how well I'm doing regards of implementing UDL. if I was to gauge myself, now, through reflection, say, how good are you at delivering udl type material, I'd have to honestly say I don't know, and if I was to make a suggestion as to what would help would be if there was some sort of a checklist template that allowed you to say, Where does this allow for multiple representation Where does this allow for Action and expression &amp; engagement and so on. So, for me as a lecture there could be room for improvement</p>	<p>like I said, like it's already a very creative, collaborative UDL atmosphere in the faculty that I work with So, you know. I think that's fine but the only bit is the tech side (assistive technology) the UDL principle around engagement. I think there's probably a lot more that I don't know about it and again we are working with, a lot of digital natives whereas we're not, well. I'm not, you know, from that generation. so, I think having a little bit of extra of that would be wonderful</p>	<p>I think the best way they could support is by creating this community practice. I really think that will be the best way of supporting &amp; developing me within my teaching practice is developing community of practice creating a culture around UDL. I mean the end of the day, UDL needs to come from the top down and needs to be whole organization and part of the whole organization culture, not just one faculty, or one department it needs to be, and that's where for this college the challenge will be, is trying to get it as part of the organization's culture But I do believe, if they could, is it benefit the organization massively and it would be a huge attraction for learners to come to a college where UDL is fully supported and</p>	<p>Team of supports creating a community of practice Repository support for design stage - soundboard. Collaborative UDL atmosphere</p>
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		across the board or course.	with it with some sort of a tool like that? A rubric for example and someone to observe and measure so i could improve around UDL implantation. A rubric would give you a solid confidence level that you are ticking all the boxes. i would welcome that into my teaching practice as i love to know how I'm doing and to know where i need to improve with UDL .		implemented throughout the organization. I think it's a great selling point.	
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<p><b>14. Is there anything the college management could provide to enhance or engage educators in UDL practice?</b></p>	<p>Encouraging all staff to complete CPD in the area and having a committee/team on campus that provide follow up support to lecturers.</p>	<p>Offer learning about it to all staff, back it and encourage it, maybe a college policy around UDL or CPD for lecturers.</p>	<p>Encourage it, it filters from the top down and also feedback - some of the faculty heads don't issue lecturer feedback and don't disperse it. some heads of faculties consider that information to be private to them. This is not a blanket statement on all faculties, but there are some faculties who do not share information This should be all across the board that's why it should be should be universal. I ask for mine every year its is a way to improve or recognise you need to change. It's a disservice to teaching staff. I would make all that mandatory best possible service and a lecturer can't give a good service unless they get feedback from our current learners and improve for learners going into the future. This would</p>	<p>I think the college are trying really hard to get to get the faculties talking more and more to each other especially this year. I think this is very important and maybe more of a push on getting faculties talking and collaborating. In our Faculty we have pecha kucha is a storytelling format where a presenter shows 20 slides for 20 seconds of commentary each somebody gets up at lunchtime and talks about their discipline. it's really great fun and has to be really quick. It's not somebody to taking the floor for half an hour talking. They're supposed to be really quick and visual and I love that about my faculty environment, because I get to learn about all these different disciplines and how they work and maybe something like that with Griffith could be interesting. it could be just one element of udl that they've implemented in a quick informative way of</p>	<p>I think they could take on board the concept of UDL and try and see how it would benefit their organization. I firmly believe it would. It would help everybody too with just a bit of CPD training and monitoring. As I said UDL is so big every year the org could have something new to talk about so therefore, you're never going to become stale because if they take it like little blocks of Lego and say this year we're gonna deal with this Lego block this next year, this Lego block it keeps you fresh all the time. I think that's the danger with lecturers, they can become stale. As an educator something like this can take you keep you going.</p>	<p>Encourage all staff teaching practice complete CPD. Follow up support on campus for educators. CPD policy Encourage from the top down (2) disperse feedback</p>
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			maybe help lecturers realise change is needed to seek support or CPD to improve.	telling or talking about something that you're passionate about.		
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<p><b>15. In your opinion, as an educator, is there enough emphasis put on UDL in Higher Education? Please explain, in what ways</b></p>	<p>No, most lecturers will want their resources to be accessible to all in the classroom but they might not know how to go about it or might need to know the theory behind UDL so they can determine how best it can be implemented in their own teaching strategies</p>	<p>No- there's not much emphasis, again I would have attended that course myself there wasn't an emphasis on saying I needed to do it changing module assessments it never discussed this UDL idea. If you were to look at much older lecturers who are around for a long time they have no idea what UDL is in my opinion. I think it's the new generation, it's the future of education but it not everywhere and won't be everywhere for some time yet.</p>	<p>No, definitely not, but I'm only new to it. it's in its early stages in HE. Even in our college with the CPD lunchtime I would be on the view there is not much engagement from the lecturers on how to improve. The same faces that are interested show up. More emphasis is needed definitely. maybe informing lectures of student feedback as this is not consistent across the college. Some faculties operate differently, around distributing feedback and supports for UDL. Feedback helps change and improve best practice.</p>	<p>like that little story I told you about the exchange students that to me says, NO, that's there's not enough emphasis (i.e. traditional style lecturing still going on). I wouldn't know about other HE colleges but in my own I think they could always be more, there's always room for improvement. there could be some educators that haven't engaged with it, or don't know what it is, in fact there are some that don't even know about it! I do remember having the chat in a breakout room with other lecturers, and I said, have you ever heard of UDL? And they said. Oh, no, what's that? so actually even though I feel Oh, yeah, sure we all know about it. I probably could be wrong about that.</p>	<p>I suppose in my opinion i'd say NOT. I would say that is that in Ireland the awareness of UDL is really only beginning. There's been a lot of people now going through the digital badge, which is fantastic because it means that clearly means it's getting out there. When I was doing the post-grad I would have said, the movement was only beginning at that point. it is a slow step process, and therefore it will take time for it to become, embedded as a core part. I was shocked when somebody a colleague said to me, Oh, that's only a buzz word or fad, I nearly died. it was actually someone I looked up too. I was left with my mouth open. This is not another Fad, this is actually a great set of guidelines that can help improve the quality of delivery of programs and, if people</p>	<p>No (5)</p>
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<p><b>Is there anything you would like to add?</b></p>		<p>I feel UDL is common sense in this day and age. It's totally important especially moving forward in education future. Doing something is better than doing nothing small little changes can, make a huge difference for your students. It's the only way forward in HE teaching practice</p>	<p>I think the college has come a long way from a lecture support point of view over the years but more needs to be done around UDL. These days of political correctness and diversity. You could be walking into a classroom not knowing what you were walking into. . You need to get the right narrative. UDL broadens it to such an extent that it leaves everything open, and as it gives you a template and framework that you can ask the questions, or even highlights your awareness to think about your learners. I think it's one of the best discoveries I have made in when I did CPD was to discover this udl concept because it gives you mechanisms and a framework for basically being able to operate. UDL has effectively makes one more</p>			
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			<p>professional and it's more enjoyable it has me hooked and I'd be a big fan and the more you can do about it, the more enhancements and the more talk about it, more. It's ingrained in your system or embedded in your system the better. That would be my view and recommendations to anyone thinking about UDL or that doesn't know about it. Just do it... you won't look back.</p>			
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