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Bridging Cultures and Contexts: International Approaches to Inclusive Education and Universal Design for Learning

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Bridging Cultures and Contexts: International Approaches to Inclusive Education and Universal Design for Learning

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Preface

Inaugural Issue of the International Journal of Universal Design and Universal Design for Learning (IJUDUDL)

It is with great pride and deep conviction in the values of quality inclusive education that we present the inaugural issue of the *International Journal of Universal Design and Universal Design for Learning (IJUDUDL)*. As the Editor-in-Chief of this pioneering journal, I am honoured to launch this platform dedicated to furthering the scholarship and global conversation on Universal Design (UD) and Universal Design for Learning (UDL).

At a time when institutions across the world are striving to meet the demands of rapidly evolving educational, technological, and social contexts, there is an urgent need for frameworks that do not merely accommodate diversity, but proactively celebrate and design for it. UD and UDL offer such transformative frameworks, not only within the walls of our classrooms and lecture halls, but across all dimensions of society - in public policy, technology, urban spaces, and the digital sphere.

The articles featured in this inaugural issue represent a vibrant cross-section of research, reflection, and practice from around the globe. From early childhood classrooms to higher education institutions, from inclusive pedagogy and curriculum design to technological innovation and social advocacy, the contributors illuminate how UD and UDL are being applied to shape more equitable and engaging environments. These contributions are united by a shared commitment to accessibility, learner variability, social justice, and participatory design.

This first issue reflects not only a range of disciplinary perspectives but also a diversity of geographical and cultural contexts. This is intentional. IJUDUDL is founded on the principle that global inclusion requires a multiplicity of voices, particularly those working at the intersections of education, culture, and equity in underserved regions. Our journal seeks to be a truly international space, where theory and practice inform one another, and where local insights enrich universal aspirations.

I would like to extend my sincere gratitude to the editorial board, peer reviewers, and authors whose expertise and dedication have shaped this inaugural publication. Particular thanks go to the deputy editors for their vision and leadership, to the co-editors for their collaboration and guidance throughout the process, and to the associate editors for their critical role in peer reviewing and sustained support. Special thanks also go to the contributors of this issue, whose work lays the groundwork for a new era of scholarly dialogue.

As we look ahead, we aim for IJUDUDL to be more than a journal. We envision it as a collaborative and evolving community of researchers, practitioners, students, and

policymakers committed to building inclusive futures. It is our hope that this first issue will inspire new conversations, partnerships, and innovations.

On behalf of the editorial team, I welcome you to this collective journey.

Prof. Abdelaziz Bendou, President, Ibn Zohr University, Editor-in-Chief, *International Journal of Universal Design and Universal Design for Learning*

Deputy Editors' Foreword

The latest iteration of the Universal Design for Learning Framework (3.0 CAST, 2024) prioritises some notable features encouraging learners and educators to strengthen collective reflections across languages and cultures. Socio-cultural considerations have extended the relevance of the UDL Framework recognising that 'within person' learning requirements need to be cognisant that societal perceptions and associated resource availability for digital and spatial accessibility have a profound influence on social and learning environments. In turn, these factors are posited within cultural contexts that provide a steer for the diversity of ways in which communities create and enable access to learning while also informing the ways that exclusionary practices can be challenged and rectified. As David Rose, who is one of the key thought leaders in the development of UDL, has acknowledged, 'Understanding the rich variety that exists in local cultures and ecologies is a critical next step in learning what UDL needs to address, and where it needs to find solutions' (Rose, xix 2019). As the research imperative for gathering and disseminating global theory and praxis has grown, the International Journal for Universal Design and Universal Design for Learning (IJUDUDL) provides a much-needed vehicle for the advancement of these objectives.

In doing so, the Journal also brings to fruition one of the key Aims for the International Collaboratory for Leadership of Universally Designed Education (INCLUDE) which is, 'To seek out and promote opportunities for collaborative international pedagogy and research focused on the design, application and impact of Universal Design throughout all sectors of formal and informal education'. From the outset, INCLUDE has been action oriented with the purposeful intention that Collaboratory initiatives should enhance realisation of Sustainable Development Goal 4 (SDG 4), that is expressly focused on the imperative for designing and realising inclusive quality education across the learning life course. Founded in 2019 by Associate Professor Richard Jackson and Dr Seán Bracken, INCLUDE provides a dynamic community of practice for educators, learners and service providers who coalesce around a shared intention to extend and deepen the global relevance of UD and UDL. The vision and commitment of Dr. Seán Bracken have been instrumental in laying the groundwork and momentum for this journal. His global outlook helped inspire the need for a peer-reviewed open-access platform where inclusive education could be reimagined and shared across contexts.

A comprehensive strategic plan drafted at the inception of INCLUDE identified the need to provide a sustainable means for researchers who apply UD and UDL principles and practices to disseminate their research and to exchange insights gleaned from practice.

The opportunity to initiate that process came about when INCLUDE, in collaboration with the International Conference on Quality Education (ICEQ), hosted a conference in June 2024 at the University of Worcester in the UK. The conference title, 'Power of Potential: Sharing Experiences from Universal Design for Learning (UDL) Journeys', provided scope for educators and learners from across the UK, Australia, Brazil, Ireland, Indonesia, Spain, South Africa, Sweden, Morocco, Belgium, Greece, the United States of America, and India to identify areas of commonality, whilst also acknowledging and honoring attributes of distinctiveness in the global application of UD and UDL. Following the conference, participants were invited to submit papers for consideration to be published in this inaugural edition of IJUDUDL. Having issued a call for papers, marshalled admirably by Dr Elizabeth Dalton, the Deputy Editors set about putting in place robust systems and processes that are required to ensure the journal meets stringent quality control expectations for international indexation and sector recognition. To this end, the Deputy Editors have relied on sustained advice and guidance provided by the Editorial Board and the volunteers, and it is important to recognise the fundamental role these colleagues have played in supporting the iterative and collaborative development of the journal.

In a sector increasingly typified by challenges that come with prohibitive costs for publishing and accessing high quality research, IJUDUDL is distinctive in being free at the point of submission while readers from around the world can access published articles at no cost. This accomplishment comes about in no small part through the dedicated efforts of the Journal Editor, Professor Abdelaziz Bendou, who along with Professor Mustapha Aabi from Ibn Zohr University, sought and secured support from the Ministry of Higher Education in Morocco to enable journal publication on the Ministry's IMIST portal. We extend our sincere thanks to the entire IMIST team for their technical expertise, responsiveness, and commitment to supporting open-access publishing.

That this journal originates from the Global South is not incidental. It reflects a grounded commitment to inclusive, equitable, and multilingual knowledge-sharing. Ultimately, through the combined energies of what is a true Collaboratory, all stakeholders interested in the advancement of knowledge associated with inclusion and accessibility now have valuable space to enrich and sustain their insights from research.

In this first issue, the editors have made a good-faith effort using digital accessibility checking tools available through Microsoft to provide a publication that is not only accessible to those who read standard print, but also for those who use supportive digital tools to access text. Nonetheless, there is a recognition there may be some shortcomings in realising a shared aspiration towards full accessibility. As a learning community dedicated to continuously and iteratively maximising inclusivity, there is a desire to garner insights from end users' experiences with IJUDUDL accessibility. To that end, observations

regarding how aspects of journal relevance and accessibility might be further strengthened are welcomed by the Editorial Board.

It is with great joy and excitement that as Deputy Editors, we invite you to celebrate with us in the publication of this first issue of IJUDUDL. We trust that through its availability, the journal will make a valuable contribution to an ever-growing recognition that inclusive design-based thinking and action, as exemplified in both UD and UDL, have a vital role to play in advancing the life and learning opportunities for all. We hope you are inspired by the rich, diverse and varied contributions from across the globe provided in the form of empirical research, opinion pieces and insights from practice to consider submitting an article to one of IJUDUDL's future issues.

Dr Seán Bracken, Principal Lecturer University of Worcester UK, Associate Professor Curtin University, Australia.
Dr Elizabeth Dalton, Consultant Dalton Education Services International, Assistant Professor Rhode Island College (retired).
Dr. Mustapha Aabi, Professor, University of Ibn Zohr.

Rose, D (2019). Foreword for Bracken, S., & Novak, K. (Eds.). (2019). *Transforming higher education through universal design for learning: An international perspective*. London: Routledge.

A Systematic Literature Review on the Effectiveness of Universal Design for Learning in Second-level Education

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ABSTRACT

Education systems around the world are grappling with increasingly diverse student populations and a focus on the right to education for every learner. New innovative pedagogies such as Universal Design for Learning (UDL) have emerged as a response to more traditional approaches to teaching and learning. While much of the research on UDL to date has been in further and higher education, less is known about its effectiveness in second-level education.

This Systematic Literature Review provides an analysis of the effectiveness of UDL in 22 empirical studies from 1200 papers screened and interrogates the aspects of the UDL framework commonly deployed in interventions. The review indicates growth in the evidence base for UDL effectiveness in second-level education. The findings confirm positive effects for UDL interventions on learners' academic and social outcomes. The paper highlights that the aspects of UDL within the teachers' control are well addressed (Representation), whereas elements that aim to build learner autonomy and self-regulation are less evident in the interventions.

The results of this literature review provide the first systematic insight into the effectiveness of UDL in mainstream second-level education. While many positive outcomes were identified, this paper highlights the need to acknowledge existing pedagogical approaches that could support the design of UDL implementations. In particular, teaching and learning strategies such as formative assessment, culturally responsive teaching and multilingual education, and autonomy-supportive pedagogy, could usefully be integrated within a broader UDL framework.

Keywords

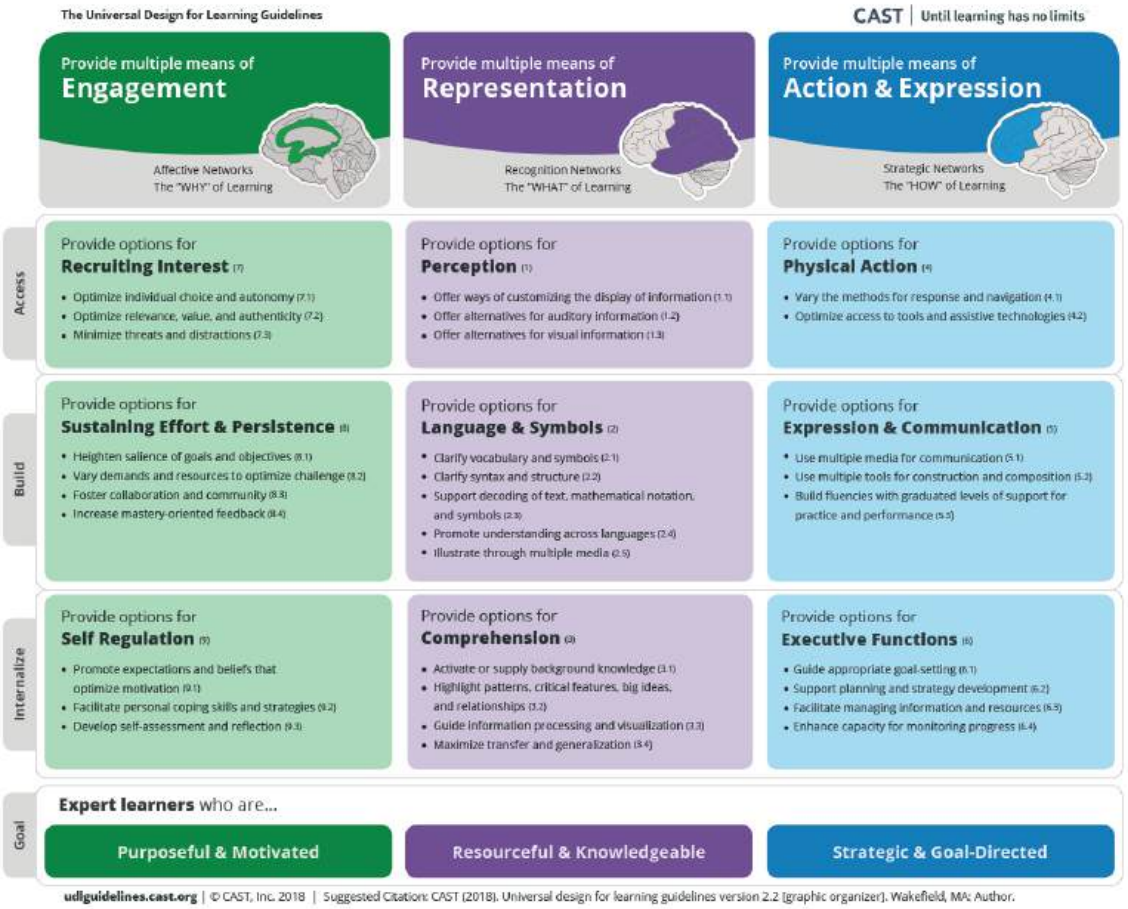
Universal Design for Learning, inclusive education, pedagogy, systematic literature review, second-level education, K-12 education

INTRODUCTION

Inclusive education has become a key priority of education and human rights policy. International organisations such as UNESCO have made it a policy priority with the Education 2030 Framework for Action (UNESCO, 2016), which seeks to provide a framework for countries wishing to implement Sustainable Development Goal 4, prioritising inclusive and equitable education for all (UNESCO, 2016). Across different national contexts, inclusive education is a significant policy issue, with many countries attempting to respond to increasingly diverse student populations with existing, historical, systems of 'special education' (Boyle & Anderson, 2020; Grynova & Kalinichenko, 2018; Schuelka, 2018). Over the last two decades, however, some countries have begun moving towards innovative pedagogies such as Universal Design for Learning (UDL), with the aim of responding to learner diversity and creating more inclusive school environments for everyone (Galkienė & Monkevičienė, 2021). Developed in the 1980s by the U.S. non-profit organisation CAST, the UDL framework seeks to move away from a 'one size fits all' curriculum approach to one where learners are provided with choice and flexibility about how they learn and how they demonstrate what they have learned (Chardin & Novak, 2021). UDL facilitates inclusive learning environments by assuming student variability and removing unnecessary barriers in the learning process from the outset.

The UDL framework is comprised of three principles (Multiple Means of Engagement, Action & Expression and Representation), nine guidelines and 30 checkpoints (detailed in Figure 1), and has its foundations in empirical research from disciplines including neuroscience, learning sciences and cognitive psychology (CAST, 2022). There is a significant body of work and discussion on UDL's capacity to respond to student diversity and create more equitable access to the curriculum for every learner (Chardin & Novak, 2021). Studies show: the potential impact of UDL in creating more inclusive settings in higher education (Fovet, 2020, 2021a); the barriers to UDL implementation in higher education (Fovet, 2021b); teacher perspectives on UDL implementation (Capp, 2020); the application of UDL for students with 'special educational needs' (Scott & Temple, 2017) or disabilities (Lowrey & Smith, 2018; Seok, DaCosta, & Hodges, 2018); and much broader literature on the potential of UDL for diverse learners (Chardin & Novak, 2021; Fovet, 2019).

***Figure 1**: Universal Design for Learning Guidelines (udlguidelines.cast.org)*



Despite this strong evidence base for the development of the framework within neuroscience, there is a lack of research highlighting the effectiveness of UDL for learners across the different education sectors (Al-Azawei, Serenelli, & Lundqvist, 2016; Ok, Rao, Bryant, & McDougall, 2017), with some researchers raising concerns that UDL is being introduced to education policy without sufficient evidence on its effectiveness (Murphy, 2021). This gap in research is particularly evident in second-level education. Given the growing emphasis on UDL in the context of inclusive education worldwide (Katz, 2013; Loreman, 2017), the aim of this paper is to examine the evidence base for UDL within the context of second-level education.

The effectiveness of UDL: what do we know?

It is important to note that several key Systematic Literature Reviews (SLRs) have already been undertaken on the effectiveness of UDL on learner outcomes across the different sectors of education. AlRawi and AlKahtani (2021), Seok et al. (2018), Capp (2017) and Mangiatordi and Serenelli (2013) have all examined the empirical evidence

of the effectiveness of UDL across educational settings. Overall, the findings of these studies suggest positive effects but emphasise the lack of empirical evidence on the effectiveness of UDL and highlight that much of the available research comes from North America. Using a meta-analysis approach of 80 articles on the evidence for the effectiveness of UDL, Mangiatordi and Serenelli (2013) found that only a minority of abstracts examined showed a positive impact of UDL, but they also note the growing information on the topic at that time. They also highlight the extent to which the UDL literature focuses on position and opinion papers and how they are predominantly focused on the United States (Mangiatordi & Serenelli, 2013). In 2017, Capp (2017) published the findings of a meta-analysis of 18 articles that examined the effectiveness of UDL using pre- and post-testing scores of students. He found that UDL is an effective teaching methodology for improving the 'learning process' for all students.

Also in 2017, Ok et al. (2017) examined the extent to which UDL instruction impacted the academic and social outcomes of students in pre-K to grade 12. They found that UDL increased engagement and access to general education for students with disabilities and improved the academic and social outcomes of all students. They do however note the efficacy of UDL studies varies considerably across the different interventions. Focusing specifically on students with intellectual disabilities, AlRawi and AlKahtani (2021) explore the educational impact of UDL, finding seven articles that indicate a positive impact on the academic, social, and behavioural outcomes of the students involved. Also using a disability focus, Seok et al. (2018) examined the degree to which UDL methods are effective for students with and without disabilities. Their findings show that 15 of the 17 studies included in the review reported 'effective outcomes'.

Methodology

This paper builds on the meta-analyses and SLRs discussed above by updating the findings with the most recent evidence-based research and providing a finer-grained analysis of UDL implementations. In line with the prior work, this study identifies gaps in the extant literature with a view to influencing research going forward. This study takes a Systematic Literature Review as our methodological approach as it systematically identifies, analyses and critically synthesises existing publications on a chosen topic to provide an insight into the 'body of evidence' available in order to influence policy and practice (Newman & Gough, 2020; Zawacki-Richter, Kerres, Bedenlier, Bond, & Buntins, 2019). The study adopted a Cochrane systematic review approach (Higgins & Green, 2011), using the EPPI-Reviewer tool (eppi.ioe.ac.uk) and taking the following steps: 1) specify review research questions; 2) define inclusion/exclusion criteria; 3) design and apply search strategy; 4) screen articles for inclusion; 5) extract study data and conduct quality appraisal; 6) complete qualitative synthesis to address the study research questions.

Research Questions

This systematic review is situated within a broader Erasmus+ research study on UDL in second-level education, involving a transnational European consortium. For this reason, the primary focus for the systematic review is on education at second level including young people from approximately age 11 to the end of second-level schooling (age 18 or 19). The review seeks to explore the evidence base for UDL in all school settings at this age range and to identify aspects of UDL that are well established, as well as gaps in implementation and research within the field (Polanin, Maynard, & Dell, 2017). The systematic review therefore will address the following research questions:

(1) What is the evidence that UDL implementations positively influence student outcomes in second level education?
(2) What aspects of UDL are implemented in studies at second level?

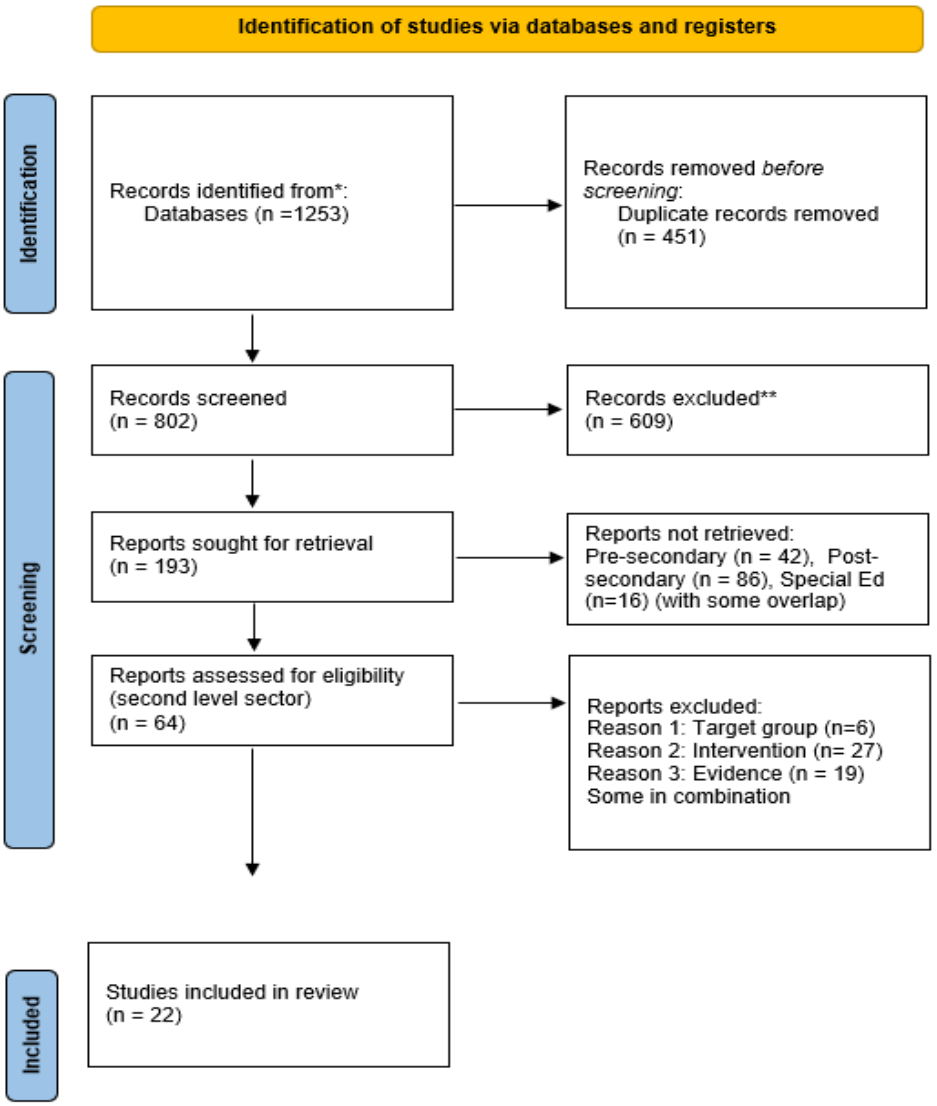
Inclusion Criteria

Prior to beginning article search and screening, the Inclusion/Exclusion criteria **(Table 1)** were agreed within the research team. Given the relatively recent emergence of UDL in education, no time limit on publications was included. Inclusion criteria 4 and 5 were only implemented at full text screening. The details of the search and screening process are set out in the PRISMA diagram **(Figure 2)**.

TABLE 1: *Inclusion/exclusion criteria*

Inclusion	Exclusion
1. Published in English	Published in languages other than English
2. Peer-reviewed publications	Grey literature or non-peer-reviewed publications
3. Includes an empirical study of UDL	Descriptive, theoretical or review papers that do not include an empirical study
4. Focuses on learners in second level education (approximately aged 11-19)	Focuses on pre-K, elementary/primary learners, or learners in further or higher education
5. Includes a focus on student outcomes (including academic, social, affective, or other outcomes)	No focus on student outcomes of any kind

Figure 2: *PRISMA Flow Chart of Systematic Review process*



Search Strategy

The initial search strategy was designed to be as open and inclusive as possible. The search string therefore included only the terms "Universal Design for Learning" or "UDL" in the title or abstract, with the search conducted across five databases: ERIC, Applied Social Sciences Index & Abstracts (ASSIA) ProQuest, JSTOR and PsycInfo. The results of the databases searches were validated with reference to previous UDL review papers. The refined results of the search led to identification of 823 articles, which were imported into EndNote and EPPI Reviewer for screening.

Screening

The article screening process proceeded in two phases with the author team. Initial title and abstract screening was conducted by five of the author team beginning with a pair-wise cross-validation process of 10% of the articles to ensure consistency. During this phase, all included articles were also coded for education level (pre-K, primary, secondary, further/higher education). In total 193 articles met the inclusion criteria, of which 64 focused on secondary education. Eight members of the author team conducted the full-text screening of the sixty-four second-level articles resulting in 22 articles for inclusion in the review.

Data Extraction, Appraisal and Analysis

In line with UDL reporting guidelines (Rao et al., 2018), all key methodological, participant and outcome data were extracted from the review articles. As regards the UDL principles and checkpoints enacted in the study interventions, a small number of papers reported this in a very precise and fine-grained manner. However, for the most part, this was deduced from a focused content analysis of each study's description of the intervention materials and process. Quality Appraisal tools available within EPPI Reviewer were used to explore the quality of evidence in the review articles. However, given the small number of articles identified in the screening process, no articles were excluded on the basis of this appraisal. Taking the Weight of Evidence (Gough, 2007) approach, the final synthesis addresses the extent to which the review articles contribute evidence to address the study research questions.

Findings

This section provides an overview of the characteristics of the 22 papers followed by a synthesis of the findings under the study research questions.

Research methods

The reviewed articles used a range of methodological approaches to examine the effectiveness of UDL at second level education with quantitative (10), qualitative (8) and

mixed methods (7) all identified. In relation to quantitative approaches, mainly non-randomised intervention studies are used (Daley, Xu, Proctor, Rappolt-Schlichtmann, & Goldowsky, 2020; King-Sears & Johnson, 2020; King-Sears et al., 2015; Scott et al., 2011). There are also two randomized pre/post-test designs (Kennedy, Thomas, Meyer, Alves, & Lloyd, 2014; McMahon, Wright, Cihak, Moore, & Lamb, 2016), the latter using generalised Latin squares. Two pre/post-test intervention designs without control groups were also noted (Marino, 2009; Marino, Black, Hayes, & Beecher, 2010). A number of mixed methods studies provided a rich mix of a quasi-experimental study with a qualitative perspective drawn from interviews and focus groups with teachers or students as well as other artefacts or observations of learning (Hitchcock, Rao, Chang, & Yuen, 2016; Katz, 2013, 2015; Marino et al., 2014; Smith, Lowrey, Rowland, & Frey, 2020). Ender et al.'s (2007) mixed methods study used a variety of data collected at project, school and classroom level including a range of outcome reports and artefacts. The most commonly used qualitative methodological approach was case study (Dymond et al., 2006; Robinson, 2017; Staats & Laster, 2018). Basham, Meyer, and Perry (2010) took a Design-Based Research approach in which qualitative information was collected through observations, video recordings, diaries and interviews and Katz and Sokal (2016) report on a qualitative aspect of their broader mixed-methods study (Katz, 2013, 2015).

Scale and Duration

There was substantial diversity in scale and scope between the various studies, with numbers of participants ranging from n=5 to n=1153 (Table 2). Unsurprisingly, studies that involved more than one school/setting in the study tended to have higher numbers of participants. Similarly, the duration of the interventions varied widely, ranging from one 90-minute lesson to one year or more. The majority of studies however (13/22), are of significant scale in both number of participants and duration (Table 2), which strongly suggests that the evidence base for effective use of UDL at second level is substantial.

***TABLE 2**: SLR Study Scale and Duration*

	DURATION				
SCALE	Total	Very short (1 lesson)	Short (under 4 weeks)	Medium (4 weeks/1 unit or over)	Long (12 weeks or over)
	22	3	4	7	8
Very small (n<15)	2		1		1
Small (16<n<35)	2		2		

Medium (35<n<100)	3	1	1		1
Large (101<n<500)	8	1		2	5
Very large (n>500)	7	1		5	1

Study Settings, Participants and Curriculum Areas

All articles included in this review were from North America, with 19 from the United States and 3 from Canada. Thirteen of the studies involved more than one school. Two studies focused specifically on special education or resource classrooms and another two were in out-of-school settings. In many of the studies, the learners were classified according to gender, ethnicity, socio-economic status (using free/reduced price lunch as a proxy), and/or learning (dis)ability. Fifteen of the studies also noted teacher participants. Diverse curriculum areas were addressed in the studies, with nine mentioning STEM subjects (Mathematics, Astrophysics, Chemistry, and Biology). Four studies addressed History and Social Sciences and three explore literacy skills such as reading and writing. In the rest of the studies no specific curriculum area was mentioned. All of the studies are summarised in Appendix 1.

Evidence Base for UDL

RQ1: *What is the Weight of Evidence (Gough, 2007) that UDL implementations positively influence student outcomes in second level education?*

Although the 22 articles share a common objective of examining a UDL intervention in second-level education, there was much variation in the intended outcomes of the research. The majority of the studies (n=13) explore students' academic outcomes, four in the area of language and literacy (Daley et al., 2020; Hitchcock et al., 2016; Kennedy et al., 2014; Smith et al., 2020) and five in the area of STEM (King-Sears & Johnson, 2020; King-Sears et al., 2015; Marino, 2009; Marino et al., 2010; Marino et al., 2014). Three articles report on students' social or affective outcomes (Abell, Jung, & Taylor, 2011; Dymond et al., 2006; Kortering, McClannon, & Braziel, 2008). One is unspecific in what kinds of outcomes are addressed (Robinson, 2017). The remaining five address both academic and social or affective outcomes. These include the three studies on the Three Block Model as well as the studies by Scott et al. (2011) as well as Staats and Laster (2018). The studies that include a pre/post-test design use specific outcome measure to determine student academic or other outcomes, in some cases with an additional qualitative perspective from other data sources. Several papers report student outcomes

as reported by either the teacher or the student, rather than based on a specific outcome measure **(Table 3)**.

***TABLE 3**: Summary of articles in SLR*

Author	Scale	Disability focus	Method	Evidence	Student outcome
Katz (2013)	V large	Included	Mixed	Positive	Academic and social outcomes
Katz (2015)	V large	No	Mixed	Positive	Academic and social outcomes
Katz and Sokal (2016)	Large	Included	Qual	Positive	Academic and social outcomes
Scott et al (2011)	V small	Yes	Quant	Positive	Academic and social outcomes
Staats and Laster (2018)	V large	No	Qual	Positive	Academic and social outcomes
Basham et al (2010)	Small	Included	Qual	Positive	Academic outcome
Daley et al (2016)	Large	Included	Quant	Positive	Academic outcome
McMahon et al (2016)	Medium	Included	Quant	Positive	Academic outcomes
Daley et al (2020)	Large	Yes	Quant	None	Academic outcomes
Hitchcock et al (2016)	Medium	Included	Mixed	Positive	Academic outcomes
Kennedy et al (2014)	Large	Yes	Quant	Positive	Academic outcomes
Smith et al (2020)	V large	Yes	Mixed	Positive	Academic outcomes
Ender et al (2007)	Large	Included	Mixed	Positive	Academic outcomes
King-Sears et al (2015)	Medium	Included	Quant	Mixed	Academic outcomes
King-Sears and Johnson (2020)	Small	Included	Quant	Positive	Academic outcomes
Marino (2009)	V large	Yes	Quant	Mixed	Academic outcomes
Marino et al (2010)	V large	Yes	Quant	Mixed	Academic outcomes
Marino et al (2014)	Large	Yes	Mixed	Mixed	Academic outcomes
Smith et al (2014)	NA	NA	Qual	None	Unspecified
Abell et al (2011)	V large	No	Quant	Positive	Social outcome

Dymond et al (2006)	Large	Included	Qual	Positive	Social outcome
Kortering et al (2008)	Large	Yes	Quant	Positive	Social outcome
Robinson (2017)	V small	Yes	Qual	Positive	Unspecified

Given the variety within the literature, this analysis focused broadly on the extent to which the papers provide an evidence base that UDL implementations are effective at second level, regardless of study objectives or outcomes under examination. The findings show that of the 22 articles selected for inclusion in the SLR, 16 found positive, or somewhat positive, effects of UDL on learners' academic or social outcomes, four articles reported mixed findings, and two showed neutral or no effects. While learners with disabilities are the focus of some studies, the majority were full class interventions, and the results demonstrate the potential usefulness of UDL for a wide range of students.

The articles included in the SLR include several large studies that provide solid evidence for the effectiveness of UDL on student social and/or academic outcomes. Of particular note, are a series of substantive studies by Katz (2013, 2015), Katz and Sokal (2016) as well as King-Sears & Johnson (2020), King-Sears et al. (2015), Marino, (2009), Marino et al. (2010), Marino et al. (2014) and Hitchcock (2016), which examined various aspects of student learning with intervention and control groups, mixed methodologies and pre/post-test analysis. These studies report results that highlight positive findings overall on outcomes that include test scores, reading comprehension, social interactions, and self-direction. These positive results appear consistent when comparing the effectiveness of the UDL interventions for students with and without disabilities.

Not surprisingly, some of the literature includes a focus on the use of digital technologies with, or as a part of, the UDL interventions (see Bray et al., 2024). Fourteen of the studies included in this review made specific reference to technology, with eight exploring bespoke technologies designed according to UDL principles, three making use of existing digital tools to facilitate a UDL approach, and three broadly referencing how technology can be used to support UDL.

In summary, the systematic review found that there is solid evidence for effectiveness of UDL implementation on student outcomes, including academic measures of reading, writing, STEM, and social outcomes. Across the range of outcomes explored, positive outcomes have been demonstrated for students with disabilities as well as for the student body as a whole. Given that Engagement is one of the three core principles of UDL, it is surprising that student engagement as an outcome is only dealt with in one

study (Kortering et al., 2008). However, although the articles provide evidence across a broad range of curriculum areas and student outcomes, all the studies in this review took place in North America; the extrapolation of this evidence base to other cultural contexts will require careful consideration. In addition, while some of the studies are large-scale, none of them are at a national level or provide longitudinal data.

UDL Aspects Implemented

RQ 3: *What aspects of UDL are implemented in studies at second level?*

Given the scope of UDL across teaching and learning, it is difficult to address all aspects of the framework within a single empirical study. This SLR set out to determine the distribution of empirical research across UDL principles, guidelines, and checkpoints (see **Figure 1**). **Table 4** maps the review studies to the UDL principles implemented. Three studies will not be discussed here as they are presented as generic UDL implementations without referencing specific UDL principles (Abell, Jung, & Taylor, 2011; Ender et al., 2007; Kortering et al., 2008). Five articles cover comprehensive implementations of UDL, including three articles exploring two distinct studies of the 3-Block Model (Katz, 2013, 2015; Katz & Sokal, 2016), the TeenACE intervention (Hitchcock et al., 2016) and Robinson's (2017) library case-study.

TABLE 4*: UDL Principles and Guidelines in Focus in Articles*

	Engagement (n=13)	**Representation (n=14)**	**Action and Expression (n=11)**
Access (14)	Recruiting Interest (n=13) Daley et al. (2020) Dymond et al. (2006) Kennedy et al. (2014) King-Sears et al. (2015) King-Sears and Johnson (2020) Marino (2009) Marino et al. (2010) Marino et al. (2014) Staats and Laster (2018)	Perception (n=14) Basham et al. (2010) Dymond et al. (2006) McMahon et al. (2016) Scott et al. (2011) Staats and Laster (2018)	Physical Action (n=2) McMahon et al. (2016)

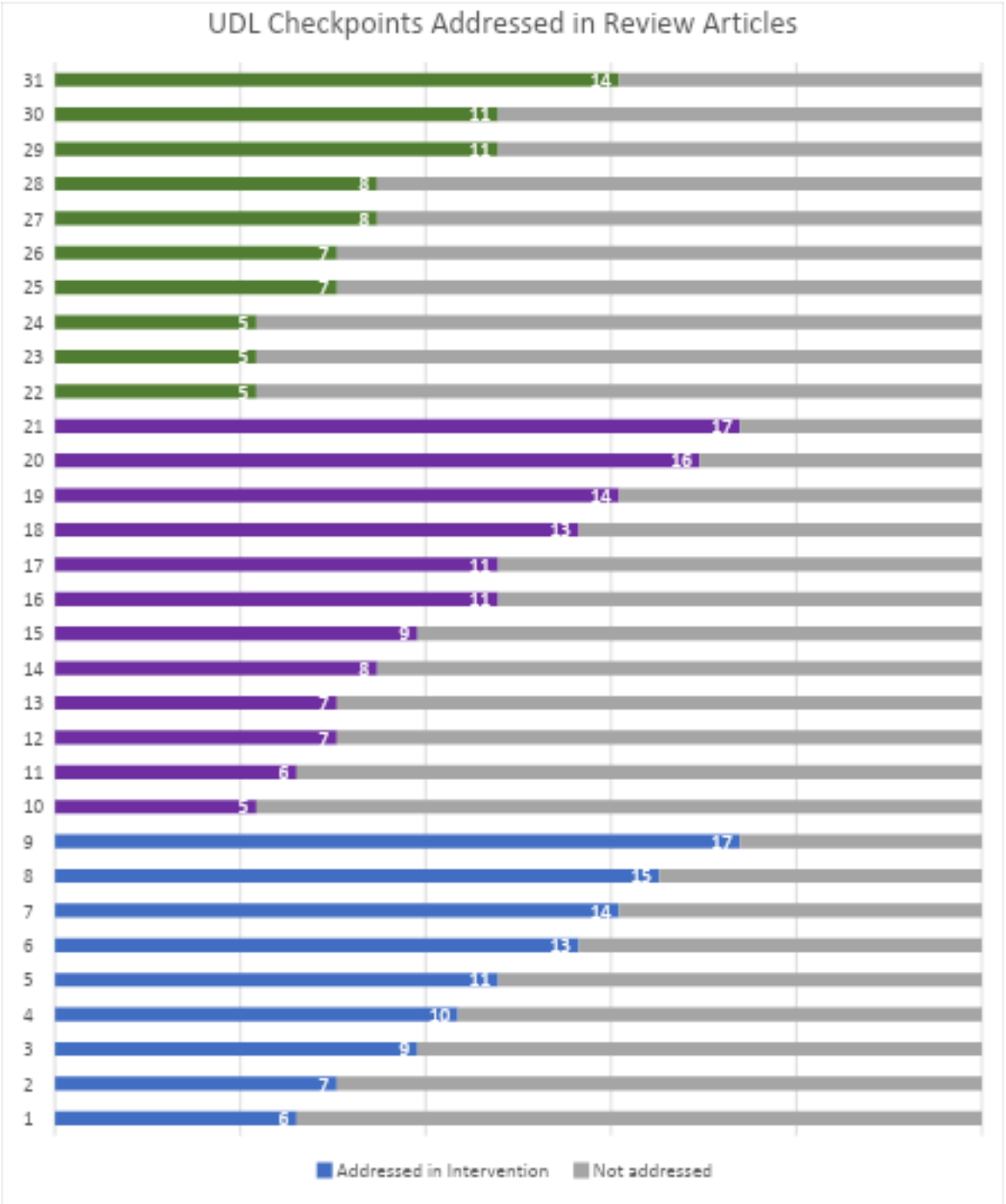
Build (11)	Sustaining Effort and Persistence (n=8) Daley et al. (2020) Marino et al. (2010) Marino et al. (2014) Staats and Laster (2018)	Language and Symbols (n=9)	Expression and Communication (n=11) Basham et al. (2010) Daley, Hillaire, and Sutherland (2016) Daley et al. (2020) King-Sears et al. (2015) King-Sears and Johnson (2020) Marino (2009) Marino et al. (2010) Marino et al. (2014) Smith et al. (2020) Staats and Laster (2018)
Internalise (12)	Self-Regulation (n=4)	Comprehension (12) Basham et al. (2010) Dymond et al. (2006) Staats and Laster (2018)	Executive Functions (n=11) Basham et al. (2010) Daley et al. (2016) Daley et al. (2020) King-Sears et al. (2015) King-Sears and Johnson (2020) Marino (2009) Marino et al. (2010) Marino et al. (2014) Smith et al. (2020) Staats and Laster (2018)
Access, Build & Internalise	Engagement overall (4) Basham et al. (2010) Daley et al. (2016) Dymond et al. (2006) Scott et al. (2011)	Representation Overall (9) Daley et al. (2016) Daley et al. (2020) Kennedy et al. (2014) King-Sears et al. (2015) King-Sears and Johnson (2020) Marino (2009)	Action and Expression overall (1) Scott et al. (2011) - in Intervention II

		Marino et al. (2010) Marino et al. (2014) Smith et al. (2020)	
ALL (5)	Hitchcock et al. (2016) (Katz, 2013, 2015); Katz and Sokal (2016): the 3-Block Model Robinson (2017)		
Not specified (3)	Abell et al. (2011): classrooms consistent with UDL, not intentional UDL design Ender et al. (2007): school level change across State not specified Kortering et al. (2008)		

Of the remaining fourteen studies, which will be the focus of this section, most studies address explicitly or implicitly between two and seven UDL principles. All fourteen articles address Multiple Means of Representation principle at a minimum. Specifically, the Perception guideline is addressed to some degree in all of the articles. The Comprehension guideline is also well addressed (n=12 articles). As regards Multiple Means of Engagement, almost all (n=13) studies address this domain explicitly, all of which focus (at least) on Recruiting Interest, sometimes relying on the novelty effect of technology to achieve this. Fewer studies (n=8) maintain an explicit focus on Sustaining Effort & Persistence, often relying on collaborative activity (checkpoint 8.3) to achieve this goal. Only four articles address Self-Regulation, and all of these deploy explicit scaffolded strategies to address Executive Function and Self-Regulation simultaneously. All of the eleven papers with a focus on Action & Expression explicitly addressed the guidelines of Expression & Communication and Executive Functions often through scaffolded expression and strategy support. Only two articles focus on providing options for Physical Action, with McMahon et al. (2016) focusing exclusively on this guideline in conjunction with offering multiple options for Perception.

An analysis of the UDL checkpoints addressed in the interventions provides a more fine-grained account of the aspects of UDL that are most frequently deployed in UDL implementations at second level, see **Table 5**.

TABLE 5: *Summary of UDL Checkpoints in Focus in Articles*



This highlights that UDL implementations focus predominantly on offering choice (checkpoint 7.1), particularly through alternative audio and visual representations of content (checkpoints 1.2 and 1.3) as well as introducing strategies of different kinds to support learning (checkpoint 6.2). The organisation of content in a structured way to support comprehension is also relatively commonly addressed, with graphic organisers

as the core tool to highlight patterns (checkpoint 3.2) and guide information processing (checkpoint 3.3). Integrating new learning is less frequently addressed whether through accessing prior knowledge (checkpoint 3.1) or by relating to other contexts (checkpoint 3.4). In some papers, Problem-Based Learning is deployed to achieve this as well as heightening the relevance of content for learners. Within the principle of Representation, there is a clear gap in the literature in relation to Language & Symbols, in particular when it comes to supporting multilingual learners. As regards Action & Expression, there are few studies that explicitly include options for Physical Action. This may be due to the characteristics of the student cohorts that may or may not need alternatives here, or it could relate to the availability of resources within the school settings. Finally, there is a clear gap across the UDL checkpoints that relate to supporting affective and cognitive dimensions of self-directed learners (checkpoints 8.4, 9.1, 9.2, 9.3, 6.1, 6.4). The overall profile of UDL implementations is that for the most part those aspects that are within teachers' control are quite well addressed while those that relate to building student capacity to integrate and direct their own learning are less so.

Discussion

This systematic review has expanded on previous reviews, to provide an up-to-date and fine-grained analysis of empirical research on UDL at second level. The findings of the SLR indicate the emergence of a strong evidence base for the effectiveness of UDL, in North America at least, at this level of education, with a number of large-scale and rigorous studies using a range of methodological approaches. In particular, the large-scale, mixed-methods studies provide an in-depth view of student outcomes. The majority of the studies focus on academic outcomes alone, including standardised test scores. Measures of student engagement, well-being, self-efficacy, or self-concept measures have not been widely used in the field to date. The holistic nature of UDL however, lends itself to holistic outcome measures. Furthermore, the voice of the learners is quite limited in existing research and would greatly enrich the evidence base in this very learner-focused field.

As it stands, different studies are measuring different outcomes, and there is no broad-based indicator of outcomes that allows for comparison across studies, comparable to Booth and Ainscow's (2002) Index for Inclusion. Such an indicator might also be useful in considering fidelity of UDL implementations, which was dealt with in some papers using a range of instruments. An instrument comparable to the UDL Scan Tool (Smith & Harvey, 2014), which is used to understand how well technology aligns with the framework, could be helpful to examine UDL in educational settings.

The fine-grained analysis of existing studies at the level of individual UDL checkpoints, identifies a leaning towards options for Representation and, to a somewhat lesser extent, options for Action & Expression. It highlights strategies or pedagogical approaches that have been used successfully within the evidence base. It also identifies

significant gaps in UDL implementations. We have found that those aspects that are within the control of the teacher have been well addressed in the articles included. However, when it comes to building capacity in the learner, these aspects are less thoroughly implemented. This discussion highlights some particular areas that require consideration within the field.

The identified gap in implementation in relation to the Language & Symbols guideline, particularly the limited provision of support for multilingual learners, is highly problematic. Literacy has a central position within education systems globally, as evidenced by league tables based on national and transnational standardised literacy testing (PISA, PIACC, etc.). In particular literacy plays a key role in high-stakes assessment (Lobascher, 2011). Therefore, it is crucial that UDL implementations offer supports for accessing and producing written texts, as evidenced in the four articles for which literacy outcomes are the measure of success. The implementations certainly provide alternatives to traditional text-based media (e.g., through the use of audio or visuals) or conversion options for text into other media (e.g., Text-to-Speech software) but they are less clear on the supports deployed to access and produce written text directly, especially for multilingual learners. Language technologies have evolved to the point where high-quality, automatic translation, transcription and other tools are readily available, offering learners mechanisms to engage with texts in a range of languages. Indeed, it is possible that the papers do not mention small but crucial tools that may be in use in implementations, such as glossaries, dictionaries, automatic translation, or other easily accessible tools.

Furthermore, there is little discussion of harnessing, valuing or even just acknowledging learners' multilingual repertoires in accessing Multiple Means of Representation or Action & Expression, beyond the language of instruction (e.g., producing dual or home language materials, accessing texts or other materials in learners' home or heritage languages). Given that multilinguals are in the majority globally (Verplaetse & Schmitt, 2010), UDL implementations could usefully engage with the concept and practice of Translanguaging (García & Li, 2014) in order to address this gap.

As noted above, the UDL checkpoints at the intersection of the Self-Regulation and Executive Functions principles are comparatively under-exploited or under-reported in this evidence base. This area links to the domain of Formative Assessment, incorporating the affective and cognitive dimensions of 1) Assessment For Learning, where teachers gather evidence of student learning to direct teaching and learning and to provide feedback, and 2) Assessment As Learning where learners use evidence of progress and feedback to identify the goals and next steps for their own learning (T&L National Forum, 2017). This domain encompasses checkpoints relating to feedback (checkpoint 8.4), self-assessment and reflection (checkpoints 9.3, 6.4) and setting and using learning goals (checkpoints 6.1, 8.1, 9.1). The papers that did tackle these areas

used rubrics or checklists (Dymond et al., 2006), self-check opportunities (Daley et al., 2020; Marino et al., 2014), Self-Regulation Strategy Development (Hitchcock et al., 2016), or self-determined learning model of instruction (Scott et al., 2011). There is extensive literature and clear pedagogical approaches in Assessment For/As Learning and student self-regulation at second level that could be routinely deployed to address these UDL aspects.

Finally, given that UDL often involves the introduction of alternatives, choice and multiple media into a learning context, few studies explicitly address checkpoint 7.3: minimise threats and distractions. Only Kennedy et al. (2014), who proposed a Multimedia Design Framework to address cognitive load in the design of multimedia resources, and Robinson (2017) explicitly tackle this aspect. The other studies do not clearly address how they scaffold and support students to manage the potential distraction of multiple choices, nor do they address whether the kinds of choices provided actually enhance learner autonomy. Indeed, in the literature on autonomy supportive pedagogy (Reeve et al., 2003) it is the provision of action choices rather than option choices that enhance perceptions of autonomy and intrinsic motivation. Within the UDL literature, further critique is required to explore the impact of multiplicity of options, but also the optimum type and scope of options available to learners. As Reeve et al. (2003, p. 389) state, "in practice, the provision for choice is best considered as one contributing element within a larger autonomy-supportive … classroom climate". In particular if not enough emphasis is laid upon articulating and developing learning goals (checkpoints 6.1, 8.1, 9.1) and providing a rationale for choices available, then the provision of choice may not in fact provide an autonomy-supportive environment (Su & Reeve, 2011).

Conclusions

In contrast with previous reviews of UDL (Rao et al., 2014; AlAzawei et al., 2016), this paper notes a growing body of robust evidence for UDL within second level, but they could benefit from greater geographic diversity, more holistic outcome measures and greater scope in terms of time and scale. Perhaps most importantly, there is a need for measurement tools for UDL that are true to the holistic nature of the field but can allow for meaningful comparison across and between studies.

This review also highlights the areas of practice within empirical research, that require further development. Three key areas were identified, including:

(1) Supporting access and production of traditional written text-based media, especially for multilingual learners;
(2) Developing learner autonomy and self-regulation;

(3) Managing choice.

Although these have been identified as gaps through our analysis, this paper argues that the field might benefit from aligning well-understood pedagogical approaches to particular aspects of the UDL framework. A small number of studies in the review corpus demonstrated how it is possible to adapt Evidence-Based Methods (EBMs) from other fields within a UDL framework. To address the identified gaps in UDL implementations, EBMs from formative assessment, culturally-responsive teaching and multilingual education, and autonomy-supportive pedagogy, could usefully be integrated within a broader UDL framework.

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Declaration of Interest

The authors report there are no competing interests to declare

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Appendix 1. Review Article Summary Table

	Year	Authors	Setting	Sample	Participant Information (students)	Study Duration	Curriculum Area	Research Methodology	Research Instruments
1.	2011	Abell et al. (2011)	USA	867	Age range: 8 - 18 No. with low SES: not specified. *No. with AEN*: not specified. *Gender*: not specified *Ethnicity*: not specified	N/A	Diverse	Survey	Revised Individualised Classroom Environment Questionnaire (ICEQ-R)
2.	2010	Basham et al. (2010)	USA	35	*Age range*: Upper high school No. with low SES: not specified. No. with AEN: 1 *Gender*: 13 male, 22 female *Ethnicity*: majority African American	4-5 hours each cycle	Social Sciences	Design-Based Research (3 cycles)	All Cycles: Participant observations, video-recorded observations, field notes, student-generated artifacts. Cycles 2 & 3: student surveys and interviews
3.	2016	Daley et al. (2016)	USA	126	*Age range*: Grade 6 *No. with low SES*: School B: 63% No. with AEN: 12 *Gender*: 52 male, 74 female *Ethnicity*: *School A*: 82% white, 15% Asian American. *School B*: 98% African American	3-5 lessons	Science	Design-Based Research (1 cycle)	Electronic event usage log Written student inquiry questionnaires
4.	2020	Daley et al. (2020)	USA	315	*Age range*: Grades 6 - 8 No. with low SES: 78% *No. with AEN*: All, with 56% SEN *Gender*: 63% male, 37% female *Ethnicity*: Hispanic or Latino: 36%, White: 31%, Black or African	1 year (1 hour p week)	Literacy: Reading	Quantitative Quasi-experimental, pre-post-test design	Reading Comprehension pre/post tests Digital usage log in UDIO tool

					American: 26%, Asian or Pacific Islander: 2%, multi-racial: 4%				
5.	2006	Dymond et al. (2006)	USA	0	*Age range*: 9th Grade (mostly) No. with low SES: not specified. *No. with AEN*: Possible total of 33 (some may have attended more than one section or semester) *Gender*: not specified *Ethnicity*: White: 67.8%, Black: 24.2%, Asian/Pacific islander: 5.6%, Hispanic: 1.2%, Native American: 0.2%	1 year	Science	Participatory Action Research Case Study	Individual teacher pre and post intervention interviews; document analysis; meeting minutes and lesson plans; Post intervention teacher focus Group
6.	2007	Ender et al. (2007)	USA	0	*Age range*: not specified. No. with low SES: not specified. *No. with AEN*: not specified. *Gender*: not specified *Ethnicity*: not specified	3 years	Diverse	Not specified	Different evaluation instruments used in different schools. School level: Staff and Student survey and interviews; classroom observations; reports; school, teacher, and student products. Project Level: (a) Individualized Classroom Environment Questionnaire (ICEQ); (b) CATS scores and NCLB Adequate Yearly Progress (AYP) reports; and (c) monthly and year-end reports
7.	2016	Hitchcock et al.	USA	46	*Age range*: Grades 5 - 8	12 weeks	Literacy: Writing	Mixed methods:	Quant: pre/post writing tests:

		(2016)			No. with low SES: not specified. *No. with AEN*: Classroom A: 11%, Classroom B: 5% *Gender*: not specified *Ethnicity*: Hawaiian/part-Hawaiian: 70 - 85%			within person pre/post intervention comparison and naturalistic case study	Woodcock Johnson III, CBM Rubric Teacher and Student evaluations Qual: teacher/student surveys and focus groups
8.	2013	Katz (2013)	Canada	631	*Age range*: Grades 1 - 12 No. with low SES: not specified. *No. with AEN*: Students with severe learning disabilities, or very low proficiency in English were excluded. *Gender*: 51.5% male, 48.5% female *Ethnicity*: 87.5% born in Canada, 12.5% immigrated to Canada	¿?	Diverse	Quasi-experimental control Group pre/post-test design	observations, surveys, and Scales: Global Portrait of social and Moral Health for youth (GPDMHY) Acceptance of outgroups scale (CDP) Self-description Questionnaire (self-concept)
9.	2015	Katz (2015)	Canada	58 (teachers)	*Age range*: Grades 1 - 12 No. with low SES: not specified. *No. with AEN*: not specified. *Gender*: not specified *Ethnicity*: not specified	¿?	Diverse	Quasi-experimental control Group pre/post-test design	Interviews and Surveys (pre/mid/post)
10.	2016	Katz and Sokal (2016)	Canada	101	Age range: K-12 No. with low SES: not specified. No. with AEN: 11 *Gender*: 52 male, 49 female *Ethnicity*: 19 Aboriginal (First Nations, Metis, or Inuit)	¿?	Diverse	Qualitative analysis pre-post intervention.	Qualitative interviews

11.	2014	Kennedy et al. (2014)	USA	141	*Age range*: Grade 10 No. with low SES: 83% No. with AEN: 32 *Gender*: 76% male, 24% female *Ethnicity*: 63.3% African American, 26.7% Hispanic, 10% Caucasian	8 weeks	History	Quasi-experimental study	Pre-test and post test scores curriculum-based measures-probes of terms/historical figures and definitions
12.	2015	King-Sears et al. (2015)	USA	56	*Age range*: Grades 10 - 12 No. with low SES: 9 No. with AEN: 19 *Gender*: 25 male, 35 female *Ethnicity*: 27 white, 7 African American, 11 Hispanic, 11 Asian/Pacific Islander, 4 Multiracial	1 class (with 4-week delayed post-test)	Chemistry	Randomised Control Trial	Pre/Post and Delayed Post-test using Mole conversion tests Social Validity Questionnaire
13.	2020	King-Sears and Johnson (2020)	USA	44	*Age range*: High school No. with low SES: 21 *No. with AEN*: 16 (Study 1: 10; Study 2: 6) *Gender*: 24 male, 18 female *Ethnicity*: 5 White, 13 African American, 22 Hispanic, 2 Multiracial	2 sessions	Chemistry	Two quasi-experimental studies	Pre- and post-tests and social validity questionnaire
14.	2008	Korteringet al. (2008)	USA	290	*Age range*: High school No. with low SES: not specified. No. with AEN: 72 *Gender*: not specified *Ethnicity*: not	1 90-minute session	Maths and Biology	Survey	Student Self-Reported Engagement Scale Questionnaire plus some open questions

					specified				
15.	2009	Marino (2009)	USA	1153	*Age range*: Middle school: grades 6 - 8 No. with low SES: not specified. *No. with AEN*: 126 with severe reading difficulties, 205 poor readers *Gender*: 50% male, 50% female *Ethnicity*: 91% White, 5% Asian, 3% Hispanic, 1% African American	4 weeks	Science - astrophysics	Pre/Post-test Intervention Study (no control group)	1. Pre/post-test of scientific concepts, processes, and vocabulary (paper and pencil 25-item multiple-choice) 2. Six open-ended paper and pencil solutions forms 3. Degrees of Reading Power (DRP). 4. Tool Use Log. 5. Observations
16.	2010	Marino et al. (2010)	USA	1153	*Age range*: 10 - 14 No. with low SES: not specified. *No. with AEN*: ~ 11.5% (based on average across participants from the 3 schools) *Gender*: 50% male, 50% female *Ethnicity*: 91% White, 5% Asian, 3% Hispanic, 1% African American	4 weeks	Science - astrophysics	Pre/Post-test Intervention Study (no control group)	1. Pre/post-test of scientific concepts, processes, and vocabulary (paper and pencil 25-item multiple-choice) 2. Six open-ended paper and pencil solutions forms 3. Degrees of Reading Power (DRP). 4. Tool Use Log. 5. Observations
17.	2014	Marino et al. (2014)	USA	341	*Age range*: 10 - 14 No. with low SES: 56% No. with AEN: 57 *Gender*: 51% male, 49% female *Ethnicity*: 87% White	1 year	Science - pathogens	Mixed-methods design. ABAB intervention model	Paper-and-pencil pre-/posttest, data collected through video game play, student post-intervention focus group interviews
18.	2016	McMahon et al. (2016)	USA	47	*Age range*: Grade 6 No. with low SES: ~97.4% No. with AEN: 47 *Gender*: 57.4% male, 42.6% female		Science (assessment context)	Generalised Latin squares comparative study - differences within and between groups	Pre/Post control/experimental Test scores

					Ethnicity: 76.6% African American, 17% Caucasian, 4.3% Hispanic, 2.1% Native American				
19.	2017	Robinson (2017)	USA	5	*Age range*: Middle school No. with low SES: not specified. No. with AEN: 5 *Gender*: not specified *Ethnicity*: not specified	3 months	History (in library setting)	Case study	No explicit data collection
20.	2011	Scott et al. (2011)	USA	6	*Age range*: 15 - 19 No. with low SES: not specified. No. with AEN: 6 *Gender*: 4 male, 2 female *Ethnicity*: 2 Caucasian, 2 African American, 1 Hispanic/Latino, 1 Other		Social studies	ABAC multiple-treatment design	observation and survey, Student academic achievement (worksheet that included 10 questions)
21.	2020	Smith et al. (2020)	USA	730	*Age range*: Grade 6 No. with low SES: 46% No. with AEN: 75 *Gender*: 49% male, 51% female *Ethnicity*: 57% white, 11% African American, 25% Hispanic, and 7% "other"	1 year	Literacy: Writing		WRITE Progress Monitoring tool (WPM)
22.	2018	Staats and Laster (2018)	USA	31 (teachers)	Age range: N/A No. with low SES: N/A No. with AEN: N/A Gender: N/A Ethnicity: N/A		Maths	Qualitative. exploratory case study	Focus groups

Towards Inclusive Learning Spaces: Unravelling Teacher-Student Dynamics in Moroccan High Schools

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ABSTRACT

This qualitative study explores the implementation of Universal Design for Learning (UDL) in Moroccan public high school English classrooms, examining how such practices influence student agency within structurally constrained educational settings. Drawing upon narrative inquiry and autoethnographic methods, the research investigates the perceptions and pedagogical strategies of secondary school teachers and students across rural and under-resourced contexts. Thematic analysis revealed three interrelated challenges to inclusive education: teacher-centred instructional models, limited extracurricular opportunities, and the enduring dominance of the French language in content delivery. These barriers are analysed in light of UDL's tripartite principles—Engagement, Representation, and Action and Expression—highlighting the structural disconnect between national policy initiatives and classroom realities. By foregrounding educators' lived experiences and student voices, this study contributes to a deeper understanding of the socio-political and pedagogical dynamics shaping inclusivity in Global South contexts. It also extends the theoretical application of UDL to non-Western, linguistically diverse, and resource-constrained settings. The findings offer practical and policy-level insights into how UDL can serve as a framework for equitable and transformative pedagogy, thereby supporting broader efforts to reimagine Moroccan education through more participatory and culturally responsive approaches.

Keywords

Universal Design for Learning, Student Agency, Inclusive Education, Moroccan Secondary Schools, EFL Pedagogy

INTRODUCTION

In recent years, the Ministry of Education in Morocco has taken visible steps to promote inclusive pedagogical practices by integrating Universal Design for Learning (UDL) principles into teacher training programmes, particularly targeting English language teachers (Aabi & Bracken, 2020; FHI 360, 2022; Inclusive Development Partners, 2021; Moumen, 2022). These policy-driven initiatives include the design and implementation of English textbooks—*Spotlight 1* and *Spotlight 2*—for middle school students, which are explicitly aligned with UDL's tripartite framework of Engagement, Representation, and Action and Expression. The overarching intention is to cultivate inclusive, student-responsive classrooms where instruction is diversified and where teaching materials and methods accommodate varying learner profiles and cognitive differences (Boualili & El Bakkali, 2025). These shifts aim not only to enhance linguistic competence but to foster student agency and self-efficacy.

Nevertheless, despite the growing policy interest in UDL, the practical realities of Moroccan classrooms present profound challenges to its adoption. Teachers frequently report difficulties such as overcrowded classrooms, insufficient digital infrastructure, limited access to differentiated teaching materials, and inadequate pre-service and in-service training (Boualili & El Bakkali, 2025; Seifelden, 2023). These constraints create a pedagogical environment that limits meaningful differentiation, stifles innovation, and often reduces instruction to standardised, teacher-centred delivery. Research has shown that even when digital tools are available, disparities based on gender, age, and geographical location affect teachers' ability to implement UDL-aligned strategies (Boualili & El Bakkali, 2025). Thus, the translation of UDL principles from policy documents into classroom realities remains uneven and fraught with contextual barriers.

The urgency of investigating UDL's relevance and application in secondary school English classrooms is further underscored by systemic challenges in the Moroccan education system. Recent data from the Arab Barometer network indicates that only a quarter of Moroccan citizens express satisfaction with public education, marking a sharp decline from previous years (Arab Barometer, 2024). Morocco's position at 154th out of 195 countries in the World Education Index (Dogan, 2024) reflects persistent structural and socio-economic issues. These include student disengagement, curriculum irrelevance, and infrastructural neglect—factors which disproportionately impact language acquisition and the cultivation of critical thinking skills. Overcrowding, in particular, is a chronic problem: nearly 33.2% of urban middle schools report class sizes exceeding 35 students, with some reaching upwards of 45 (Amrani, 2022; Hespress, 2024). In such environments, the pedagogical flexibility and individualised approaches advocated by UDL become increasingly difficult to realise in practice.

Against this backdrop, UDL emerges as both a pedagogical necessity and a conceptual provocation. Its insistence on accessibility, flexibility, and responsiveness offers a valuable counterpoint to entrenched practices that prioritise rote learning and teacher authority. Studies conducted in non-Western contexts such as Turkey, Egypt, and Colombia demonstrate that UDL-informed strategies—such as flipped learning tasks, multimodal

instruction, and scaffolded task-based language teaching—can enhance learner autonomy and support diverse linguistic needs, especially in under-resourced environments (Cruz et al., 2023; Kaçar et al., 2023; Seifelden, 2023). Importantly, these studies highlight that while UDL principles are globally relevant, their implementation must be attuned to the local cultural, institutional, and material conditions of each context. As Aabi and Bracken (2020) argue, transposing North American models of UDL into Moroccan classrooms without adaptation risks overlooking the socio-political and linguistic realities that shape both teaching and learning.

The scarcity of empirical research on UDL within Moroccan secondary education—particularly in English as a Foreign Language (EFL) classroom—constitutes a significant gap in the literature. Although inclusive education has become a policy priority, much of the existing discourse remains confined to generalised advocacy or higher education contexts, leaving secondary-level language instruction largely unexamined. Boualili and El Bakkali's (2025) recent study is one of the few to document gendered and technological barriers to UDL implementation in Moroccan EFL classrooms, pointing to the need for more grounded, practice-based inquiries. In this regard, the present study is situated within an emerging but underdeveloped body of scholarship that seeks to interrogate how UDL principles might be enacted—rather than merely espoused—in specific national and disciplinary contexts.

This research therefore seeks to examine the pedagogical dynamics between English language teachers and students in Moroccan public high schools, with particular attention to the challenges and possibilities of applying UDL principles in real classroom settings. It focuses on how Moroccan teachers perceive, interpret, and operationalise the core tenets of UDL in their daily practice, and how these practices influence the promotion of student agency—a concept increasingly recognised as central to inclusive and emancipatory pedagogy (Freire, 2000). Drawing from narrative inquiry and teacher testimony, the study aims to capture the lived realities of educators working within a system marked by deep-seated inequities, resource constraints, and cultural norms that often resist learner-centred reform.

In doing so, the article offers multiple contributions across several domains. From a theoretical perspective, it engages with and extends the conceptual framework of UDL by situating it within a non-Western, linguistically diverse, and structurally under-resourced educational setting. Methodologically, it adds to the growing field of narrative inquiry in education by foregrounding teacher voice and lived experience as valid and necessary forms of knowledge. At the policy level, the study identifies structural barriers that impede inclusive education reform, thereby offering actionable insights for education policymakers seeking to implement context-sensitive strategies. Practically, it contributes to the field of teacher education and professional development by highlighting specific areas—such as digital infrastructure and differentiated pedagogy—that require targeted support. Finally, the article contributes to global discussions on inclusive education by offering an empirically grounded, culturally nuanced account of UDL implementation in the Global

South, thus expanding the geographical and epistemological boundaries of current UDL scholarship.

Accordingly, this study is guided by the following research question: ***How do English language teachers in Moroccan public secondary schools understand and apply the principles of UDL, and in what ways do these practices support or constrain the development of student agency in under-resourced classroom contexts?***

The article is structured as follows: it opens with a critical review of the literature on UDL in secondary school and language education settings, drawing on both global and Moroccan sources. This is followed by a detailed description of the methodology employed, including data collection and analytical procedures. The findings are then presented and analysed, with particular emphasis on teachers' narratives and how these illuminate broader institutional and pedagogical tensions. The article concludes with a discussion of the study's implications for educational policy, teacher training, and classroom practice, as well as suggestions for future research in this underexplored but increasingly urgent field.

Literature Review

UDL emerged in the mid-1990s in response to an increasingly urgent call for more inclusive and accessible education. Drawing inspiration from the earlier work of Ron Mace and colleagues at North Carolina State University, whose Universal Design (UD) principles aimed to render physical spaces accessible to all, UDL extends this ethos to the architecture of learning itself (Gronseth & Dalton, 2020). At its core, UDL recognises that learner variability is not a marginal phenomenon but a defining feature of any educational context. CAST, the Center for Applied Special Technology, translated this insight into three guiding principles—Multiple Means of Engagement, Representation, and Action and Expression—each intended to remove learning barriers and accommodate diverse cognitive, cultural, and linguistic profiles.

The scholarly literature on UDL reveals a growing consensus that its principles offer more than accessibility; they present a paradigm shift toward student agency, differentiated instruction, and participatory pedagogy. In particular, research has shown that UDL-aligned teaching practices support not only inclusion but empowerment, especially in secondary and language education contexts. Kaçar et al. (2023), for example, highlight the effective alignment of flipped grammar tasks with UDL principles in Turkish EFL classrooms, noting enhanced student engagement and differentiated learning through thoughtful task design. Their study further illustrates how contextualised grammar teaching and gamified elements can provide meaningful pathways for diverse learners to access and express knowledge. Similarly, Seifelden (2023) and Cruz et al. (2023) underscore the effectiveness of UDL in EFL classrooms in Egypt and Colombia, respectively, focusing on strategies such as task-based learning, scaffolded instruction, and curriculum flexibility.

Despite such promising evidence, the application of UDL in non-Western, under-resourced educational systems remains uneven and often under-researched. Aabi and Bracken (2025) observe that while Moroccan higher education has begun to embrace

inclusive principles, the practical implementation of UDL is hindered by limited operational guidance and insufficient teacher training. Boualili and El Bakkali (2025) further demonstrate that Moroccan EFL classrooms continue to face structural barriers—ranging from inadequate technological infrastructure to gendered constraints—which affect teachers' ability to deliver UDL-informed instruction. Their quantitative findings reveal that the use of digital tools has a statistically significant positive effect on all three UDL domains, especially in enhancing student engagement and representation. However, they also caution that rural schools and female educators encounter disproportionate obstacles in implementing such strategies.

Parallel insights are provided by Mackey et al. (2023), who examined how teacher candidates in the United States navigate the practical challenges of UDL application. Their study finds that while UDL offers pedagogical clarity, teachers often struggle with the abstractness and complexity of adapting instructional practices. These findings align with broader critiques raised by Fornauf et al. (2021) and Kirsch et al. (2024), who note that without sustained professional development and institutional support, UDL risks being reduced to a rhetorical ideal. Gunderson et al. (2023) reinforce this argument, showing that inclusive strategies such as podcasting and multi-modal content delivery require more than technological access—they demand a fundamental rethinking of curriculum design and classroom interaction.

In terms of fostering student agency, several scholars have drawn attention to the intersection between UDL and critical pedagogies. Raman et al. (2024) advocate for the use of counter-storytelling within a UDL framework to amplify marginalised voices and foster classroom belonging. Meanwhile, Karisa (2023) and McKenzie et al. (2024) adopt a more critical stance, warning that the neoliberal co-optation of public education systems may dilute UDL's transformative potential. They argue that unless accompanied by systemic reform and political will, UDL risks being instrumentalised as a managerial solution rather than a liberatory practice aimed at cultivating expert learners with autonomy and self-direction.

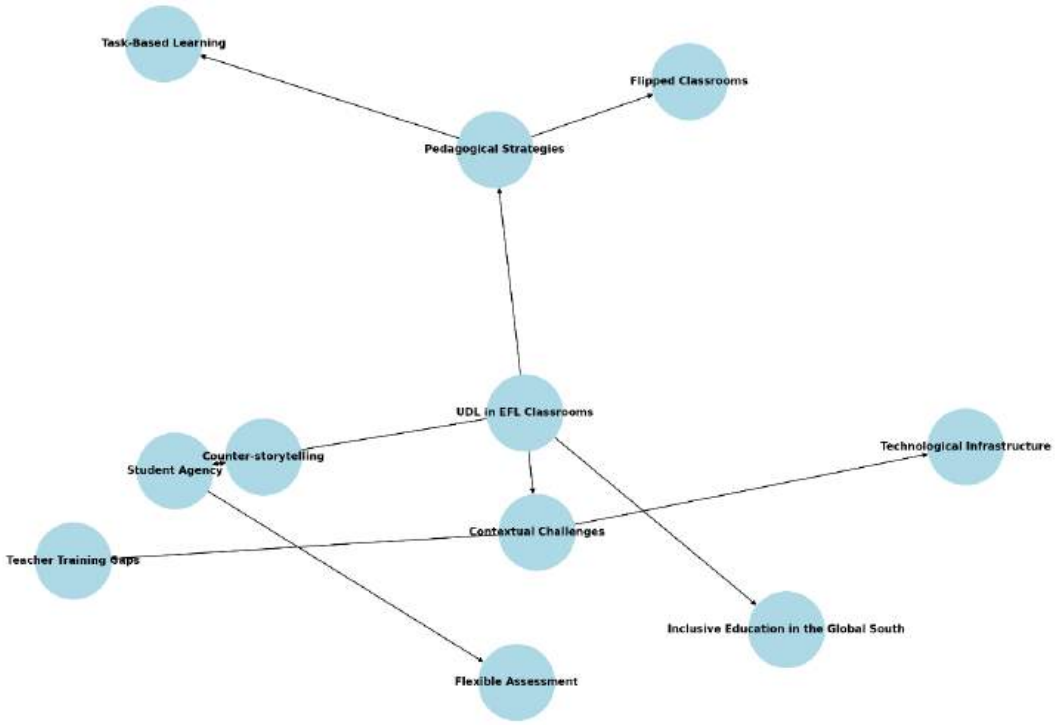
While the international literature on UDL has expanded considerably, the Moroccan context remains conspicuously underrepresented. To date, empirical studies examining UDL implementation in Moroccan secondary schools—particularly in EFL classrooms—are exceedingly rare. Even Aabi and Bracken's (2025) valuable contribution focuses primarily on higher education. Outside of Morocco, the closest comparable research is offered by Almutairi et al. (2023), who assess Saudi elementary school teachers' understanding of UDL. Their findings highlight moderate levels of conceptual awareness but point to systemic challenges in applying UDL within rigid curricular and administrative structures.

The limited integration of UDL into classroom assessment also remains a pressing concern. Tai et al. (2021) reveal that while inclusive assessment is a key component of the UDL framework, actual implementation remains sporadic. They call for a programmatic approach to assessment design that offers students choices in how they demonstrate their knowledge, thus aligning with UDL's emphasis on flexibility and agency. In a similar vein,

Howard (2003) discusses how legal mandates for accessibility necessitate the use of flexible curricula and educational technology to foster equitable participation.

Figure 1 below offers a thematic map summarising the key strands of the literature reviewed in this section. It visualises the three major domains addressed by current UDL scholarship in EFL secondary education: pedagogical strategies, contextual challenges, and student agency, all situated within the broader discourse of inclusive education in the Global South.

Figure 1. Thematic Map: UDL in EFL Classrooms *This map presents the core thematic strands from the reviewed literature, highlighting how UDL is applied, challenged, and interpreted across different settings.*



In addition, Table 1 below presents a structured overview of key studies discussed in the review. It includes their research context, focus, methodology, and relevance to the current study. This table is intended to offer a comparative perspective that underscores the gaps in existing literature and positions the present research as a timely and necessary intervention.

Table 1. *Overview of Reviewed Studies on UDL Implementation in EFL and Secondary Education Contexts*

Study	Country/Context	Focus	Methodology	UDL Principles Addressed	Key Findings	Relevance to Current Study
Kaçar et al. (2023)	Turkey	Flipped EFL grammar lessons	Qualitative	Engagement, Representation, Expression	Improved engagement and differentiated instruction through contextualised tasks	Relevant Global South example of UDL in secondary EFL
Aabi & Bracken (2025)	Morocco	Inclusive education in higher education	Narrative and policy analysis	General framework discussed	Barriers in policy implementation; need for adaptation to local context	Highlights gaps and policy-level challenges in Morocco
Boualili & El Bakkali (2025)	Morocco	Gender, technology, and UDL in EFL classrooms	Quantitative	Engagement, Representation, Expression	Digital tools improve UDL implementation; barriers for rural/female teachers	Directly examines Moroccan secondary EFL classrooms
Seifelden (2023)	Egypt	Inclusive education in EFL	Theoretical and empirical synthesis	General UDL approach	Multilevel teaching and assistive tech crucial for inclusion	Relevant North African EFL context
Carrillo Cruz et al. (2023)	Colombia	Inclusive strategies in EFL	Qualitative	Representation, Engagement	Curriculum adjustments improve learning outcomes for diverse learners	Highlights UDL in a Global South, under-resourced EFL context
Mackey et al. (2023)	USA	Teacher candidate training in UDL	Narrative inquiry	All three UDL principles	TCs struggle with abstractness and integration of UDL	Insights on teacher readiness and mindset shift

In sum, the literature reveals both the promise and the pitfalls of Universal Design for Learning. While numerous studies affirm its capacity to support inclusion, motivation, and agency—particularly in EFL and secondary school contexts—there remains a disconnect between theory and practice, especially in Global South settings. This review

identifies a critical lacuna in UDL research specific to Morocco's secondary education system. The current study seeks to address this gap by providing a context-specific, empirically grounded examination of how Moroccan EFL teachers understand and implement UDL, and what impact these practices have on student agency. It is hoped that such research will contribute not only to theory-building in inclusive education but also to the formulation of policy and pedagogical strategies that are both culturally relevant and structurally feasible.

Methodology

The methodology section of this research paper outlines the procedures and methods used to collect and analyze data. The research design, sampling procedure, inclusion and exclusion criteria, ethical considerations, data collection procedures, data analysis, and measures to ensure validity and reliability are all discussed in detail.

Research Design

This study employs a qualitative experience-centered narrative approach and an autoethnographic design. The narrative approach (Andrews et al., 2013) allows for a deeper exploration of the collective experiences and life-changing events the participants experienced during their educational journeys (Spector-Mersel, 2011, 2014). It encourages participants to discuss their feelings more deeply and delve into various aspects of their experiences with societal and economic pressures. The autoethnographic design (Bryman, 2012) leverages the researcher's 18 years of teaching English in two Moroccan public rural high schools, providing a rather hands-on perspective on the participants' lived experiences.

Sampling Procedure

The study includes 8 graduate students from rural areas and 6 high school teachers from 6 high schools. These participants were recruited via snowball and convenient sampling in rural and impoverished areas near the city of Fez, Morocco, as well as via various social media platforms.

Inclusion and Exclusion Criteria

The inclusion criteria for this study were graduate students from rural areas and high school teachers who were willing to share their experiences, the exclusion criteria were those who did not meet these conditions or were unwilling to participate in the study.

Ethical Considerations

The conduct of this research was shaped by the ethical framework outlined in the British Educational Research Association's Ethical Guidelines for Educational Research (British Educational Research Association (BERA), 2018). These principles provided the foundational standards for ensuring that participants' autonomy, dignity, and rights were protected at every stage of the inquiry. In light of the practical and geographic constraints involved, participants were first approached via digital platforms—initially Facebook

Messenger and subsequently WhatsApp—to arrange interviews at times of mutual convenience. The selection of these tools was based on their regular use by participants in everyday communication, which helped to minimise barriers to access and engagement.

Before any interviews were conducted, participants were given a detailed explanation of the study's aims, the scope of their involvement, and the voluntary nature of their participation. It was made clear that they retained the right to withdraw at any point, without any need to justify their decision or risk any adverse consequence. Consent was obtained in two distinct stages: initially for participation in the study, and subsequently for the audio recording of interviews. This two-stage consent process was intended to ensure that participants had time to consider their involvement and to reaffirm their decision once further information had been provided.

To protect participants' anonymity, a pseudonymisation protocol was adopted. Each interview recording and its transcript were assigned a randomly generated numeric identifier, and all personally identifying information was excluded during transcription and in subsequent reporting. These practices were not treated as mere procedural formalities, but as ethical commitments embedded in the broader relationship of trust and respect between researcher and participant.

All data were stored securely and handled in strict accordance with principles of confidentiality. Transcriptions were conducted by the principal researcher, with attention to preserving the meaning and nuance of participants' narratives while ensuring that any potentially identifying references were removed. The ethical approach taken was not confined to compliance with formal requirements, but aimed to honour the relational and contextual dimensions of qualitative research. It sought to create conditions in which participants felt heard, respected, and safe in contributing to a project that directly engages with their lived realities.

Data Collection Procedures

Data was collected through semi-structured interviews (Ackerly & True, 2010; Bryman, 2012), allowing participants to share their experiences and marking events during their education in different public establishments in Morocco. The interview process was split into two distinct phases. In the first phase, the interviewees were encouraged to recount their experiences in their hometowns, communities, and villages. During the second phase, targeted questions were asked to better explore different events and emotionally charged events arising from the participants' narratives.

Data Analysis

The gathered data was analyzed through narrative exploration (Andrews et al., 2013) where central themes would emerge through analyzing interview transcripts and evolve through various research stages. Flexibility was adopted to accommodate the interviewees' world views and to explore their educational experiences which range from high school to university. Such interview accommodation was also applied to teachers, who, though sharing different views on education in Morocco from students, may propose

similar narratives in relation to their work and their roles as educators. Thematic analysis, employing the hermeneutic circle methodology (Andrews et al., 2013), was used to code and compare multiple units of texts until thematic saturation was reached.

In this regard, thematic saturation was reached after several cycles of close reading, comparison, and re-contextualisation. At this stage, the themes that surfaced no longer represented isolated grievances or idiosyncratic experiences but rather pointed toward persistent issues within the educational architecture that bear directly on the feasibility of implementing UDL principles in Moroccan classrooms. In what follows, the three principal themes that emerged from the analysis are presented alongside their corresponding findings. This tabulated synthesis is intended not merely as a summary, but as a conceptual bridge between empirical insight and theoretical implication:

Theme	Findings
Teacher-Centred Education	A persistent reliance on teacher-dominated classroom structures remains the prevailing norm in Moroccan public schools. This pedagogical model, characterised by rigid control, silence, and rote discipline, is often rationalised by educators as necessary for managing large class sizes and meeting the demands of a curriculum that prioritises exam performance. Teachers, facing both institutional pressure and administrative surveillance, frequently abandon any attempts at creativity or student-centred engagement for fear of being labelled ineffective. The implicit pedagogical ideology rewards compliance over curiosity, grades overgrowth, and standardisation over inclusion. Such an environment is fundamentally at odds with the foundational principles of UDL, which advocate for learner autonomy, multimodal engagement, and differentiated assessment strategies.
Lack of Extracurricular Activities	Another significant theme to emerge concerns the widespread absence of extracurricular opportunities for learners in the public education sector, particularly in under-resourced and rural contexts. While students enrolled in private institutions often benefit from a range of enriching experiences (including field trips, cultural excursions, and access to school libraries), those in public schools are frequently denied such opportunities. Teachers who attempt to provide additional activities outside the classroom report encountering bureaucratic resistance, often couched in language of liability or discipline. This deficit not only limits students' exposure to diverse learning contexts but also curtails their ability to explore personal interests or build collaborative skills. The failure to support extracurricular engagement directly contravenes UDL's commitment to providing multiple means of action, expression, and representation, and deepens existing socio-educational inequalities.
Dominance of the French Language	Perhaps the most politically charged finding relates to the continued dominance of the French language within Moroccan educational settings, particularly as the medium of instruction in scientific and technical disciplines. Despite Morocco's rich linguistic diversity, French retains an outsized role in the classroom, functioning both as a gatekeeping mechanism and as a symbolic legacy of colonial power. Students from disadvantaged or non-francophone backgrounds are disproportionately affected, often forced to engage with complex scientific content in a language they do not fully command. Participants repeatedly pointed to the political entrenchment of this linguistic policy, attributing it not to pedagogical necessity but to elite-driven ideological agendas. This state of affairs creates structural exclusion and renders educational access uneven,

contradicting UDL's insistence on accessibility, cultural responsiveness, and equitable opportunity for all learners.

Trustworthiness and Rigour

This study adheres to principles of trustworthiness (Creswell & Creswell, 2023). Ensuring the credibility, dependability, and confirmability of the findings was central to the methodological design and execution. To enhance credibility, triangulation was employed through the use of multiple data sources, including narrative interviews and reflective field notes (Bryman, 2012). Participants were also engaged in member checking, where they were invited to review and comment on interpretive summaries of their narratives, thus ensuring that their voices were accurately and respectfully represented.

To address dependability, a transparent and reflexive research process was maintained throughout the study. This included a detailed audit trail documenting methodological decisions, theoretical positioning, and reflective entries that captured the evolving interpretations of the researcher (Bryman, 2012). Confirmability was pursued by acknowledging the researcher's positionality and by subjecting emerging themes to peer debriefing—a process whereby colleagues engaged critically with the analytic process, offering alternative readings and challenging potential assumptions. By employing a qualitative experience-centered narrative approach and an autoethnographic design, this study aims to shed light on the teacher-student dynamics in Moroccan high schools and contribute to the creation of more inclusive learning spaces.

Findings and Implications

The data collected captures a clear picture of the current state of Moroccan classrooms thus highlighting the challenges and the many opportunities that exist in the implementation of UDL in educational settings. Based on the analysis of the collected data, two powerful themes emerge.

Teacher-Centered Education

The most prominent theme that emerged from the data is the prevalence of teacher-centered education. The classrooms are characterized by a lack of student freedom and mobility (Gronseth & Dalton, 2020), with students often required to sit silently with minimal interaction with their peers. This is largely attributed to the lengthy and demanding curriculum that necessitates long, uninterrupted class sessions.

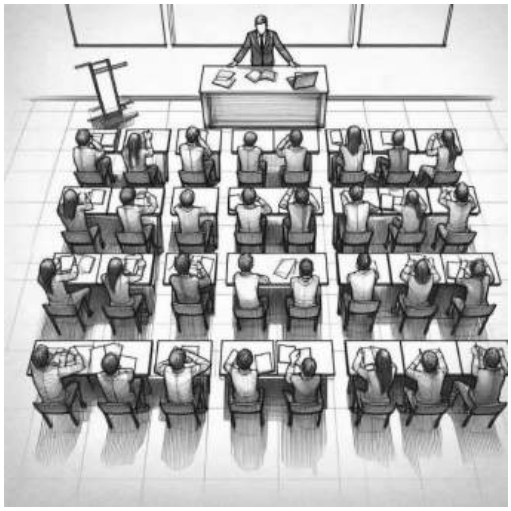
As a case in point, a teacher argues that "*… we cannot be creative in such a stressful environment… my primary goal is to get home at the end of the day without losing my mental abilities … students are uninterested in what I have to give them, they are most often absent minded and only look to cause troubles… I have to be tough on them… even though we are [teachers] being asked in numerous ministerial notes and trainings to give students freedoms and to involve them more in class through various activities such as singing and listening to music or doing education games in class… the moment I do such things, my class turns into a mess and soon, the headmaster and the administrative stuff would come running to see what's*

going on… I would be asked to "control" my students and to show them "who's the boss" … else I would be seen as incompetent."

This quotes significantly illustrates the authoritarian characteristics prevalent in many Moroccan high school classrooms. In these settings, educators receive social commendation from both colleagues and administrative personnel for maintaining stringent control over students, thereby ensuring a disruption-free environment for the administrative staff. This dynamic underscores the systemic issues within the educational framework that may impede the development of a more inclusive and engaging learning environment and reflects to a broader extent the mindset most prevalent in public Moroccan schools which is based on control, authority of the teacher and lack of students' mobility since it is usually perceived as lack of discipline from students and professionalism and teaching competence from educators.

Indeed, teachers, burdened by the responsibility of managing large classes of up to fifty students, resort to an all-encompassing strategy of "*listen and shut up*" as drawing 1 showcases. This approach stifles creativity and reduces student engagement, as the focus is primarily on the front of the classroom where the whiteboard is located as shown below. The large class sizes also discourage creativity, as any noise from students is met with repression from teachers. Consequently, silent, docile students who obey orders are preferred over creative ones. This dynamic results in fewer leadership roles for students, as they are merely required to follow the main leader of the class, the teacher as figure 1 suggests, without questioning his or her authority. Moreover, this approach and condition maintain focus on grading as a measure of students' achievement and a rather apparent lack of alternative/inclusive assessment strategies (Dalton & Brand, 2012; Tai et al., 2021).

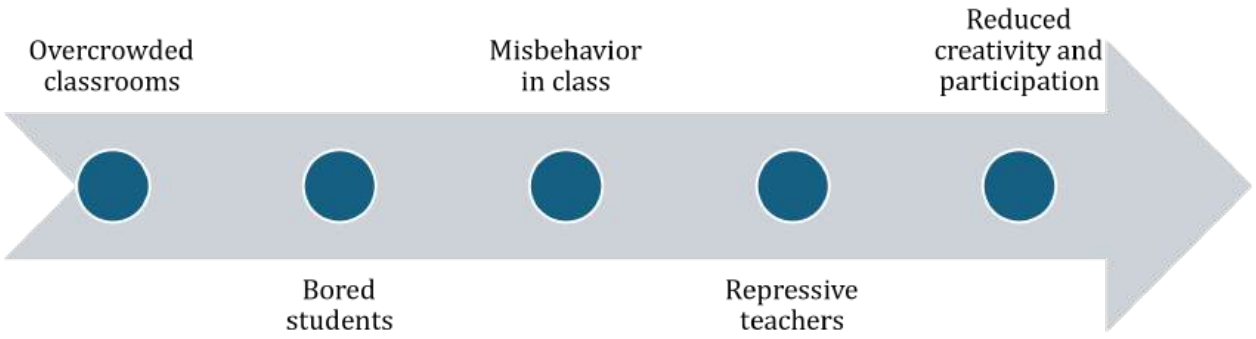
Drawing 1. *illustrates typical seatings in a Moroccan high school class where the focus is mainly on the board and interactions and teamwork is reduced to minimum.*



Another teacher from a rural high school argues that "… *my school gives much importance and attention to the grades of the students… even if the student's level is low, they tell you it doesn't matter, give him some marks … they care about the grades they don't care about the content of the lessons … they don't care about the activities … whenever I used to go to the administration and tell them to give me a laptop and a free classroom or an empty classroom to have an extra activity for my students, either listening or writing or just a game playing session, they tell me we don't have an empty room …just teach what's in your book and do the students a favor and give them good grades … even though they don't deserve it … that's all…*"

This passage provides a poignant critique of the current educational system in rural Moroccan high schools. The teacher's account underscores a systemic issue where the emphasis is disproportionately placed on students' grades rather than their holistic development. This grade-centric approach often overlooks the importance of the content of lessons and the engagement of students in various activities, both of which are crucial for comprehensive learning. The teacher's struggle to secure resources and space for extra activities highlights the lack of support for innovative teaching methods that go beyond traditional book-based instruction and more toward a student-centered approach (Sala-Bars et al., 2024). This not only stifles creativity but also limits opportunities for students to develop essential skills such as listening, writing, and teamwork through game-playing sessions. Furthermore, the practice of awarding marks to students regardless of their performance, as suggested by the administration, raises ethical concerns. It undermines the value of hard work and merit, potentially demotivating students who strive to excel academically.

Figure 1. *illustrates teacher-students dynamics in a typical Moroccan high school class.*



Lack of extracurricular activities

The second theme that emerged is the absence of extracurricular activities. The prevailing sentiment among teachers and students is that "c*lasses are for teaching and learning*," indicating a lack of engagement opportunities such as libraries, outings, field trips, and lab experiments. This absence of extracurricular activities further limits the opportunities for students to explore their interests and talents outside the confines of the classroom.

An interviewed graduate student contends that "… *in private schools, we see often yellow air conditioned busses taking students to land sights, historical monuments and different cities… they even take them to the beach on multiple occasions to visit Rabat and Casablanca and see the Morocco they will thrive in… whereas in our [public high] school, we did not enjoy such outings… once, we asked the headmaster of our school for a permission to go with the science teacher out in the field to collect rock samples, just next to the school… he refused that told us that he does not want any troubles and that when school is over at 6, we can go on our own, but not under his watch…*"

This passage presents a stark contrast between the experiences of students in private and public high schools in Morocco, accentuating the disparities in access to enriching educational experiences and the need for students to access multiple means of expression and engagement (Fornauf et al., 2021; Gronseth & Dalton, 2020; Reinhardt et al., 2023). The graduate student's account underlines the privileges enjoyed by students in private schools, who are afforded opportunities to visit various landmarks, historical monuments, and cities. These outings not only supplement classroom learning but also

expose students to diverse cultural and social experiences, thereby broadening their horizons and understanding of the complex social, economic, and educational realities they live in. In contrast, the lack of such opportunities in public high schools, as exemplified by the headmaster's refusal to allow a field trip for collecting rock samples, is disempowering to students and teachers alike. Field trips can provide practical, hands-on experiences that enhance students' understanding of scientific, social, political and economic concepts and foster their curiosity and interest in the subject. The headmaster's refusal, based on a desire to avoid 'trouble,' suggests a risk-averse attitude that prioritizes administrative convenience over students' learning needs. Moreover, the suggestion that students can undertake such activities on their own after school hours overlooks the fact that not all students may have the resources or the means to do so, especially girls who are most often confined to their family homes after school hours out of fear of dishonoring their families if seen (Žvan-Elliott, 2015). It also absolves and exonerates the school of its responsibility to provide comprehensive and inclusive learning experience (Hromalik et al., 2024). In essence, this narrative stresses the need for a critical examination of the disparities in educational experiences between private and public schools in Morocco. It calls for efforts to ensure that all students, regardless of the type of school they attend, have access to diverse and enriching learning experiences. This is crucial for fostering an equitable and inclusive educational environment that caters to the diverse needs and interests of all students alike, whether in private or public schools.

French is King/Queen!

The third theme is the dominance of the French language in Moroccan classrooms. Despite the cultural diversity and multilingualism of Morocco, French remains the primary language of instruction (Ben Haman, 2021). This dominance not only positions Morocco as a subservient state to its former colonizer, but it also limits opportunities for students, particularly those in rural and marginalized areas who do not master the French language. The use of French as the medium of instruction in scientific disciplines presents an additional challenge for often ill-equipped students who need attention. They are required to grapple with complex subjects such as chemistry, physics, natural sciences, and mathematics in a language they do not fully command.

In this regard, a graduate student argues that "…*education in Morocco is influenced by political thinking … in my opinion, reforms will not achieve their objectives if education is in the hands of the politicians … teachers should be included in reforms because they are the right people for the intended reforms … we know that politicians have hidden agendas that they want to serve …so education in Morocco is most of the time instrumentalized to serve political agendas and we have seen the debate over the teaching language in the past few years , we have the French lobby who was defending the French language as the instruction language in scientific disciplines …each politician is defending his own ideology … if it is liberated from the politicians I think we can talk about reforms, we can start a genuine reform*…"

This passage provides a critical perspective on the role of politics in shaping the educational landscape in Morocco. The graduate student's argument centers on the belief

that education in Morocco is heavily influenced by political thinking, which can potentially hinder the effectiveness of educational reforms. The student's assertion that reforms may not achieve their objectives if education remains in the hands of politicians underscores the perceived disconnect between political agendas and the realities of the classroom. This sentiment suggests a need for greater involvement of teachers in the reform process, as they are the ones directly engaged with the implementation of educational policies and practices.

The claim that education in Morocco is often instrumentalized to serve political agendas is a serious one. It implies that the primary purpose of education - to foster learning and personal growth among students - may be overshadowed by the pursuit of political interests. The debate over the teaching of language, as mentioned by the student, is a clear example of how educational decisions can become entangled with political ideologies. Indeed, the student's call for education to be 'liberated' from politicians indicates a desire for a more autonomous educational system, where decisions are made based on educational merit rather than political considerations. This, according to the student, could pave the way for genuine reform.

In essence, this narrative underlines the complex relationship between politics and education in Morocco. It highlights the need for a more inclusive and participatory approach to educational reform, one that considers the perspectives of those directly involved in the educational process, such as teachers and students. It also calls for a critical examination of the role of politics in education, with a view to ensuring that educational decisions serve the best interests of students rather than political agendas.

Implications of the Findings

Overcrowded classrooms are an unavoidable reality in Moroccan schools. This presents a significant challenge for teachers, who must accommodate the diverse educational needs and learning styles of their students. Some learners thrive on visual stimuli, while others benefit more from auditory instruction, highlighting the importance of adapting teaching methods. UDL offers a framework that can help address these challenges by encouraging teachers to vary their instructional approaches and cater to multiple intelligences. Through UDL's emphasis on multiple means of engagement, representation, and expression, educators can implement strategies that meet the needs of all students, ensuring that each learner can benefit from a teaching style that aligns with their unique preferences.

While overcrowded classes are difficult to manage, UDL-based instruction can transform the learning experience. By varying teaching materials and methods, educators can create a more inclusive environment where students of all learning styles—whether visual, auditory, or kinesthetic—can thrive. The flexibility of UDL allows for differentiated instruction that adjusts to each student's level and needs, ensuring that no learner is left behind, even in the most challenging classroom environments.

In addition to teacher adaptation, school administrators play a critical role in fostering a more inclusive educational environment. Rather than being risk-averse,

administrators should prioritize offering students varied learning experiences. This involves supporting extracurricular activities, field trips, and experiential learning opportunities that encourage students to explore and engage with the world around them. Such initiatives not only enrich the educational experience but also promote critical thinking, creativity, and a deeper understanding of the curriculum. Schools must become spaces of exploration and innovation, where students are given the freedom to learn beyond traditional classroom constraints.

Moreover, the rigid structure of Moroccan classrooms, where students are often confined to their desks for 50 minutes or more, contributes to disengagement and boredom. This environment limits students' opportunities to engage in active learning, such as group work and collaborative discussions. Teachers should feel empowered to allow their students more freedom to move and express themselves during class, as long as they remain engaged in the learning process. Providing this flexibility encourages creativity and fosters a more dynamic and interactive learning environment, benefiting all students as drawing 2 showcases.

Drawing 2*. illustrates a dynamic classroom environment where students engage with the lesson content in ways that reflect their diverse learning styles. Contrary to the traditional perception of order, some teachers and administrators may see this as a chaotic learning environment. However, it represents a space where students are encouraged to adopt and adapt the material through various modes of interaction—whether working individually, in pairs, or in groups. Movement within the classroom is fluid, and the teacher takes on a facilitative role, allowing students more autonomy in the production and retention of knowledge.*

The assessment methods in Moroccan schools also need urgent reform and reconsideration. Currently, students are assessed primarily through written exams, which fail to account for the wide range of learning styles present in the classroom. This strict grading system favors students who excel at reading and writing, while neglecting those

who may thrive in visual, kinesthetic, or auditory tasks. Schools should adopt alternative assessment methods that reflect the principles of UDL, giving students multiple ways to demonstrate their knowledge. Teachers, who know their students best, should be trusted with the flexibility to assess learners in ways that reflect their individual strengths, ultimately creating a more inclusive and equitable assessment system.

Conclusion

The findings from the study on the implementation of UDL in Moroccan classes reveal a complex environment where teacher-student dynamics are influenced by traditional pedagogical approaches, resource constraints, and systemic educational policies. Despite the challenges, there are opportunities for fostering inclusive learning spaces that cater to the diverse needs of students. This study has attempted to partially shed light on the relationship between teachers and students in Moroccan high schools where the implementation of UDL principles—Representation, Action and Expression, and Engagement—display a strong and promising potential in promoting student agency and empowering learners. However, the journey towards truly inclusive learning spaces is fraught with obstacles that stem from deeply entrenched educational practices and a lack of supportive infrastructure.

The research faced several limitations that must be acknowledged. The sample size was relatively small and confined to a specific geographic area, which may not fully represent the diversity of Moroccan high schools. Additionally, the reliance on qualitative methods, while providing rich insights, limits the generalizability of the findings. The study also encountered constraints in accessing comprehensive data on the broader implementation of UDL across Morocco. In this regard, future research should aim to expand the scope of investigation to include a larger and more diverse sample of schools across the country. Quantitative studies could complement the qualitative findings to provide a more holistic view of UDL's impact. There is also a need for longitudinal research to track the long-term effects of UDL implementation on student outcomes. Moreover, exploring the role of technology and digital resources in enhancing UDL practices could offer valuable understanding into creating more adaptive and responsive educational environments.

In conclusion, while the path to inclusive education in Moroccan high schools is challenging, the potential benefits of UDL in fostering a more equitable and engaging learning experience are undeniable. It is imperative that educators, policymakers, and stakeholders collaborate to overcome the barriers and embrace the principles of UDL to nurture the next generation of learners.

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The Potential of Universal Design for Learning in the Research Field of Special Education: An Inclusive Perspective

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ABSTRACT

This paper offers a reflective synthesis on the potential of Universal Design for Learning (UDL) in special education from an inclusive perspective. Methodologically, the study follows an exploratory and critical approach, conducting an integrative review of literature published between 2018 and 2022 in two Brazilian databases: SciELO and the Brazilian Digital Library of Theses and Dissertations (BDTD). The selection focused on texts aligned with the research agenda of the Acessi Group. The BDTD review revealed a strong emphasis on the relationship between UDL and special education, especially in terms of teacher education. Studies highlighted formative and collaborative research methodologies and recognized UDL as a tool to enhance inclusive teaching practices. In contrast, few articles in SciELO addressed UDL, and only two directly connected it to special education and teaching practice. These findings resonate with Acessi's core interest in developing formative methodologies—such as narrative and design-based research—to support teacher professional development within an inclusive framework. Research within regular school settings tended to address school inclusion with a primary focus on students eligible for special education, although not exclusively. The review concludes that there is a pressing need for pedagogical and technological support to strengthen inclusive teaching practices. From the Acessi perspective, this includes adopting UDL and the concept of a "Pedagogy of Seasons" as strategic supports for inclusive education. These approaches are seen as central to responding effectively to the diverse needs of learners in inclusive environments.

Keywords

special education, inclusive education, universal design for learning, inclusive teaching practice

Background and Objectives

The Agenda 2030 defends, as one of its objectives, "inclusive and equitable quality education" (UNESCO, 2015). This purpose has challenged teachers and researchers in a constant quest for pedagogical supports for special education in the inclusive perspective. According to UNESCO report of 2020, "more than 50% of teachers in Brazil, Colombia and Mexico reported a great need of professional development in the teaching area regarding students with special needs" (2020, p. ix). These data bring a main issue to our consideration: the teachers´ professional development for inclusive education, addressing the challenges of special education transversality in the regular teaching system.

In Brazil, *Acessi* research group is investigating special education, seeking to project techno-pedagogical propositions for the inclusive teaching practice. In other words, the central focus of this research group is the development, validation, and use of inclusive learning objects in collaboration with public school teachers. In this scenario, we understand Universal Design for Learning (UDL) as an important support for teachers committed to inclusive and equitable education through its guidelines for the accessible curricular approach. However, we have faced similar challenges to those found in other school systems. All investigations highlight the teachers' need for additional planning time and the lack of confidence in their own competence to teach in an inclusive way. (Alquraini & Rao, 2020). Since there are investigations in international scope which approximate inclusive education and UDL, we have opted for an integrative review on this issue. Therefore, the objective of this text is to show, in the light of recent international research and *Acessi* research group's studies, a reflexive synthesis about the potential of UDL working within special education in the inclusive perspective. It is important to highlight, however, that we seek not to reduce UDL to the special education field focused on people with disabilities.

Methods and Findings

This study employed an integrative review methodology, drawing on two major Brazilian academic databases: the Scientific Electronic Library Online (SciELO) and the Brazilian Digital Library of Theses and Dissertations (BDTD). The review covered the period from 2018 to 2022, selected to align with the central research agenda of the Acessi Research Group. This timeframe was chosen because it marks the initial emergence of Brazilian research on Universal Design for Learning (UDL) in the context of teacher education, notably beginning with the publication of the first doctoral dissertation on the subject in 2018. Accordingly, the review focused on the first five years of scholarly production in this area.

In the initial search phase, the combined descriptors "inclusive education" and "Universal Design for Learning" were employed. Based on the preliminary results, the search strategy was expanded to include the terms "inclusive education," "special education," "teacher education," and "classroom practice." The BDTD search was specifically restricted to Brazilian theses and dissertations, with the aim of providing a comprehensive overview of the current state of research on UDL within the national academic landscape.

Table 1: *Texts on UDL in the field of education in the two databases and Acessi (Brazil, 2018-2022)*

Acessi research group (23 researches)	**BDTD database** (18 researches)	**SciELO database** (10 papers)
Cases from special education	Cases from special education	Various subjects from education
Formative methodologies (narrative and design-based research)	Formative and collaborative methodologies	Various methodologies
UDL as a support to equitable educational experiences for all students	Teachers´ education with UDL	Teaching practices based on UDL and brought it closer to special education
(Costa-Renders, Aparício & Bracken,2020; Gonçalves, 2020; Agostini, 2021; Costa-Renders, 2019, 2023)	(Zara, 2022; Anjos, 2022; Mendoza, 2022; Prais, 2020; Zerbato, 2018)	(Costa-Renders, 2021; Zerbato & Mendes, 2021)

Elaborated by the author, 2024.

Table 1 shows that, considering the output registered in Brazilian databases, the research on UDL and inclusive education is not only permanent, but increasing. Although, the sample is still small, the data achieved demand a higher search refinement. For instance, considering the data from SciELO-Brazil, six from ten articles written between 2008 and 2022 on the subject of UDL in the field of special education, concentrate in one single publication, the *Revista Brasileira de Educação Especial* [*Brazilian Journal of Special Education*]. Further on, we shall come back to this. In a second step of this literature review, we examined the abstracts and looked for those topics which would contribute to deepen a reflexive synthesis about the potential of UDL within the framework of special education in an inclusive perspective (always understanding that this perspective transcends the field of special education). Having clarified this, we started to describe how the individual research connected specifically UDL to the teaching practice. Among the ten articles discussing UDL considering a variety of subjects, two of them focused on the teaching practice based on UDL and brought it closer to special education (Costa-Renders et al., 2021; Zerbato & Mendes, 2021). Using the descriptors, appearing in the BDTD are18 scientific publications, among them 12 master's dissertations and 6 doctoral theses. In twelve of eighteen texts predominated the topic of the interrelationship between UDL and special education, another five addressed teachers´ education (Zara, 2022; Anjos, 2022; Mendoza, 2022; Prais, 2020; Zerbato, 2018), looking into the formative and collaborative research methodology, expressing the understanding that UDL contributes to the practice of inclusive teaching.

In Brazil, there has been a growing emphasis on the development of applied research in public schools with the aim of bringing together researchers and teachers in the search for ways to build schools for all. In this context, formative research aimed at

promoting professional development for teachers within an inclusive perspective stands out. Universal Design for Learning (UDL) plays an important role in this process. One research study relates UDL with Differentiated Instruction (Zara, 2022), seeing both as supports for the inclusive teaching practice.

Finally, we established a dialogue between these results and the intermediate conclusions of the ongoing research within Acessi on formative methodologies (narrative and design-based research), aiming at the teachers´ professional development from the perspective of inclusive education. These Acessi related projects totalled 23 Master's Dissertations and 8 Scientific Initiations concluded. Here we identified an emphasis on the topic of school inclusion of students eligible for special education, although it was not unilaterally.

Table 2: *UDL papers from Acessi research group between 2018 and 2023*

Author and year	**Title**	**Publishing House or Journal Name**
Costa-Renders (2019)	*Pedagogy of Seasons and UDL: the multiple temporalities of learning involving the university as a whole*	Routledge
Costa-Renders, Bracken & Aparício (2020)	*UDL and Pedagogy of Seasons: the multiple temporalities/spaceality of learning in schools*	Educação em Revista
Costa-Renders & Gonçalves (2020)	*UDL guidelines as a support for inclusive teaching practice*	Ensino e Pesquisa
Agostini & Costa-Renders (2021)	*Teachers' education from inclusive practices and UDL*	Práxis Educacional
Costa-Renders, Goncalves, & Santos (2021)	*UDL: a curricular approach in inclusive school*	E-Curriculum
Silva & Costa-Renders (2021)	*The appreciation for learners' variability in inclusive education*	Educere
Costa-Renders; Sousa & Bresciani (2022)	*Remote teaching and inclusive education: approaches with UDL*	Tempos e Espaços em Educação
Costa-Renders (2022)	*The construction of the inclusive school: approaches with UDL*	I CIEID, Lisbon
Costa-Renders (2023)	*UDL in the Context of Brazilian Education*	IGI Global
Costa-Renders (2023)	*Challenges of teaching based on UDL: in perspective on curricular variability*	Educere

Elaborated by the author, 2024.

Among the various research projects, we highlight one conducted between 2019 and 2021, supported by the São Paulo Research Foundation (FAPESP), entitled The School for All: Special Inclusive Education and Its Interface with UDL. This project was coordinated by Dr. Elizabete Cristina Costa-Renders (University of São Caetano, Brazil), along with twelve Brazilian researchers and professors, including Dr. Maria Teresa Eglér Mantoan (University of Campinas, Brazil) and Dr. Sean Bracken (University of Worcester, UK). The methodology employed was applied research with an interventionist approach, where the epistemological focus was placed on inclusive pedagogical experiences based on Universal Design for Learning (UDL). One of the main outcomes of the project was the

need to reexamine the semantics of the concept of "universal design." A key issue was identified in the interpretation of UDL, which is often understood as a support for curricular planning based on universalizing standards. This conception contradicts both the principles of inclusive education and those of UDL itself. It is essential to move beyond this understanding, as when UDL is framed as a reference for curricular planning aimed at expanding learners' influence over the curricular course, it significantly enhances the effectiveness of inclusive teaching practices.

Saying so, the integrative review led to a common ground. As Woodcock et al., it points out that UDL can "support fair and equitable educational experiences for all students." (Woodcock et al., 2022, p.2-3), but important confrontations are necessary so that inclusive teaching practices in schools are put into effect. Among the confrontations, we can mention: the collisions with the prescriptive curriculum - homogeneous and inflexible (Costa-Renders et al., 2021) and with the bureaucratization of the teaching work that has shortened the time for teaching planning (Silva, 2022); the importance of teacher education in the work with UDL guidelines to support everyday teaching practice. (Agostini & Costa-Renders, 2021)

Discussion of the findings

Results at hand, Acessi decided to use three discussion axes, valuing its potential to contribute to the ongoing empirical research on UDL along with the Brazilian public-school teachers.

a) The complexity of inclusive education: practices impacted by conceptions

The research about education, between 2018 and 2022, signal the remarkable impact of the inclusive education proposal in school systems throughout the world. Consequently, inclusive educational policies are consolidated in a process of continuous publication of international documents with multilateral consensus (UN, 1994; OCDE, 2010; UN, 2015; UNESCO, 2020). However, according to the literature review carried by Griful-Freixenet et al (2019), there are multiple inclusive education comprehensions and approaches which led to an alert of the *Global Education Monitoring Report 2020: Latin America and The Caribbean* (UNESCO, 2020):

> Although some countries are transitioning towards inclusion, mistaken perceptions and segregation are still prevalent. Around 60% of the countries in the region have a definition of inclusive education, but only 64% of these definitions comprise several marginalized groups, what suggests that most countries haven't still adopted a wide concept of inclusion. (UNESCO, 2020, p.ix)

We understand that in this scenario, we still need both: the epistemological discussion about inclusive education and empirical investigations about the inclusive teaching practice, for "inclusion is much more than the placement of a student

previously pushed to the edge inside a regular classroom. Inclusion demands that educators use innovative and inclusive teaching practices." (Woodcock et al., 2022, p.3). This underlines the relevance of the techno-pedagogical supports for the inclusive teaching practice, especially, when we seek to consolidate special education in the inclusive perspective. Notably, it matters to overcome the reductionism of inclusive education to the procedures of school inclusion of people with disabilities. We must keep bringing UDL close to special education, however, insisting on the enlargement of learning opportunities for all, or for persons with and without disabilities.

In Brazil, this conceptual and pragmatic confusion contributed to the wrong idea that only teachers trained in specialized educational assistance can be responsible for school inclusion regarding students with disabilities. This limited the effectiveness of inclusive and equitable education. However, identifying the problem, more and more teachers, specialists, and generalists have sought personal support for the planning and practice of equitable and inclusive teaching. To this end, individuals began to turn to UDL (CAST, 2018), or, in the case of Acessi, to UDL and the Pedagogy of Seasons (Costa-Renders, 2020; Costa-Renders et al., 2021) as references for the development of accessible and inclusive teaching devices.

b) The teachers´ self-perception about one´s inclusive teaching practice

Although Acessi has not yet looked very much into this question, our investigation confirmed that other researchers tried to better understand the teachers´ self-perception about the inclusive teaching practice (Zara, 2022) and its relation to one's self-efficacy**.** An "individual´s self-efficacy in a particular domain can influence their goal setting, effort expenditure, and when faced with difficulties, their resilience and perseverance (Bandura, 1997; Pajares & Schunk, 2001), making self-efficacy a pertinent consideration in the teaching profession" (Woodcock et al., 2022, p. 3). No doubt, this issue demands an amplification of Acessi´s research profile, eventually answering the guiding questions: To what extent little consideration of teachers´ self-perception about their teaching practice could impact the individuals' lack of confidence to continuously develop inclusive teaching practices? What is the quality of the research instruments that seek to understand this teachers' self-perception about inclusive teaching practices? Certainly, this amplification, while originally an unintended side-effect, will also challenge the reductionism of inclusive education to the inclusion of students eligible to special education. At this moment, this still happens. For instance, in a study about the simulation of school inclusion, the perception about teachers´ self-efficacy in the inclusive practice still concentrates on the person with disability:

> The questions asked are grouped in situations in which the teacher must assist the inclusion of a student with an intellectual, physical and visual disability, specifically about assessment of physical capacities, motor abilities teaching and collective sports games organization. (Reina et al., 2016, p. 96).

Here, all is centred on instruments for the teaching to students with disabilities. Therefore, we ask: Is the understanding of teachers' self-efficacy not still linked to the medical model of disability? As far as we see it, the term “capacities assessment” reports to the prevailing ableism in society and school systems. Consequently, we still lack instruments of data collection that are guided in the social model of disability and in UDL. We have understood this is a demand for the enhancement of Acessi research about UDL. The research needs to offer support to teachers in the development of their self-perception of the teaching practice in the inclusive education perspective.

c) UDL relevance as one of the supports to inclusive teaching practice

As previously mentioned among the supports for inclusive teaching, UDL has been highlighted for offering the guidelines for a curricular approach accessible to all students. In Brazilian research, there is one study that considers the possibilities and limits of teaching education based on the theories of Differentiated Teaching and in UDL (Zara, 2022). The author also mentions the perception of self-efficacy on the part of the teachers. Among international research, Woodcock, et al (2022) states that “both UDL and differentiated instruction, when used effectively, can support fair and equitable educational experiences for all students. (p.2-3). Nevertheless, he differentiates between their proactive and reactive dynamics:

> Universal Design for Learning is considered a proactive approach where responsiveness to student diversity is planned from the outset regardless of students' specific needs, whereas differentiated instruction is considered a reactive approach where learning experiences are varied or modified to cater to students’ specific needs. (p.2-3)

In collaboration with teachers from Brazilian public schools, the Acessi research acknowledges the relevance of presenting new possibilities for pedagogical approaches, based on accessible and powerful teaching devices that address barriers in teaching and learning processes. In this regard, the research is applied, collaborative, and proactive, working alongside teachers to develop inclusive educational technologies that respect the potentialities and confront the limitations of each school context. In particular, it contributes to the essential practice of inclusive teaching.

Still, in the scope of the search of the techno-pedagogical supports for inclusive and equitable education, we must mention the personalized learning supported in technology (Zhang et al., 2022). According to Zhang, one of the implications of personalized learning to UDL is that UDL can serve as a starting point for a more holistic approach in the personalized learning conception for all the students. This UDL characteristic meets the affirmations of one of its developers. By discussing the past and the future of UDL guidelines, David Rose highlights the continuous need to “identify, name and redress systemic barriers to equitable learning and outcomes” (Rose, 2021).

The author has inclusive and equitable education in perspective in the same way it was pointed out in Agenda 2030 (UNO, 2015). Rose also recognizes some limits in UDL's original proposal by discussing the curriculum conception, because if, originally, the objective was to make the curriculum more accessible to all the students, currently "more than making the existing curriculum more accessible, it will require universally re-designing the mission or goals of the curriculum" (Rose, 2021). In this sense, the current perception of UDL points to existing structural barriers on the following terms:

> They are typically institutional or systemic, they are more often about identity than ability, and more often implicit rather than explicit. They are barriers that affect people primarily on who they are rather than what they can do: Barriers such as racism, genderism, ethnocentrism, and ableism. (Rose, 2021)

The newly introduced guideline that advocates for "depicting a diversity of perspectives and identities in a realistic and everyday manner" (CAST, 2024) represents a significant milestone. It recognizes that providing content in multiple formats alone is insufficient; educational materials must also reflect the diverse lives, cultures, histories, and knowledge systems of students. This shift is especially relevant in Brazil, where many children and adolescents grow up without seeing themselves represented in textbooks, classroom images, or pedagogical examples. The national curriculum frequently overlooks the histories and contributions of Indigenous peoples, Quilombola communities, and residents of urban peripheries. Moreover, students' linguistic expressions are often corrected in the name of formal language, without acknowledging the legitimacy of their native dialects, accents, and modes of expression.

Rose's reflections underscore challenges closely aligned with those identified in discussions about teachers' self-perception of efficacy in inclusive education. The conception of Universal Design for Learning (UDL) as a pedagogy centred on individual learner variability is reflected in the substantial number of studies applying UDL within special education. This emphasis, however, raises concerns about reductionism and points to an ongoing conceptual debate regarding the universal versus particular nature of UDL. In this context, Costa-Renders has developed the metaphor of the Pedagogy of Seasons, an educational approach that emphasizes the simultaneous plurality of teaching and learning processes.

> The approach between universal design for learning and pedagogy of seasons pointed out there still have been important conceptual tensions in this process, especially regarding the paradox inherent to inclusive practices: assist the universal/particular or be up to the variability of strategies without losing sight of the global. (Costa-Renders et al., 2020, p.1)

The Pedagogy of Seasons recognizes knowledge comes to everyone at different times and spaces, just as the seasons of the year. They don't settle in a pedagogical time

marked by curricular inflexibility, but they differentiate themselves continuously. Thus, it is necessary to consider these variations, and work towards the enlargement of the learners' influence in the curricular dynamics (Costa-Renders, 2019).

It prioritizes multimodal learning opportunities and student agency. This pedagogy is grounded in three core principles: inclusive didactic intentionality, narrative learning (as proposed by Goodson, 2010), and simultaneous plurality. It asserts that learning unfolds uniquely for each individual—much like the changing seasons—resisting the rigidity of standardized curricular timeframes and instead fostering flexible, student-influenced curricular dynamics (Costa-Renders, 2019; Costa-Renders et al., 2020).

Conclusions

The contemporary investigation (between 2018 and 2022), described in this text, clearly identified, at least, two challenges: the gain of a conceptual clarity about inclusive education (signalled by the emergence of the concept "equitable" in SDG 4 from Agenda 2030) and the search of techno-pedagogical supports for the teaching practice based on the inclusion paradigm (comprising the special education conception in the inclusive perspective). We understand the transversality of special education in the teaching system demands the enlargement of resources, structures, and new techno-pedagogical propositions in the sense of teaching practice transformation.

Internationally, UDL (CAST, 2018) is set as a proposal that can support the consolidation of special education in the inclusive perspective, for it (as an educational design) uses in advance what would be the accessible curricular approach, aiming at inclusive and equitable education for all learners (with and without disabilities). In other words, it does not use learning in advance, but it uses the equitable and accessible teaching practice in advance by offering the signalling guidelines for the planning of teaching based on the inclusion paradigm. Finally, the research developed by the Acessi study group highlights the necessary criticism of the reduction of the UDL implementation to teaching for students eligible for special education. If, historically, it was based on cases of inclusion of students with disabilities, currently, its proponents seek periodic reviews of its guidelines to better serve inclusive and equitable education.

The findings of this study highlighted several challenges faced by the Acessi research group, particularly the limited time that teachers are able to dedicate to participating in our studies, as well as the bureaucratic obstacles that often hinder the feasibility of conducting research in school settings.

In considering future studies within the scope of the Acessi research group, we first recognize the importance of broadening our research focus to understand how the principles of Universal Design for Learning (UDL) have been applied in Latin American educational systems. Secondly, it is relevant to direct our attention to the

implementation of the 2024 version of the UDL Guidelines (version 3.0), as this updated framework appears to better address the demands of the Brazilian educational context.

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Universal Design for Learning in Irish Further and Higher Education: Educators' Knowledge & Practice

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ABSTRACT

Over the past three decades, there has been increasing attention to inclusion across all levels of education (Atles et al., 2023). Universal Design for Learning (UDL) has emerged as a key framework for creating more accessible and equitable learning environments by addressing diverse learner needs through flexible teaching practices. While international momentum for UDL is strong, most research originates from North America, with limited context-specific data from Ireland. This study addresses that gap by examining the attitudes, knowledge, and practices of educators in the Republic of Ireland's further and higher education sectors. A survey (n=64) was used to investigate how educators understand and apply UDL in their teaching. The findings indicate generally positive attitudes and growing engagement, but also highlight persistent challenges related to inconsistent knowledge and limited institutional support. The results suggest that professional development and system-level alignment are essential for meaningful and sustainable UDL implementation.

Keywords

UDL, further education, higher education, knowledge, practice, attitudes

INTRODUCTION

Attention to inclusive education from early childhood to higher education has increased in the last three decades (Atles et al., 2023). Universal Design for Learning (UDL) is a framework aimed at fostering inclusivity in education by accommodating diverse learning needs through flexible and accessible teaching practices. Over the past decade, there has been growing recognition of the potential of UDL to transform the educational experiences of every student, particularly in further and higher education. In Ireland, the adoption of UDL principles in further and higher education has gained momentum, driven by policy initiatives and a commitment to inclusivity (Banks et al., 2024; Flood & Banks, 2021). It is the educators in further and higher education who are at the forefront of this adoption of UDL (Hills et al., 2022) as they are best positioned at the interface of learning, teaching, and assessment. However, research (Hills et al., 2022; Lombardi et al., 2011) shows that educators' identified values of inclusive practices do not automatically translate into practice. For example, lack of understanding of UDL's

foundational concepts and guidelines can result in an absence of UDL implementation as an inclusive practice. Thus, it is necessary to understand the relationship between educators' attitudes to and perceived understanding of UDL in relation to their stated practice. Studies exploring this relationship between UDL understanding, to date, are predominantly occurring in the U.S.A., with some studies emerging in Canada. While these studies can inform UDL implementation globally, the contextual dimensions of different countries further and higher education systems must be considered in any policy or pedagogy adoption. Thus, this paper adds to the existing literature. It outlines the influences bringing UDL to prominence in the Irish further and higher education system before highlighting current literature on attitudes and practices of the sectors' educators, predominantly from the U.S.A. Using a survey approach (n=64), it explores the attitudes, knowledge and practice of further and higher education educators in the Republic of Ireland, addressing the research question, "What is Irish further and higher education teachers' current UDL knowledge, understanding and practice."

The Irish education landscape

Globally, higher education institutions are experiencing increasingly diverse student populations, including students with disabilities, varied cultural and linguistic backgrounds, and differing socioeconomic statuses. Reports indicate that 18% of higher education students and seven percent of further education students in Ireland identify as having disabilities, while increasing migration has introduced greater linguistic and cultural diversity (AHEAD, 2022; SOLAS, 2023). In Ireland, inward migration since the mid-1990s has resulted in a more heterogeneous student population, leading to challenges and opportunities for educational institutions. Research indicates that progression rates to higher education for migrant students, including those from non-English speaking backgrounds, are broadly comparable to their Irish counterparts (McGinnity et al., 2023). This diversity underscores the necessity for equitable quality education at institutional and classroom practice levels, aligning closely with the principles of UDL (UNESCO, 2015; United Nations (UN), 2020).

Ireland's education landscape reflects these international commitments to inclusion, with further education and higher education sectors (often collectively referred to as tertiary or post-secondary education) experiencing rapid diversification. Historically, Irish education policies have focused on addressing diversity and inclusion primarily at primary and secondary levels. However, there has been a growing recognition of the need to extend these efforts to tertiary education, including the further education and training (FET) sector, to address barriers such as inaccessible curricula, lack of supports, and systemic inequities (NCSE, 2019; SOLAS, 2020).

Policy informing inclusion and UDL in further and higher education in Ireland.

Policies at both the international and national levels have played a significant role in driving the adoption of UDL. The Salamanca Statement (UNESCO, 1994) and the United Nations Convention for the Rights of Persons with Disabilities (UNCRPD) (UN, 2006) have called for inclusive education systems that support diverse learners. These frameworks have established UDL as a key approach to ensuring accessibility in education. The UN's Agenda 2030 (UN, 2015), particularly the Sustainable Development Goal 4, further underscores the need for inclusive and equitable education. Internationally, UDL has been incorporated into policy frameworks, notably the United States' Every Student Succeeds Act (2015) and Australia's Higher Education Standards Framework (2020). These policies reflect the increasing recognition of UDL as an essential strategy for addressing learner variability and fostering inclusion. CAST's Universal Design for Learning Guidelines 3.0 (2024) further provide a foundational resource for implementing UDL, highlighting its application in reducing barriers and optimising learning environments.

In Ireland, several key policies have shaped the landscape for UDL. The Equal Status Acts (2000- 2000) and the Education for Persons with Special Educational Needs (EPSEN) Act (2004) (currently being reviewed) lay the foundation for inclusive practices by addressing discrimination and ensuring access to resources for students with disabilities. The Irish Disability Act (2005) establishes a legal basis for universal design, defining universal design as a design approach that ensures environments are accessible to the greatest extent possible, irrespective of individual differences. Recent national initiatives, such as the *ALTITUDE Charter for Universal Design in Tertiary Education* (AHEAD, 2024), aim to embed UDL into Irish further and higher education. ALTITUDE provides a strategic framework for integrating UDL into curricula, professional learning, and institutional culture under its teaching, learning and assessment pillar. Similarly, Quirke and McCarthy (2020) highlight the role of the FET sector in promoting UDL through the Conceptual Framework of Universal Design for Learning. These initiatives align with the Future FET Strategy (2020-2024), which prioritises inclusive learning approaches to meet the needs of diverse learner populations.

Educators' UDL attitudes and practice

Educators' attitudes toward UDL play a critical role in determining the framework's success within further and higher education. Flood and Banks (2021) note that while UDL is gaining momentum, many educators remain uncertain about how to effectively implement its principles. Research indicates that educators often exhibit a gap between their theoretical support for inclusive practices and their practical application of UDL principles. Studies such as Lombardi et al. (2011) and Scott (2018) have highlighted this

issue, suggesting that while educators may support the concept of inclusive teaching and UDL, they may not feel equipped or confident enough to implement it fully.

Many educators still perceive UDL as a framework primarily tailored for students with disabilities rather than a universal approach to inclusivity. This perception can limit the broader adoption of UDL principles, as it reinforces a narrow view of the framework's applicability. Research (Izzo et al., 2008; Lombardi et al., 2011) identifies a lack of understanding among educators about how to effectively apply UDL in diverse classroom settings. For example, Lombardi et al. (2011) found that while faculty members generally endorse the philosophy of UDL, their self-reported practices do not always align with its principles. This disconnects points to the complexity of integrating UDL into daily teaching practices and highlights the need for targeted interventions. Thus, many educators express frustration with the ambiguity surrounding UDL implementation, which can lead to resistance or hesitancy in adopting its practices.

Cultural and institutional contexts also shape educators' attitudes toward UDL. Systemic challenges to fostering positive attitudes toward UDL are reflected in the research. Hills et al. (2022) examined faculty perceptions of UDL in higher education and found that many educators value the concept of inclusive teaching but require more institutional support to enact these practices effectively. Similarly, Scott (2018) emphasised the importance of addressing structural barriers, such as inadequate funding and rigid institutional policies, which can negatively impact educators' willingness to adopt UDL principles. Lombardi et al. (2011) found discrepancies between faculty attitudes and self-reported implementation of inclusive practices. Faculty members with prior disability-related training or personal experiences with disability are more likely to positively endorse UDL (Izzo et al., 2008). This trend underscores the importance of structured professional development opportunities. As Quirke and McCarthy (2020) note, professional learning communities and collaborative approaches can help foster a shared understanding of UDL among educators, aligning their perceptions with effective practices.

Encouragingly, there is evidence that attitudes toward UDL are improving as educators gain more exposure to its principles and practical applications. Initiatives such as the *ALTITUDE Charter for Universal Design in Tertiary Education* (AHEAD, 2024) are beginning to address these gaps. Additionally, professional development opportunities, such as digital badges and short courses offered by organisations like AHEAD, SOLAS, postgraduate programmes and micro-credentials are helping to shift educators' perspectives by demonstrating the practical benefits of UDL.

Methods

The intention of this study was to explore the UDL knowledge and practice of Irish educators in further and higher education in Ireland. The research involved using a survey (Appendix 1) that included multiple choice, Likert scale and open-ended question. Designed to ascertain the knowledge and practices of educators, the survey design was adapted from a CAST (2016) survey. The original survey was designed for teaching UDL 2.0 in International Baccalaureate schools. Therefore, it required considerable modifications to contextualise the survey for Irish education system and align it with changes to the UDL Guidelines since UDL 2.0. The survey was piloted in 2021 (n=17). Based on feedback, open-ended questions regarding supports and challenges were removed as respondents believed them to be insufficient to explore those aspects authentically. Thus, this survey focuses on knowledge and practice. In addition to these modifications, changes were made to Likert scale statements, and in some instances new statements were added under each UDL principle to acknowledge changes being proposed for a redesigned UDL 3.0. These modifications were made using the Draft UDL Guidelines 3.O.

The survey consisted of nineteen questions to gather information.

- Two questions on demographics
- Seven questions on knowledge and understanding of UDL.
- Eight questions on applying UDL to practice.
- Two questions for sharing additional informational.

Convenience and snowball sampling was used to invite colleagues through individual emails to complete the survey and share the survey. The survey was also posted on social media. The survey was open from June until November 2024. Sixty-four further and higher education educators responded.

The multiple-choice and Likert scale questions in the survey were summarised, with basic descriptive statistics calculated to offer an overview of participants' knowledge and practice of UDL. For the analysis of open-ended questions, key words and phrases were identified and response frequencies were counted. Themes were developed to structure the data, and these themes and keywords were aligned with the UDL principles and guidelines.

The study and its design received institutional ethical approval. Participation was voluntary and responses were anonymous.

Findings

This survey explores the extent to which respondents from the Irish and further education sector have a knowledge of UDL and were applying it to practice. These findings are reported under the themes:

- Demographics
- Knowledge and understanding of UDL.
- Applying UDL to practice

Demographics

Questions one, two and three were designed to gain insight into the sector and programmes educators responding taught in and the variability of students in their environments.

Educator information

Table 1 shows the education sector and programme breakdown of respondents. The demographics of respondents (n=64) show that 33 educators (51.6%) were teaching in further education, 29 (45.3) taught in higher education universities, one educator taught in the disability sector and one taught in a youth reach setting at the time of response. Their teaching ranged across a diverse range of programmes , including 17 educators (26.6%) teaching literacy and numeracy skills for adults , six (9.4%) teaching on apprenticeship and trainee programmes, six (9,4%) teaching in community education, 13 (20.3%) teaching post leaving certificate programmes, 14 (21.9%) teaching back to education programmes , 25 (39.1%) teaching undergraduate programmes, and 28 (43.8%) teaching and post-graduate programmes .

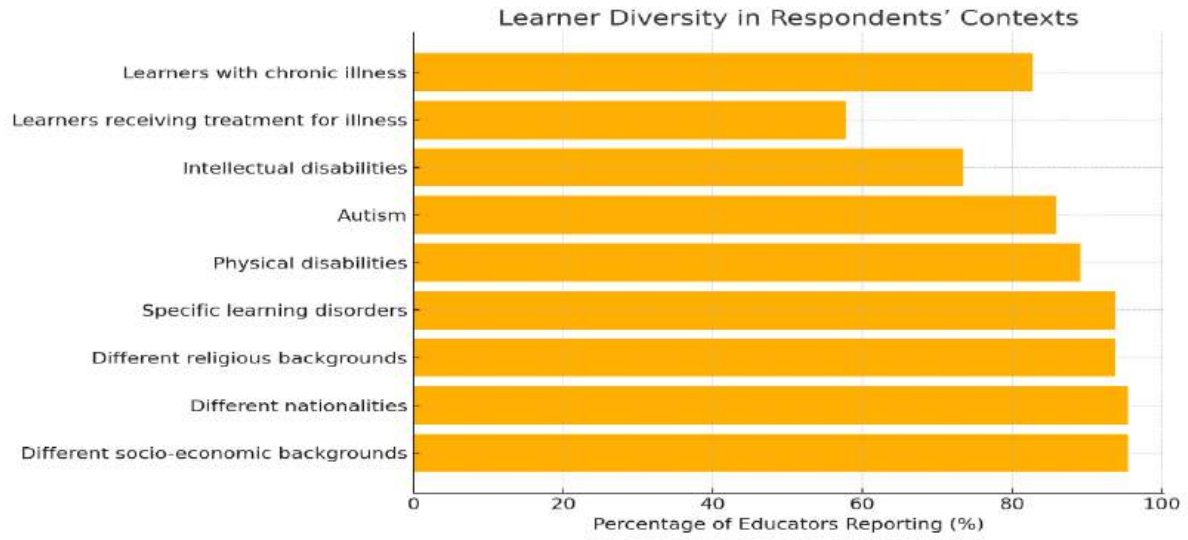
Table 1: *Educator sector and programme breakdown.*

Sector / Programme	Number of Educators	Percentage (%)
Further Education	33	51.6
Higher Education	29	45.3
Disability Sector	1	1.6
Youthreach	1	1.6
Literacy & Numeracy	17	26.6
Apprenticeship/Traineeship	6	9.4
Community Education	6	9.4
Post Leaving Certificate (PLC)	13	20.3
Back to Education	14	21.9
Undergraduate	25	39.1
Postgraduate	28	43.8

Student variability

To understand the diverse learning communities these educators were teaching in, respondents were asked to identify the different types of learners in their organisation, with the option to select multiple types. (Figure 1). The most prevalent category of learner in the educators' settings at this time were learners from different socio-economic backgrounds and learners from different nationalities, each identified by 61 educators (95.5%). This was followed by 60 educators (93.8%) identifying learners of different religious backgrounds in their setting. The most prevalent disability category identified by educators was learners with specific learning disorders and physical disabilities, 60 educators (93.8%) and 57 educators (89.1%) respectively. A high prevalence of learners with Autism and intellectual disabilities was reported, with 55 (85.9%) educators reporting learners with Autism in their organisation and 47 (73.4%) reporting learners with intellectual disabilities. Although learners with illness had the lowest prevalence rate it is significant in the context of this survey's responses. Thirty-seven educators (57.8%) reported teaching learners receiving treatment for illness such as cancer, tumours and heart disease. This number increased to 53 (82.8%) when reporting learners with chronic illnesses in their organisation.

Figure 1: *Learner diversity in respondents' contexts*



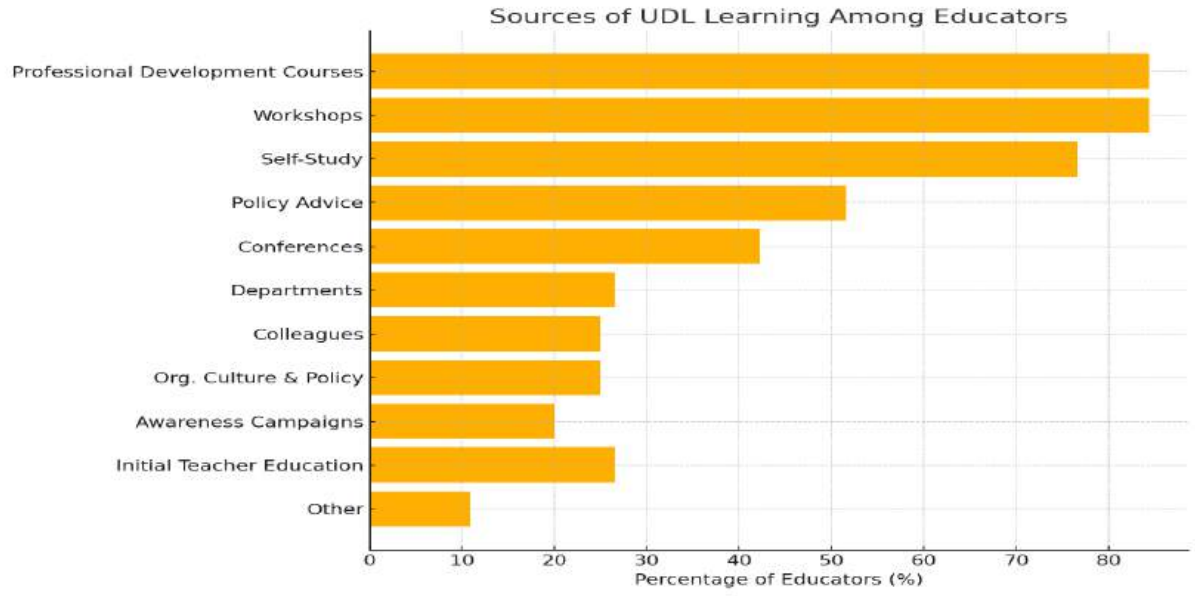
Knowledge and understanding of UDL.

Questions four through eleven were designed to gain insight into educators' knowledge and understanding of UDL. These questions focus on learning more about how educators learn about UDL.

Professional Development in UDL

To gain an understanding of respondent's knowledge and understanding of UDL, the educators were asked if they knew where to avail of professional development in Ireland and how they have learned about UDL (Q8). Fifty-two educators (80%) responded that they knew where to avail of UDL professional development in Ireland. Despite, 12 educators (20%) reporting not knowing where to avail of this professional development in Ireland, answers to the question "I have learned about UDL through…" indicate that all respondents had some level of UDL learning with 80% of educators (52) indicating they learned through a variety of sources (Figure 2.). Most educators learned about UDL through professional development courses, workshops, and self-study with response rates of 54 (84.4%) and 49 (76.6%) respectively. Additionally, 33 educators (51.6%) responded that they read policy advice on UDL while 27 (42.2%) attended conferences. Other sources of professional learning including learning through their departments or from colleagues, organisation culture and policy, and organisation awareness campaigns provided lower levels of learning with responses of 17 (26.6%), 16 (25%) and 13(20.03%) respectively. Initial teacher education programmes also scored low with only 17 (26.6%) responding that they learned about UDL in their training programmes. Seven educators (10.9%) indicated that they learned about UDL in other ways. Three of these listed courses that fall within the category of professional development courses or workshops, two listed postgraduate courses at university, one identified their UDL community as a source of learning, and one learned through lived family experiences with disability.

Figure 2: *Sources of UDL learning among educators who responded.*



When asked to expand on their learning or professional development (Q9) (n=52), 24 educators (46.2%) who knew where to access UDL professional development specifically named AHEAD as a key source of learning. The UDL badges and the ALTITUDE charter offered by AHEAD were frequently highlighted. One educator noted that following their UDL badge journey they have recommended it to colleagues while another responded that having completed AHEAD'S original UDL badge "I *am currently studying UD and Beyond the Classroom. I have the UDL poster displayed on my desk and use the ALTITUDE Charter."* Fourteen educators (21.9%) named initiatives led by Maynooth University in their responses, including the UDL International Symposium considered "*exceptional*" by one respondent, the Education Department's UDL micro-credential and UDL training as part of other programmes in Maynooth University. Additionally, Maynooth's UDL micro-credential programs and workshops by the Centre for Teaching and Learning were mentioned by three respondents affiliated with the university. Eight educators (12.5%) cited organizational supports and programs within their institutions. Conversely, seven educators (10.9%) reported limited or no knowledge of UDL training or support, with comments such as *"not sure where to go," "no information shared by my employer,"* and *"there's a lot of talk about UDL but not much actual demonstration."* One respondent highlighted that while training was offered, it lacked flexibility in scheduling.

Knowledge of UDL

The survey included three questions about educators' knowledge and understanding of UDL.

Firstly, educators were asked to rate their current knowledge of UDL (Q6) from one to five (no knowledge to expert knowledge). Among the respondents (n=64) 33 educators (51.6%) indicated they had proficient knowledge while 19 (29.7%) were building knowledge, seven were at expert knowledge, and five reported they had limited knowledge (Table 2).

Table 2: *Self-reported UDL knowledge rating.*

Knowledge Level	No. of Educators	Percentage (%)
No knowledge	0	0.0
Limited	5	7.8
Building	19	29.7
Proficient	33	51.6
Expert	7	10.9

When asked "what does UDL mean to you?" (Q5) 63 educators (98.4%) responded. Inclusion, equity and equality where themes that resonated with these respondents. One educator described UDL as "*equity, person-centered, focused on inclusion and belonging*." Inclusion of all learners was specifically referenced by 23 educators (36%), using terms such as *"every learner," "all learners,"* and *"tapping into everybody's strengths."* One educator wrote that "*UDL means that students have a better chance at excelling in their knowledge and understanding at 3rd level. It evens the stakes by providing a variety of ways of teaching the same content and giving students the opportunity to demonstrate their learning in a way that works for them*."

The concept of offering (now designing in UDL 3.0) multiple means of engagement, representation, and expression was another prominent theme. Twenty-two educators (34.4%) highlighted the importance of embedding choice and flexibility into teaching, learning, and assessment practices. Examples included taking a *'Plus One'* approach (making one change to your design), creating accessible materials in different formats, and offering alternatives for completing assignments or exams. Furthermore, 10 respondents (15.6%) explicitly referenced removing barriers to learning. Of these, six educators (9.4%) described designing for diverse learners by providing choice, while two (3.1%) emphasised moving beyond the traditional *"one size fits all"* approach. One educator wrote,

> *"UDL goes further than our past understanding of differentiation and makes it important for us as lecturers to proactively ensure that our curriculum, teaching, learning, assessment, and reporting practices are aligned with the diversity, strengths, and needs of individuals in the class."*

However, three educators (4.7%) equated UDL with differentiation and described it as adapting to learners as needed.

To assess their understanding of specific UDL concepts (Appendix 2), educators (n=64) were asked to rate their knowledge of 20 UDL-related statements on a scale from "Yet to begin" to "Excellent" (Q10). Overall, the majority of responses indicated "Proficient" or "Emerging" levels of understanding, with more than 50 educators (78.1%) selecting one of these two levels for most statements. While proficient and emerging levels were predominant, outliers were identified in specific areas. For instance, the statements "How UDL can be used to reduce barriers in the learning environment" and "How to include flexible options and instructional scaffolds for students with physical disabilities" had ratings for "Excellent" that were on par with those for "Proficient" and "Emerging."

However, for the majority of statements, fewer than five educators (7.8%) reported being at the "yet to begin" or "initial stages" of understanding. Other outliers included the statement "How to include flexible options and instructional scaffolds for students'

genders and sexuality," where 42 educators (65.6%) rated themselves as "Proficient" or "Emerging", but 16 educators (25.0%) indicated lower levels of understanding, with eight (12.5%) at the "Initial stages" and eight (12.5%) at the "Yet to begin" stage. Similarly, the statement "How to include flexible options and instructional scaffolds for students with SEN" showed 15 educators (23.4%) at lower levels, with 10 (15.6%) indicating "Initial stages" and 5 (7.8%) selecting "Yet to begin." These findings highlight a general trend of growing proficiency among educators while pointing to specific areas, such as scaffolding for diverse learner identities, where further professional development is needed.

Applying UDL to practice

Engagement with UDL

To gain an understand of the extent to which educators were applying UDL to their practice they were asked to rate their current practice level from "None" to "Always" (Q6) and describe their current engagement with UDL in their learning, teaching and assessment (Q11). Subsequently they were asked to rate their practice from "Never" to "Very often" under the three principles of engagement, representation, and action and expression and give examples of their practice for each one (Q12 through Q17).

The self-rating data (n=64) on educators' application of UDL (Table 3) indicates that the majority of educators applied UDL to their practice at a high frequency. Forty-four educators (68.8%) rated their UDL practice as either "Often" or "Very Often." Specifically, 18 educators (28.1%) rated their application of UDL as "Very Often," while 26 (40.6%) indicated they apply UDL "Often." This suggests that a significant proportion of respondents regularly incorporate UDL into their practice. A further 14 educators (21.9%) selected "Sometimes", indicating occasional application of UDL. These results highlight a generally strong trend of regular involvement among the respondents, with most operating at the higher end of the scale.

Table 3: *Educators' self-reported application of UDL*

Practice Level	No. of Educators	Percentage (%)
Very Often	18	28.1
Often	26	40.6
Sometimes	14	21.9
Rarely	4	6.3
Never	2	3.1

On the lower end of the continuum, four educators (6.3%) reported infrequent use of UDL, and 2 (3.1%) indicated no engagement. These figures highlight a small minority of educators who either do not engage or engage minimally with the activity. The prevalence of ratings in the "Often" and "Very Often" categories reflect a strong commitment to integrating this activity into practice. However, the presence of a small

number of lower ratings suggests the potential for further professional development or support to achieve more consistent engagement across all educators.

When asked to share examples of their engagement with UDL to date (n=57), 43 educators (75%) reported actively applying UDL to their practice. Examples ranged from making teaching materials more accessible to embedding inclusive practices across lessons. One educator noted, "*I employ it on a daily basis in my planning for learning, teaching, and assessment, in my lessons, in planning and designing assessment briefs*." Another stated, "*I provide all materials in more than one format, utilise a flipped classroom approach, and design briefs with options for different assessment formats*." Nineteen educators (33%) reported explicitly applying UDL principles in their module design to support learner variability. This included integrating multiple means of representation, action and expression, and engagement into their modules. For instance, one educator explained, *"I try to ensure a variety of teaching, learning, and assessment approaches within my modules, and each trimester I adopt the Plus One approach, making one change or improvement to my teaching with UDL in mind."*

Developing UDL principles at the programme level was referenced by 10 educators (18%), with respondents citing their involvement in initiatives such as UDL-focused committees and broader organisational planning. One respondent explained, "*I am part of the Active Inclusion Network, where I work on embedding UDL principles across programmes and have set up a community of practice*." Additionally, 12 educators (21%) highlighted the importance of creating safe and supportive learning environments. One educator described it as, "being *led by me, making my class a safer place to learn.*" However, challenges remain, with eight educators (14%) citing limited knowledge or engagement, often due to time constraints or lack of training opportunities. Additionally, while inclusivity is emphasised, some educators highlighted the rigidity of specific curricula, as reflected in the statement: "*The subject I teach is not often flexible... I try to diversify the curriculum with modern examples*." Outliers include limited use of innovative tools like Virtual Reality, which was introduced by one respondent but required significant additional support to ensure successful implementation.

An unexpected response to engagement with UDL was that after describing their engagement three educators linked these engagements to better student outcomes. One reflected that "*the outcome for students is always worthwhile from the student perspective based on feedback, and from my perspective as it gives me an opportunity to continuously improve teaching and learning approaches*." This diversity in responses underscores both the growing adoption of UDL principles and the areas for improvement to achieve more consistent integration across educational settings.

The UDL Principles

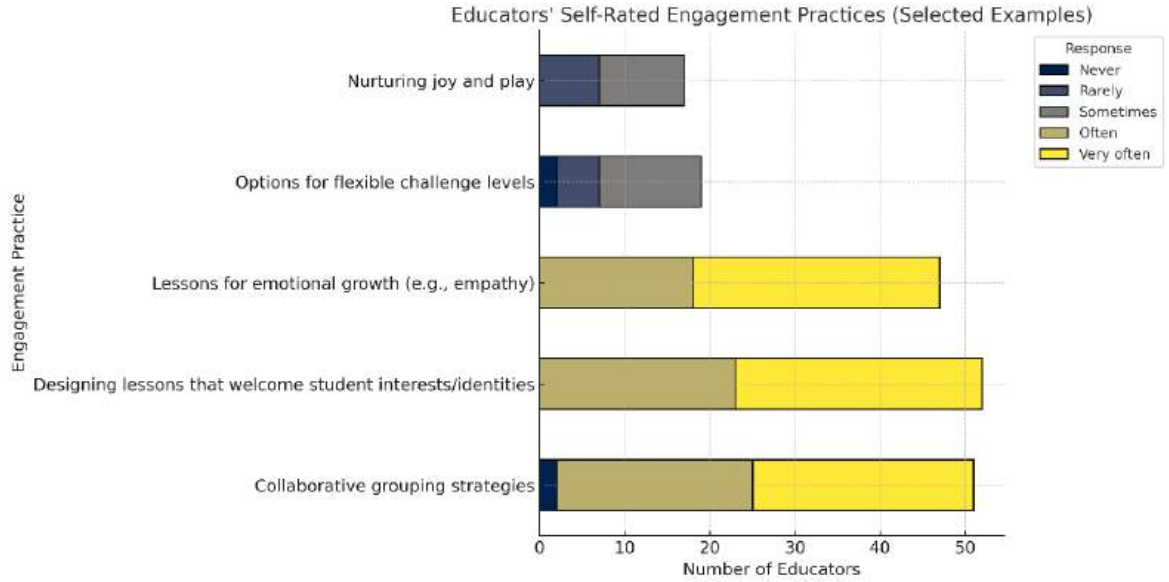
Having answered these questions on their general application, the next six questions focused on gaining an understanding of educators' application of each principle, engagement, representation, and action and expression. Educators were asked to respond to principal statements and rate how often (never to very often) they applied that practice to their learning, teaching, and assessment. Each set of principle statements was followed by inviting educators to share an example of an instructional strategy they use in relation to the preceding principal statements.

Engagement

An analysis of educators' (n=64) self-rating of Engagement statements (Q12) showed that a significant proportion of respondents consistently engaged in strategies that prioritize learner engagement and adaptability, as indicated by high frequencies of "Very often" and "Often" responses across most Engagement statements (Appendix 3). For example (Figure 3), 26 educators (40%) reported the use collaborative grouping strategies "Very often," with slightly less, 23 (35.9%) using them "Often." Similarly, 29 educators (45.3%) reported designing lessons that welcome students' interests and identities "Very often," while 23 (35.9%) did so "Often." Key areas of emphasis include providing action-oriented feedback, fostering student self-belief, and designing lessons that offer opportunities for emotional growth, with 29 educators (45.3%) creating lessons for emotional growth (e.g., practicing empathy) "Very often," and 18 respondents (28.1%) doing so "Often."

However, there are areas with relatively lower engagement, such as incorporating options that let students choose their level of challenge. Five educators (7.8%) reported doing this "Rarely," and 12 educators (18.8%) reported doing this "Sometimes." Similarly, when responding to the statement about nurturing joy and play in learning shows seven educators (10.9%) reported "Rarely," and 10 (15.6%) reported "Sometimes." Additionally, outlier responses like "Never" are observed, albeit in small proportions, such as two educators (3.1%) who reported "Never" including flexible challenge options or collaborative grouping strategies. These insights suggest areas for professional development and targeted improvements in teaching strategies to ensure a more consistent application of inclusive and engaging pedagogical practices through the UDL principle of Engagement.

Figure 3: *Educators' self-rated engagement practices (selected examples discussed above).*



When asked to give examples of instructional strategies used to support the principle of Engagement (Q13), educators (n=57) reported a range of instructional strategies, with a focus on providing choice, fostering reflection, and nurturing emotional engagement. A recurring theme in educators' responses (35%) is the incorporation of student choice. For example, one educator reported, "*I provide students with a choice in terms of how they engage with activities, such as working individually or collaboratively*." Similarly, strategies like gamification and scenario-based learning were reported as widely used, with one educator explaining, "*I try to add gamification elements to lessons and provide scenario-based learning opportunities to deepen engagement*." Another notable trend is the emphasis of educators (20%) on emotional well-being and empathy, exemplified by a teacher who shared, "*I asked students how they were feeling using an anonymous tool during a stressful period, creating a safe space for emotional expression and reflective practice*."

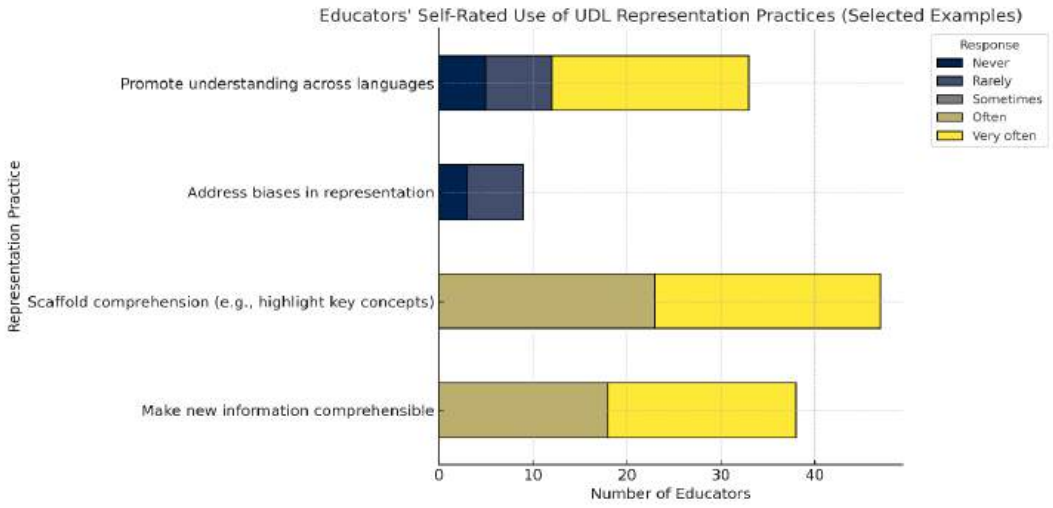
However, certain responses focused on assessment design and providing lesson materials in multiple formats. While impactful, these examples primarily address Representation or Action and Expression rather than Engagement. For instance, while reflective practices and formative feedback are commonly emphasised, some responses, such as "I *invest a lot of time in annotations and examples on students' drafts*," primarily align with Action and Expression. Similarly, efforts to scaffold content through visual or auditory formats, like "*I send slides with Alt text and record lectures for rewatching*," support accessibility and Representation but diverge from engaging students in active, participatory ways.

Representation

Based on the data from educators'(n=64) self-rating of Representation statements (Appendix 4), several key trends and insights emerge regarding instructional strategies and lesson design practices aligned with the principle of Representation. A significant proportion of educators reported consistently engaging in practices aimed at promoting understanding and inclusivity. For instance (Figure 4), 20 educators (33.3%) responded that they **use** strategies to make new information comprehensible for every student "Very often," while 18 (30.0%) reported doing so "Often." Similarly, scaffolding comprehension strategies, such as highlighting key concepts, are used "Very often" by 24 educators (40.0%) and "Often" by 23 (38.3%). These trends indicate a strong commitment among respondents to making content accessible and comprehensible.

However, certain practices show relatively lower engagement with aspects of the principle of Representation, with higher proportions of "Sometimes," "Rarely," or "Never" responses. For example, six educators (10%) responded "Rarely" addressing biases and three (5%) reported "Never" doing so. Strategies to promote understanding across languages also show a gap, with seven educators (11.7%) selecting "Rarely" and five (8.3%) selecting "Never." Additionally, while cultivating understanding across languages and dialects was reported as used "Very often" by 21 educators (35%), it is reported as "Rarely" or "Never" applied by 12 educators (20%), indicating room for growth in linguistic inclusivity. These insights highlight strengths in some inclusive practices while pointing to opportunities for improvement in areas related to bias and linguistic diversity.

Figure 4: *Educators' self-rated used of Representation practices (selected examples discussed above)*



When asked to give examples of instructional strategies used to support Representation, educators (n=47) responded with examples of diverse practices aligned with Multiple Means of Representation. Thirty-five educators (75%) responded that they integrate multimedia and scaffold resources to present information, ensuring accessibility for learners with diverse needs. For instance, one respondent shared, *"I use live captioning with PowerPoints, speak clearly, and use images as well as text,"* reflecting a thoughtful approach to representation for learners with hearing impairments. Another noted, *"I make screencasts for my Business English lessons, allowing learners to review content they missed or consolidate their understanding."*

Several examples (19; 40%) demonstrate efforts to support understanding across languages and cultural contexts. One educator explained, *"I explore root words and similarities across Irish, Welsh, and other languages,"* while another emphasised, *"I am mindful to use images that are representative of the students in my lecture and beyond, being aware of culture, ethnicity, and race."* Additionally, 20% (nine) of responses reflect efforts to connect learning to real-world contexts, such as "*using food-related phrases to help learners apply consistent language patterns across contexts."* However, as with Engagement, some examples diverge from the Representation principle, leaning more toward Engagement or Action and Expression. For example, "*I co-create assessments with learners to adapt the language and representation to their preferences*" aligns more with Action and Expression. Similarly, "*I encourage learners to engage in group discussions about how phenomena in the classroom are reflected in the outside world*" primarily relates to Engagement rather than Representation.

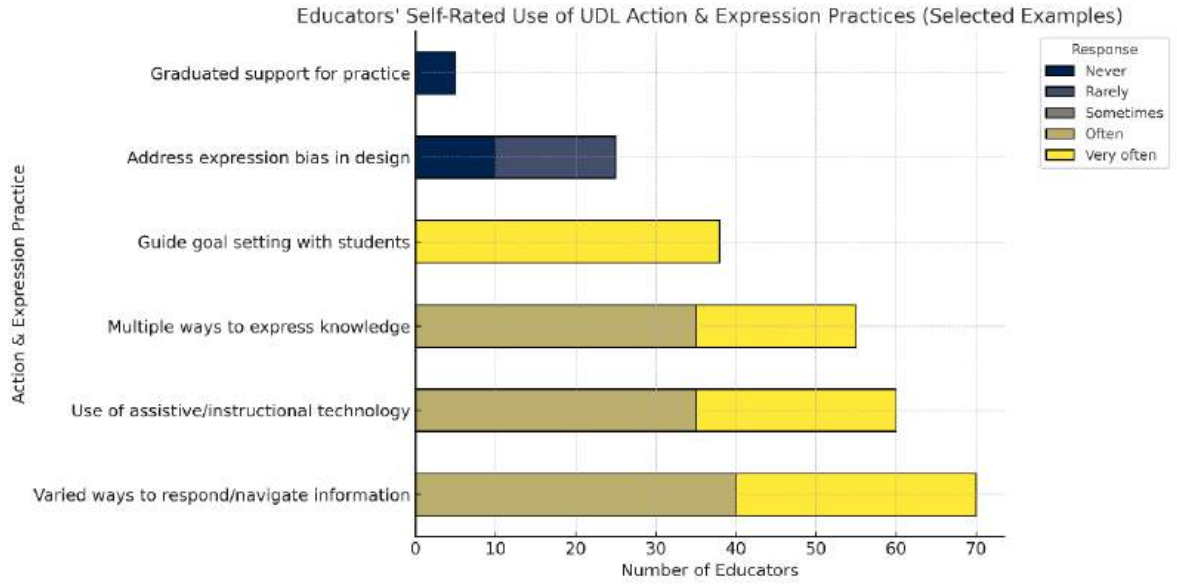
Action and Expression

An analysis of educators' (n=64) self-rating of Action and Expression statements (Q16) reveals several patterns and trends in how educators support their students' ability to act on, communicate and demonstrate their knowledge, understanding and skills within and at the end of their course learning (Appendix 5). Educators demonstrate a strong emphasis on using varied approaches to support student engagement, with 44 educators (70%) consistently reporting providing diverse ways for students to express knowledge using multiple tools and media. For example (Figure 5), 38 educators (60%) reported frequently (either "Very often" or "Often") guiding their students to set meaningful learning goals, ensuring active participation in the learning process. A significant proportion of responses reflect frequent use of strategies that facilitate students to engage with learning in varied ways. For instance, 30 educators (46.9%) indicated "Very Often" for "My students have varied ways to respond to and navigate information within a lesson"," while 40 (62.5%) responded "Often," highlighting a commitment to diverse instructional approaches.

Similarly, the use of assistive and instructional technology appears well-embedded in practice. Twenty-five educators (39.1%) selected "Very often", and 35 educators (54.7%)

selected "Often" using assistive technology. Responding to the statement "I present my students with more than one way to express their knowledge, understanding, values, and skills" 20 educators (31.3%) reported "Very often", and 35 educators (54.7%) reported "Often." This emphasises the integration of flexibility into assessments. However, less frequent practices include choices within lesson designs addressing biases, where 15 educators (23.4%) reported "Rarely" or "Never," suggesting a potential area for growth. Outliers include rare use of strategies that address biases related to modes of expression, with 10 educators (15.6%) reporting "Never" for this practice. Additionally, the use of graduated supports for practice showed five educators (7.8%) selecting "Never," potentially highlighting challenges in scaffolding students' learning effectively.

Figure 5: *Educators' self-rated use Action and Expression practices (selected examples discussed above).*



When asked to give examples of instructional strategies used to support Action and Expression (Q17) , educators (n=42) responded with examples that demonstrate a strong emphasis on providing flexibility, scaffolding, and a variety of modalities for students to express their knowledge, understanding and skills and to actively engage with learning. Examples given by twenty-nine educators (70%) showcase the use of flexible assessment options and multimodal resources. Several educators highlighted the use of flexible assessments that allow students to choose how they demonstrate their knowledge. For instance, one educator stated, *"To connect with student interest, I allow flexibility and choice on assessment topics. They can pick an area they are interested in to write, present, or speak about."* Similarly, problem-based learning and co-creating assessments were prominent, as reflected in the statement, *"When introducing assessments, I co-create them with learners, showing them that their way of representing*

knowledge is as valid as traditional methods." Scaffolding and multimodal resources are another key trend. For example, one educator shared, *"When teaching the complex concept of reflective writing, I provide guiding questions, template worksheets, and options for free form writing for advanced learners."* Additionally, multimedia tools such as screencasts, captions, and audio formats were frequently used, as highlighted by, *"I use live captions, closed captions on all videos, and glossaries to support understanding."*

However, there are areas with lower adoption rates, such as addressing implicit biases in expression. Only a few responses (4; 10%), such as *"I invite guest speakers and include texts that represent different perspectives,"* explicitly mention addressing biases related to communication modes. Additionally, practices related to graduated fluency supports were less frequently mentioned.

Challenges in implementing UDL.

While educators (n=64) were not asked directly about challenges to implementing UDL, the data findings suggest there are several challenges facing educators.

A lack of comprehensive training and professional development opportunities emerged as a prominent barrier to UDL implementation. While 52 educators (80%) reported knowing where to access UDL professional development in Ireland, a smaller proportion of educators (26; 40.6%) actively engaged in it. One educator remarked, *"I have very limited experience, just one CPD course,"* while another added, *"No formal training, but I provide all materials in more than one format."*

Eight educators (14%) educators cited lack of time and scheduling as a challenge, noting, *"While UDL training was provided, there was no flexibility with dates or times*." A lack of institutional support, including organisational awareness and policy alignment, was highlighted by eight educators (14%) One noted*, "No information is being shared by my employer."* Finally, 12 educators (20%) mentioned challenges related to accessing resources and adapting UDL principles to their teaching environments. For example, one educator stated, "*There is a lot of talk about UDL, but I find there is not much actual demonstration of it*." This lack of support hinders the ability to implement UDL systematically across institutions. This gap highlights the need for targeted training and awareness opportunities.

Discussion

The findings from this study contribute to the growing understanding of the adoption and application of UDL within the Irish further and higher education landscape. The discussion highlights three main areas: educators' knowledge and practice of UDL, the implications for practice, and implications for future research.

Educators' knowledge and practice of UDL

The study revealed that while a significant proportion of educators report engaging with UDL principles, there remains variability in their understanding and application. Most educators who responded indicated a moderate to proficient knowledge of UDL, with a focus on flexibility in engagement, representation, and action and expression strategies. However, specific areas, such as addressing biases and promoting linguistic inclusivity, showed lower engagement, indicating a need for targeted professional development. This aligns with Lombardi et al. (2011), who found discrepancies between educators' theoretical endorsement of inclusive practices and their implementation in classroom settings.

The frequent use of strategies such as providing choice in assessment and offering multimodal resources given as examples across the three UDL principles suggests that educators are increasingly embedding UDL principles into their practice. However, challenges such as limited time, resources, and institutional support hinder consistent application. These findings echo Hills et al. (2022), who emphasised the need for systemic institutional support to address barriers to UDL implementation. Such support would also help develop educators' understanding of how to apply specific strategies aligned to specific considerations in addition to helping them recognise where inclusive approaches they are already using support individual guidelines and considerations. This would allow for a more conscious application of practice aligning with the UDL Guidelines.

These findings reflect broader literature that points to the tension between inclusive ideals and systemic limitations (Scott, 2018; Altes et al., 2024). For instance, while many educators identify as inclusive, a lack of confidence or clarity about how to implement UDL results in superficial or inconsistent practice. The lower levels of understanding around scaffolding for learners' gender, language, and socioeconomic backgrounds also mirror the knowledge gaps highlighted by Izzo et al. (2008), reinforcing the need for more nuanced, intersectional professional learning.

Interestingly, the survey revealed that much of the educators' UDL knowledge comes from informal or voluntary learning—such as self-study, communities of practice, and initiatives by AHEAD and Maynooth University—rather than through structured institutional pathways. This confirms Quirke and McCarthy's (2020) suggestion that Irish educators often rely on self-directed learning to fill professional development gaps, and it underlines the importance of embedding UDL within formal professional learning frameworks and initial teacher education.

Moreover, respondents' emphasis on student voice, co-creation, and empathy-based strategies echoes emerging models of culturally responsive UDL (Fovet, 2020; Garrad & Nolan, 2023), which emphasise that inclusive design must be flexible, relationship-centred, and community-informed. These examples show that, even

without systemic mandates, educators are innovating at classroom and programme levels—highlighting the untapped potential of UDL when adequately supported.

Implications for practice

The study underscores the importance of structured professional development to bridge gaps in knowledge and practice. While 52 educators (80%) knew where to access UDL training, only a smaller proportion actively engaged with it. This suggests a potential mismatch between the availability of training and educators' capacity to participate, likely due to time constraints and rigid scheduling. Moreover, the emphasis on student choice and flexible assessments demonstrates the transformative potential of UDL in fostering inclusive learning environments. By addressing barriers such as inaccessible curricula and limited scaffolding for diverse learner identities, educators can better support the diverse needs of their students. The findings also suggest that embedding UDL principles at the programme and institutional levels can create more cohesive and inclusive learning environments, resonating with the ALTITUDE Charter for Universal Design in Tertiary Education pillar of learning, teaching and assessment (AHEAD, 2024).

These insights suggest several actionable recommendations for Irish policy and institutional practice:

- Mandate institutional UDL implementation plans that include resourcing, strategic planning, staff support and UDL training through continuous professional development, ensuring UDL is embedded across disciplines and not optional.
- Fund and establish UDL Champions in every tertiary institution who can lead implementation and mentor peers, as proposed by ALTITUDE (AHEAD, 2024).
- Include UDL indicators in quality assurance processes, such as program validation, module review, and staff evaluation.
- Support cross-sector communities of practice to enable knowledge exchange between FE and HE, and between institutions of different sizes and missions.
- Develop national guidelines for inclusive curriculum and assessment design, co-authored with educators, students, and disability and diversity advocates.

Without these system-level changes, the burden of inclusive design will continue to rest disproportionately on individual educators, risking inconsistent application and burnout.

Limitations and recommendations for future research

This study is a small sample (n=64) of further and higher education educators in the Republic of Ireland. Therefore, it is not intended to be representative of the further and higher education sector in Ireland. Nor does it intend to present a definitive statement

on the UDL knowledge, understanding and practices at sector level. Rather it aims to add to the existing literature thus contributing to more global perspectives, specifically addressing the gap in this research in the Irish sector. Responses are self-reported within a survey and data was not gathered to further explore educators' claims. Subsequent studies should recruit a larger sample size and consider including focus group interviews and teaching observations. A case study approach would allow deep exploration at individual institution level and comparison between different institutions, and between the further education and higher education sectors.

Several areas for future research emerge from this study. First, a deeper exploration of the barriers to UDL implementation, particularly institutional and systemic challenges, could provide valuable insights into how to support educators more effectively. Including national focus groups and institutional case studies would support this deepening knowledge. Second, longitudinal studies examining the impact of UDL training and implementation on student outcomes would provide evidence of the framework's efficacy. Third, research into the role of technology and digital tools in facilitating UDL practices could inform strategies to enhance accessibility and engagement.

This study highlights the progress made in implementing UDL into Irish further and higher education while identifying critical areas for improvement. By addressing these gaps through targeted professional development, institutional support, and policy interventions, the potential of UDL to foster inclusive and equitable education can be fully realised.

Conclusion

This study highlights the growing awareness and application of UDL principles among Irish further and higher education educators. It affirms international research highlighting the gap between inclusive intentions and practice, and it identifies professional learning, institutional leadership, and policy alignment as critical levers for change. While the small sample size limits generalisation, the findings offer important signals about the strengths and challenges of UDL implementation in Ireland.

To bridge the divide between values and action, a shift is needed—one that goes beyond individual goodwill to systemic, supported, and sustainable approaches. Embedding UDL within the further and higher education sector in Ireland and globally, recognising educators' efforts, and fostering inclusive cultures across institutions can ensure that UDL moves from promise to practice. As learner diversity grows, so too must our commitment to designing education that embraces variability as a strength, not a barrier.

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APPENDICES

Appendix 1: *(Survey removed at request of author)*

NOTE: For a copy of the survey used in this study, please contact the author directly.

Appendix 2: *Educators' Self-Rated Understanding of UDL Concepts*

UDL Statement	Yet to begin	Initial stages	Emerging	Proficient	Excellent
The three principles of UDL	3	4	15	28	14
How to apply the UDL principles to my learning, teaching, and assessment	2	5	18	30	9
The three learning networks of the brain (recognition, strategic, affective networks) that are associated with UDL	9	8	26	14	7
How UDL can be used to reduce barriers in the learning environment	3	3	15	27	16
How to use UDL during the lesson planning process	4	4	17	28	11
How UDL can be used to create inclusive learning environments	2	5	18	24	15
How to design instruction to address learner variability during the lesson planning process	4	3	23	25	9
How to include flexible options and instructional scaffolds for students with physical disabilities	6	10	17	23	8
How to include flexible options and instructional scaffolds for students with SEN	5	10	19	20	10
How to include flexible options and instructional scaffolds for students from a diversity of race and ethnic backgrounds	6	7	24	20	7
How to include flexible options and instructional scaffolds for students' genders and sexuality	8	8	23	19	6
How to include flexible options and instructional scaffolds for students from a diversity of socio-economic backgrounds	4	6	26	20	8
How to include flexible options and instructional scaffolds for students learning through an additional language	7	8	18	22	9
How to include flexible options and instructional scaffolds for a diversity of student nationalities	6	6	19	24	9
How to include flexible options and instructional scaffolds to respect students' identities and remove stereotypes	4	7	24	22	7
How to include flexible options and instructional scaffolds for students who are exceptionally able/gifted and talented	9	9	22	19	5

How to use digital media and technology tools to create accessible and inclusive learning environments	4	6	17	29	8
How to use tools other than technology to create inclusive and accessible learning environments	5	6	19	26	8
How to design lessons/activities that welcome interests and identities	2	5	19	28	10
The alignment between social justice, equity and UDL	4	4	22	21	13
Describe your engagement with UDL so far	0	0	0	0	0
I plan lessons with learner variability in mind	0	0	0	0	0
When I design a lesson, I clarify the learning goal(s) for each lesson/activity	0	0	0	0	0
When I design a lesson, I consider how I can include flexible instructional strategies	0	0	0	0	0
When I design a lesson, I consider flexible assessments that give students varied way	0	0	0	0	0
I include options that let students make choices during a lesson	0	0	0	0	0

Appendix 3: *Educators' self-reported application of Engagement in their practice*

UDL Engagement Practice	Never	Rarely	Sometimes	Often	Very often
I plan lessons with learner variability in mind	9	5	22	60	41
I clarify the learning goal(s) for each lesson/activity	3	4	30	54	46
I include flexible instructional strategies	2	4	35	65	31
I include flexible assessments	1	7	53	43	33
I let students make choices during lessons	1	9	58	42	27
I make lessons relevant and authentic	0	1	35	71	30

I include a range of challenge options	0	11	59	45	22
I use collaborative grouping strategies	1	9	57	44	26
I provide action-oriented feedback	5	8	45	55	24
I foster student self-belief and confidence	2	1	33	61	40
I support student self-assessment and reflection	3	8	53	51	22
I nurture joy and play in learning	3	3	35	60	36
I guide students in setting expectations and motivation	2	12	49	46	28
I support awareness of self and others	3	6	40	65	23
I cultivate compassion and empathy	2	5	29	67	34

Appendix 4: *Educators' self-reported application of Representation in their practice*

UDL Representation Practice	Never	Rarely	Some-times	Often	Very often
Provide options for perception (multiple formats)	3	7	44	52	31
Clarify key terms, vocabulary and symbols	3	3	38	60	33
Promote understanding across languages	9	21	50	38	19
Make new information comprehensible	4	5	34	60	34
Provide scaffolds for comprehension	3	6	28	63	37
Support knowledge transfer and generalisation	3	5	37	57	35
Choose inclusive media/tools	6	8	55	41	27
Cultivate multiple ways of knowing	4	10	50	48	25

Appendix 5: *Educators' self-reported application of Action and Expression in their practice*

UDL Action & Expression Practice	Never	Rarely	Some-times	Often	Very often
Students respond/navigate info in varied ways	5	8	56	43	25
Access to instructional/assistive technology	4	19	44	35	35
Use of multiple media to express learning	8	18	59	27	25
Practice skills they are expected to master	3	3	47	54	30
Variety of ways to express knowledge	4	10	55	48	20
Support to develop skills over time	7	20	54	35	21
Monitor their own progress	4	16	57	40	20
Creativity and choice in composition	5	10	53	43	26
Support to develop skills over time (dup)	5	21	61	32	18
Co-design learning experiences	17	30	53	21	16

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Enabling Accessible Blended Learning for Equity: A Case of a First-Year Accounting Course at the University of Cape Town

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ABSTRACT

The COVID-19 pandemic necessitated a shift to online teaching at the University of Cape Town (UCT), compelling both students and faculty to adapt to remote learning. Upon returning to campus, the large first-year accounting course, Financial Reporting 1 (FR1), did not revert fully to in-person classes but instead leveraged the online tools and strategies developed during the pandemic to establish a blended learning environment. Concurrently, UCT's Centre for Innovation in Learning and Teaching (CILT) created the Enabling Accessible Blended Learning for Equity (ENABLE) framework to assist faculty in integrating accessibility principles, particularly Universal Design for Learning (CAST, 2018), into their in-person and blended learning strategies. This paper presents a comparative analysis of the FR1 course through the lens of the ENABLE framework as one way to validate the framework and to make visible the implicit and explicit inclusive blended learning principles and strategies adopted in the FR1 course. It presents one example of best practice related to deliberative course planning, student-centred learning, responsive teaching and online engagement, flexible assessment and feedback, expansive evaluation and reflection, accessible course materials and technology, and unambiguous communication.

Keywords

Universal Design for Learning, Accounting, ENABLE framework

INTRODUCTION

The COVID-19 pandemic compelled residential institutions such as the University of Cape Town (UCT) to shift to online teaching and learning, as both students and lecturers were required to work remotely. Upon returning to campus, most courses reverted to pre-pandemic formats, with in-person classes resuming, supplemented by only minor online engagements. However, select courses, such as the large first-year accounting course, Financial Reporting 1 (FR1), used online capabilities and tools honed during the pandemic to establish a blended learning environment, presenting students with a mix of online and in-person experiences. The merits of the blended learning model developed for the FR1 course have been well established (Winfield, 2023; Winfield & Whitelaw, 2024) and are detailed in the section below entitled “the blended learning case”.

Entirely separately from the development of the FR1 course, the Enabling Accessible Blended Learning for Equity (ENABLE) framework (Karassellos, Small, Nwanze, Hamman & Hodgkinson-Williams, 2024) was created by the Redesigning Blended Courses (RBC) project, overseen by the Centre for Innovation in Learning and Teaching (CILT) at UCT. Originating in the midst of the COVID-19 crisis and launched shortly thereafter, this framework was developed to support UCT lecturers in integrating accessibility principles, namely Universal Design for Learning (CAST, 2018), into their blended learning methodologies. The key purpose of the ENABLE framework is to assist lecturers to see how issues of inclusivity and equity are not merely cursory additions but integral to the entire course design and development process. Inclusivity in higher education refers to the "quality of education and non-discrimination, seeking to promote the access, permanence, and successful completion of the education process for all students, regardless of their particular characteristics" (Solis-Grant, et al., 2023, p.1). In South Africa inclusivity refers particularly to race, language, disability status, and cultural diversity. Equity in higher education refers specifically to ensuring fair access and participation for all students by addressing systemic barriers and imbalances such as socioeconomic inequalities, urban-rural divides, and disabilities, as emphasized in Education White Paper 6 (Department of Education, 2001).

The framework was co-developed by the second author, Cheryl Hodgkinson-Williams, an emeritus associate professor specialising in online learning, and a team of learning designers from CILT, as well as experts from the Disability Studies in the Faculty of Health Sciences at UCT. One approach to validating the utility of the ENABLE framework has already been completed: an expert evaluation conducted in March 2024. This paper presents a second approach: contrasting the framework with an example of successful blended learning in practice, namely the FR1 course.

The first author, Jimmy Winfield, was primarily responsible for developing the blended offering of the FR1 course. To ensure full disclosure, Cheryl and Jimmy had no prior engagement before the study commenced, and Jimmy was kept out of the loop regarding the development of the ENABLE framework.

The key research questions that guided our reflections for this paper are as follows: (1) To what extent does the ENABLE framework align with the course design of the FR1 course; and (2) Which aspects of the FR1 course could inform the development of the ENABLE framework? First, however, a brief explanation of some key concepts that underpin this paper is necessary, namely blended learning and the curriculum and course design concepts that inform the ENABLE framework. This paper will now explore blended learning as a foundational approach bridging emergency remote teaching to inclusive strategies in blended learning highlighted in the ENABLE framework.

Blended learning

There are many definitions of blended learning (see Alammary, Sheard & Carbone, 2014), but a seminal explanation is provided by Müller and Mildenberger:

> [Online] technologies are primarily used for virtual and asynchronous learning, while integration with face-to-face classroom instruction is referred to as blended learning. Blended learning is often used interchangeably with terms such as hybrid, mixed-mode, or flexible learning. (2021, p.2)

Notwithstanding other definitions, the RBC team developed a working definition of blended learning as:

> an educational approach that combines in-person class interaction with online engagement through digital platforms and tools, allowing for increased access, flexibility, participation, and customisation of the learning experience[1].

Nevertheless, there is a growing acknowledgement that the binary distinction between online and in-person education is no longer tenable, as modern university education incorporates digital elements, even if only in the form of course websites, email notifications, or links to online resources. Digitally-enabled learning (UCT Vision 2030) combines in-person interactions with online engagement, tailored to specific academic timelines. In other words, digitally-enabled learning refers to education supported and enhanced by digital tools, technologies, or platforms to improve teaching and learning experiences across various settings. The exact configuration of digital components may be influenced by factors such as geographic proximity, synchronicity, and the extent to which online tools are employed to curate resources and facilitate communication, learning, teaching, assessment, and evaluation.

[1] ENABLE: Blended Learning

Framework to understand the form of blended learning

As an integral component of the RBC project, the team developed a framework that harmonised the principles of Universal Design for Learning (UDL), specifically the CAST UDL Guidelines, with curriculum and learning design processes for both in-person and online higher education settings, drawing upon curriculum design theory (e.g., Barnett, 2009; Biggs, 2003; Schwab, 2013; Wiggins & McTighe, 2005) and learning theory (e.g., Ausubel, 1968; Bandura, 1965; Gagné, 1985; Lave & Wenger, 1991).

By drawing upon these theories and practices, the RBC project aims to inspire lecturers to think practically about inclusivity and equity. As such, it incorporates a variety of perspectives in their curriculum selection, in their course preparation, materials and tools, student learning, communication, in-person teaching and online engagement strategies, assessment design, feedback mechanisms, evaluation methods, and reflection practices.

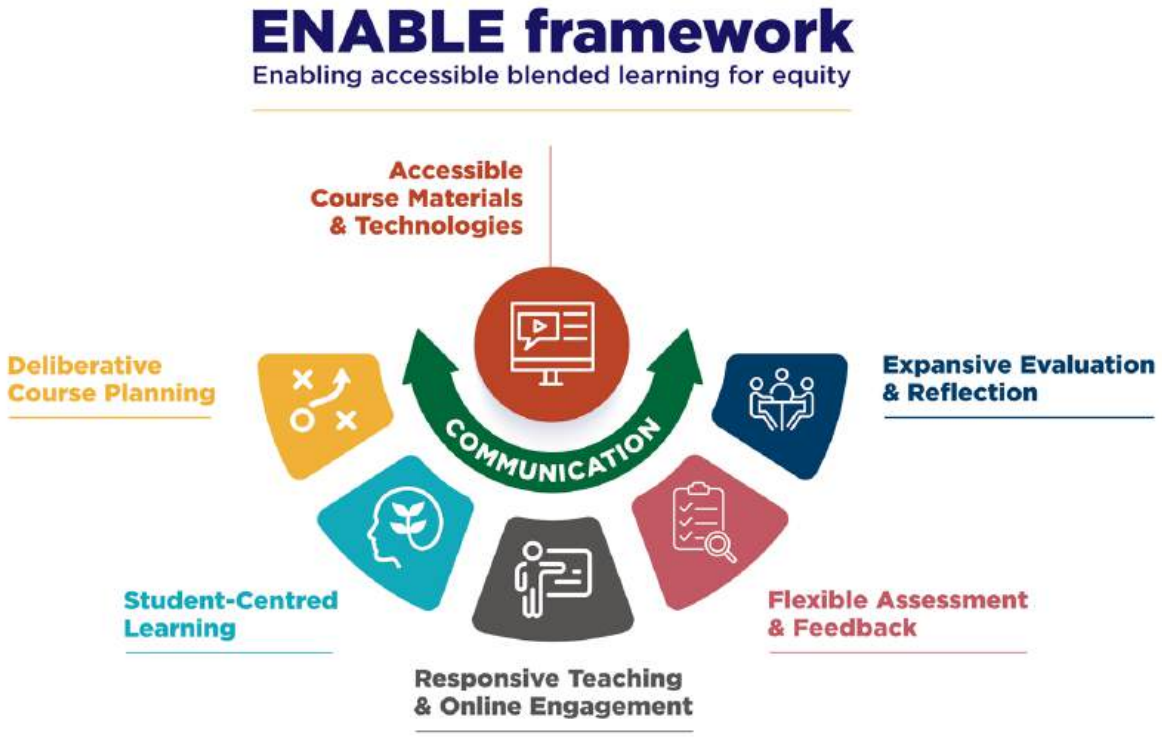
ENABLE framework

The Enabling Accessible Blended Learning for Equity (ENABLE) framework consists of seven key components that foreground inclusivity and equity, namely:

- Accessible materials using appropriate technologies
- Deliberative course planning
- Student-centred learning
- Responsive teaching
- Flexible assessment and feedback
- Expansive evaluation and reflection
- Unambiguous communication

It is supported by a dynamic set of documents, designed to be expanded, and refined over time through the incorporation of UCT examples and templates that can be adapted and enhanced to meet the specific needs of different institutions and learning contexts. By providing a comprehensive set of guiding principles and practical strategies, the ENABLE framework (Figure 1) aims to promote inclusivity, equity, and accessibility in blended learning environments.

Figure 1: *ENABLE framework*



The UDL principles incorporate various checkpoints which are specific, concrete strategies or examples that academics can use when designing their teaching. The checkpoints illustrate how all students can readily access and utilise the resources and tools needed to showcase their learning in the most effective manner. Relevant checkpoints are identified in the description of the elements in the ENABLE framework below:

- **Accessible materials using suitable technologies for all components of a course** refer to proactive steps taken to develop accessible materials and incorporate appropriate technologies that are user-friendly, easy to understand, and inclusive for a wide range of students, aiming to achieve universal accessibility to the greatest extent feasible. It is described first, but it pertains to all the following elements.
- **Deliberative course planning** can be defined as a thoughtful and systematic approach to designing an academic course that prioritises the diverse needs, experiences, and perspectives of a range of stakeholders, including students, fellow academics, tutors, recent graduates, and potential employers, to create an inclusive and responsive learning environment.
- **Student-centred learning** is an approach that focuses on how students can effectively engage with diverse perspectives on course content while considering their individual preferences and constraints. This approach aligns

with the UDL principle of Multiple Means of Engagement, which highlights the importance of offering various methods to engage students effectively.

- **Responsive teaching and online engagement design** refer to the strategies employed by lecturers and tutors to tailor their support effectively to the individual needs, abilities, and interests of students, whether in-person or online. This approach involves recognising and valuing the diverse backgrounds of students—including culture, language, and circumstances—and then customising teaching methods accordingly. Responsive teaching and online engagement design align with the UDL principle of Multiple Means of Representation, which emphasises the importance of presenting information in various formats to accommodate different learning preferences and needs.
- **Flexible assessment and constructive feedback** are intentionally integrated into the ENABLE framework to highlight the availability of diverse assessment options for all students, enabling them to choose the most suitable methods for demonstrating their learning. To maximise the effectiveness of assessment, this approach encourages lecturers to provide relevant, constructive, flexible (Cook, 2001), accessible, meaningful, and timely feedback, aligning with the UDL checkpoint aimed at increasing mastery-oriented feedback (Checkpoint 8.4).
- **Expansive evaluation and thoughtful reflection** are regarded as a synergistic pair within the ENABLE framework, designed to maximise the value and impact of comprehensive and rigorous evaluations conducted by students, tutors, lecturers, examiners, and others. This process also emphasises insightful and judicious reflective practice (Schön, 1991) by lecturers and tutors, benefiting both current and future student cohorts.
- **Clear, regular, and unambiguous communication** is the cornerstone of a well-designed blended learning experience, serving to connect the various stages of course development, planning, learning, teaching, online engagement, assessment, feedback, evaluation, and reflection. By offering understandable, frequent, and straightforward communication, lecturers can cultivate a collaborative and supportive learning environment that encourages active student participation and contribution, also referred to as “active learning” (Bonwell & Eison, 1991).

The blended learning case: Financial Reporting 1

To confirm the efficacy of the ENABLE processes and pinpoint any potential shortcomings that the framework might have overlooked, this paper assesses the conceptual adequacy of the ENABLE framework in relation to an outstanding instance of innovative practice in blended learning. That instance is embodied in the Financial Reporting 1 (FR1) course.

FR1 is an accounting course offered in the second semester of first-year Commerce studies at UCT. Historically attended by 800 to 1000 students, this large class is part of UCT's professional accounting programme, which prepares graduates for eventual qualification as chartered accountants. The course follows Financial Accounting in the first semester and precedes Financial Reporting 2 in the subsequent academic year.

Before the transition to online learning in 2020, the FR1 teaching and learning activities were traditionally conducted in person. These included four or five 45-minute lectures each week, supplemented by weekly tutorials lasting approximately 1 hour and 45 minutes. Assessments comprised weekly assignments, a 12-minute quiz administered during tutorials, two class tests, and a final exam.

When the COVID-19 pandemic necessitated a shift to online learning in 2020, FR1, like all UCT courses, quickly transitioned to a fully online format. After social distancing restrictions were lifted, the academic team thoughtfully evaluated which online activities to retain and how to reintegrate in-person elements, resulting in a truly blended course structure.

FR1 has been selected as the focus of this case study because it exemplifies a widely recognised and successful implementation of blended learning for several reasons. First, the transition to blended learning was led by two outstanding educators, Jimmy Winfield and Carla Fourie, who together bring nearly four decades of experience teaching FR1. Jimmy has received the prestigious UCT Distinguished Teaching Award and the CHE-HELTASA National Excellence in Teaching and Learning Award, a distinction granted annually to only a select few higher education professionals in South Africa[2]. Meanwhile, Carla Fourie, also a recipient of the UCT Distinguished Teaching Award[3], currently serves as the Head of UCT's highly acclaimed Academic Development Programme (ADP) in Commerce. The primary objective of the ADP is to support and empower students who have faced educational gaps or life experience disparities, enhancing their academic success and retention.

Secondly, students report extremely high levels of satisfaction with the course. According to Winfield and Whitelaw (2024), a course-wide survey with an 86.7% response rate revealed that 79% of students prefer the blended model, while only

[2] https://commerce.uct.ac.za/articles/2018-12-21-winfields-winning-ways-continue

[3] https://www.news.uct.ac.za/article/-2009-11-10-distinguished-teacher-awards

11% favour a purely online format and 7% prefer a fully in-person approach (3% responded “I don’t know”).

Focusing on the video lessons that replaced in-person lectures—one of the most significant changes between the previous in-person model and the current blended format—it is evident that students favour this new modality. When the course was offered solely in person, the percentage of students who responded "strongly agree" to the statement “Lecturers in this course have contributed to my learning” ranged from 21% to 69%. By contrast, the blended group’s responses to the same prompt regarding the video lessons significantly exceed this range, with 82% expressing agreement. Given that the instructor who created the online videos was also one of the in-person lecturers, this clearly indicates that students value the video lessons more than traditional lectures.

Thirdly, the blended learning modality has positively impacted academic performance. Winfield and Whitelaw (2024) measured the “blended learning effect” by contrasting student results in the blended learning FR1 cohort of 2022 with an average of the in-person FR1 cohorts in 2018 and 2019. They found that the blended learning effect caused a statistically significant improvement in average grades; which they measured as a 3.6% improvement when controlling for factors such as gender, home language, age, admissions scores, and performance on standardised tests assessing numeracy and literacy. The improvement was evident regardless of how the data were analysed. Notably, this academic boost is not limited to students from more affluent backgrounds. On the contrary, Winfield and Whitelaw (2024, p. 284) demonstrate that “blended learning has strong and positive effects for ADP students, even exceeding those for mainstream students.”

Finally, the blended offering of the FR1 course has received recognition for excellence in various forums. The course and its features have been the subject of presentations at three separate UCT Teaching & Learning conferences, two CILT presentations, a demonstration for the Digital Media Unit, and a podcast[4], as well as being featured in UCT News[5] and national media outlets[6]. Additionally, the course was selected as a case study for the Sharing Online Assessment Project[7], which compiled effective assessment practices implemented at UCT during the Emergency Remote Teaching (ERT) period of the COVID-19 pandemic.

[4] https://open.spotify.com/episode/7vpk9ORQHgOykKNPpdwuJJ
[5] Lightboard makes teaching effective during pandemic | UCT News
[6] Prof bou self elektroniese bord vir meer interaktiewe klasse | Netwerk24
[7] https://cilt.uct.ac.za/teaching-resources-assessing-learning-sharing-online-assessment-practices-case-studies-expanding/acc2011s-acc2111s-financial-reporting-1

Methodology

The methodology involved analysing existing data related to the course, supplemented by follow-up interviews that facilitated a form of "professional dialogue" (Garratt, 2019), where researcher and lecturer engaged in "productive and respectful collaborations" that can "generate new insights for transformative practice" (Peel, 2021, p. 201). In this context, Cheryl served as the developer-researcher, while Jimmy was the lecturer. Given the dialogical nature of their extensive discussions, Cheryl and Jimmy agreed to co-author a joint paper.

Data collection and analysis

Data for the case study were gathered from five sources: (1) FR1 course sites; (2) the rough-cut podcast audio of an interview conducted by Ms. Nawaal Deane, Head of CILT's Online Education and Course Curriculum Design, which was made available to the author; (3) Jimmy's CILT presentation on November 21, 2023, which the author attended; (4) a series of five online discussions between Cheryl and Jimmy that were automatically transcribed; and (5) the manuscript by Winfield and Whitelaw (2024).

The analysis of the FR1 course was initially conducted by Cheryl according to the sections of the ENABLE framework. This analysis was then confirmed or challenged by Jimmy, leading to discussions about potential additions to the ENABLE framework.

Permission and ethical clearance

Prior to the commencement of the investigation into this case study, permission was obtained from the lecturer, and ethical clearance was granted by the Centre for Higher Education and Development (CHED) Ethics Committee at UCT.

Analysis of the FR1 course according to the ENABLE framework

In this section, the FR1 course is discussed from the perspective of the ENABLE framework.

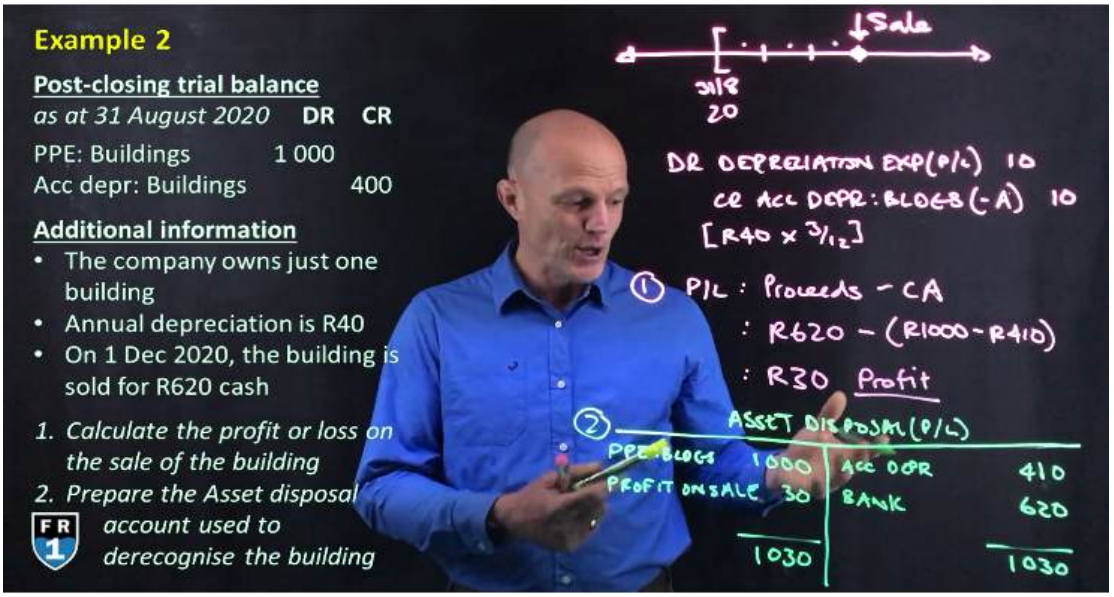
Accessible materials using suitable technology

Obviously, any course with online components must be offered on some kind of digital platform. For FR1, this is the institutional Learning Management System (LMS). Up until 2022, this was Vula (an institutional version of Sakai), which facilitated the curation of course materials, communication with students, and various administrative tasks such as tutorial sign-ups, quizzes, and assignment submissions. FR1 has since migrated to Amathuba, the new LMS adopted by UCT in 2023.

The origin of the distinctive technology underlying the creation of the FR1 video lessons is worth explaining. In 2019, Jimmy was catapulted into the use of video lectures due to a "tutorial crisis," where his tutors' test week rendered them unavailable to staff tutorials for approximately 1,000 students. In the podcast, he

describes considering first cancelling the week's tutorials and then remembering a piece of technology—a "lightboard"—that had been pointed out to him a couple of years earlier by a colleague in CILT. He was relieved when the resulting first lightboard video for FR1 received "great feedback from the students" and other staff members. This turned out to be extremely fortuitous when COVID-19 forced university lecturers around the world into completely online teaching environments with very little notice. Prevented by lockdowns from leaving his home, Jimmy built his own lightboard, which became the bedrock of his teaching engagement with students.

Figure 2: *Still from a lightboard video teaching the derecognition of property*



The FR1 team did not confine online teaching to video lectures alone; instead, they built an entire learning design around them using an array of other technologies. To proactively support students who are visually impaired and need to use a screen reader and/or whose mother tongue is not English, they provided transcripts of the video lectures. This practice is strongly recommended in both the UDL and ENABLE frameworks (Accessible materials using suitable technologies overview). To ensure that the students mastered the concepts taught in the video lectures utilising the lightboard, they had students complete short, formative, automatically marked online quizzes, which they termed "Knowledge Checks," followed by a more extensive weekly online quiz to which a mark was allocated.

When in-person learning was again permitted in 2022, the FR1 team added two in-person learning activities to help students apply the concepts taught in the video lessons. The first of these is a 45-minute in-person "Flipped Friday" lecture, which uses a flipped classroom approach (Gerber & Eybers, 2021; Lento, 2016) in which students work in small groups and participate in competitive live quizzes using an online quizzing tool called Wooclap. The other in-person learning activity is a small-group tutorial session lasting 1 hour and 45 minutes, much like the pre-pandemic tutorial.

Weekly assignments are written out longhand, mimicking the requirements of the two tests and the examination, and then scanned and submitted to the LMS, where tutors can provide feedback and remediation. Badges—"congratulatory emails with fun GIFs" sent to students who performed well in the relevant week by completing all the knowledge checks, achieving at least 60% on the weekly quiz, and submitting a complete assignment, and attending their tutorial session" (Winfield & Whitelaw, 2024)—are sent directly from the lecturer to each successful student.

Deliberative course planning

The FR1 team meticulously plans each instantiation of the course. Jimmy puts this down to being interested in new ways of teaching and being willing to experiment. As he explained:

> *"I think sometimes people mistake me for somebody who has always been really passionate about online and blended [learning], but actually … I'm only passionate because I've seen how it works. The truth is I'm just kind of curious about innovative ways to teach. Although I'm a bit scared about starting something new, I usually like to confront that fear and try it out and see what works."*

The FR1 academic team was often just doing its best to offer high-quality learning in the challenging circumstances created by the pandemic. They did not specifically set out to make a blended course that was more accessible and equitable, but they

nonetheless followed a range of learning and/or teaching strategies that enacted some of the key strategies highlighted in the ENABLE framework as well as several UDL principles.

Particularly in relation to creating a Student Profile as recommended in the ENABLE framework, Jimmy considers the academic results and course evaluation feedback from the prerequisite course. He has also drawn upon insights of the needs and preferences of prior cohorts of students, including their linguistic and cultural backgrounds, familiarity with business practices, the pace at which they seem to learn new concepts, their preferences for both auditory and visual materials, and their apparent preferences for additional course material to augment or extend the basic learning material (Checkpoint 3.1). Based on these two sources and his years of experience in running the course, he has anticipated the students' probable linguistic and cultural backgrounds, their possible prior knowledge, their most likely preferences for auditory and visual materials, as well as the types of additional course material and in-person support.

Additionally, Jimmy has taken into account the students' preferences for the pacing, days of the week, and times of the day best suited to their learning. He also endeavours to ensure that economically vulnerable students have equitable access to all learning materials and activities.

He places significant emphasis on addressing their linguistic capabilities in English, recognising that his students come from various language backgrounds, with English being their second, third, or even fourth language. Consequently, he strives to ensure that his lectures and materials are presented in a manner and language level that are straightforward and easily understandable for all students. He similarly advises his tutors to use clear board work and plain, uncomplicated English and to resist the urge to make themselves look smart by using more complex vocabulary in front of the students.

Although the ENABLE framework advocates the use of some type of pre-course survey for the exact cohort of students, given that Jimmy and his colleagues have taught this course for many years, their use of insights from prior cohorts to inform their course planning is a reasonable strategy.

In relation to the course content, Jimmy and his team have identified the basic concepts that the students need to master in financial reporting, the additional concepts that are layered upon basic concepts, and then made visible the structure of the relationships between these concepts. What the FR1 course does particularly well is respond to the question from the ENABLE framework: *How exactly does this course relate to other courses in the programme?* (See ENABLE: Critical curriculum alignment)

What is also clear from the podcast, Jimmy's presentation, and Winfield and Whitelaw (2024) is that this curriculum planning is not a once-off event but one that Jimmy has been building on for years. As Jimmy described:

> *"Over the years I've tried a bunch of things that haven't worked very well and others that have … the blended learning experiments [have] slowly unfolded over the last few years."*

He elaborates that the academic team changes aspects of the course every year depending on how well they worked. For example, the approach and content of the Flipped Friday lectures have evolved in response to student feedback on the course evaluations. Similarly, the number of in-tutorial quizzes has expanded since the first time they were implemented, when just three quizzes in the semester demonstrated that they are an effective, low-stakes means of improving students' ability to produce handwritten answers under test conditions, thereby better preparing them for the class tests.

Student-centred learning

Jimmy is very aware of his students' needs and particularly the challenges that they faced in-person (prior to COVID-19), online (during COVID-19), and in a blended mode (subsequent to COVID-19).

As one example, he highlights student motivation and the need to build into the course features that "counteract the lower self-motivation that can accompany blended learning" (Winfield & Whitelaw, 2024). In relation to student learning and motivation, Jimmy draws his inspiration not directly from Skinnerian positive reinforcement (Skinner, 1985), but from deliberate gaming engagement strategies that he had observed and thought would work well in education. This incentive strategy is manifested in the badges that students can be awarded for successful completion of the requisite tasks. There are certainly authors who have also made such assumptions about the value of positive reinforcement and motivation (cf. Garris, Ahlers & Driskell, 2002; Malone, 1981). Although the ENABLE framework does not refer directly to extrinsic rewards, the UDL guidelines suggest that "one important aspect of self-regulation is the personal knowledge each [student] has about what he or she finds motivating, be it intrinsic or extrinsic" (UDL Checkpoint 9.1). Jimmy and his team also deliberately encourage students to seek more intrinsic benefit from their learning by encouraging them to take responsibility for their own learning. One way is to include in the welcome video for the course an explicit admonition to cultivate self-care, self-belief, and self-discipline. Another is the requirement that they reflect each week on their own answers and approach to the previous week's assignment and to submit a written account of this reflection process.

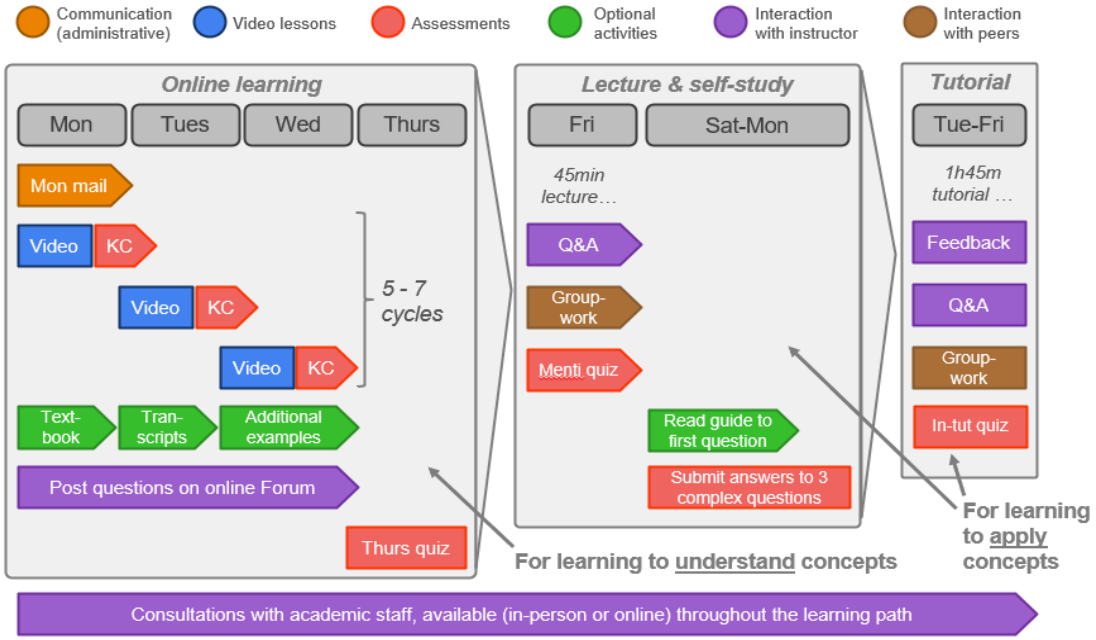
A second example of the FR1 team's student-centredness is the positive way in which they responded to the students' requests not merely to have a transcript of the

instructional videos he created but also screenshots of the visual aspects of the videos that were not adequately captured in the text. Students said that they would be able to learn better if they had "pictures" of these visual or diagrammatic relationships, hand-drawn or composed by Jimmy during his explanations on financial reporting.

Responsive teaching and learning engagement design

Jimmy's careful planning of key concepts and consideration of how students learn best led to the development of a blended learning design that followed a consistent weekly structure, as shown in **Figure 3**.

Figure 3: *Responsive blended learning design weekly workflow*



The arrows in Figure 3 highlight the two key student-centred objectives of the course: first, to understand financial reporting concepts, and second, to learn how to apply them. The diagram also illustrates the design workflow of this blended course, outlining the online and in-person phases of the student experience each week. The colours represent: (1) the communication element that ensures seamless course operation; (2) the primarily video-based teaching element; (3) assessment and feedback processes; (4) optional learning activities; (5) interaction with the lecturer; and (6) interaction with peers. Table 3 provides additional details on each of these elements.

Table 2: *Description of the elements of the learning design workflow*

Mon mail	A weekly announcement and email sent out via the LMS containing neatly packaged and concise information about all the resources, associated activities,

	and deadlines for the coming week, along with information about unusual events such as public holidays or upcoming tests.
Video	Each week, between five and seven pre-recorded and edited videos become available at 10am on Monday, featuring the lecturer using a lightboard along with overlaid images and/or text. Also available: • Subtitles • PDF copies of the questions used as worked examples in the videos
KC	A "Knowledge Check" follows each video to test students' understanding of the key concepts in that video. Students are required to obtain 80% in order to progress to the next video. Feedback is available, and reattempts are permitted.
Text-book	Optional: For each video lesson, references are provided to the specific sections and pages in the textbook related to that content. Digital access was made available via the library for students who could not afford to purchase a copy.
Tran-scripts	Optional: For each video lesson, an edited transcript is made available for download with screenshots of essential lightboard content.
Additional examples	Optional: For more than half of the videos, additional examples are provided for download to help students embed and practice the concepts taught in the related videos.

Post questions on online Forum

Students are encouraged after each video, quiz, and homework submission to post questions to the related forum, where a lecturer responds. Students are also encouraged to read the answers to questions posted by other students.

Thurs quiz	Students complete a weekly online quiz to test their understanding of the key concepts for the week. This "Thursday Quiz" is allocated a grade.
Q&A Group-work Menti quiz	Students attend a 45-minute **"Flipped Friday" session** in person, where the concepts taught in the video lessons that week are applied to a scenario-based, somewhat complex question • The lecturer answers individual questions and explains answers as they are revealed • Students work together in small groups • Students use their mobile phones to individually respond to questions via the online quizzing tool *Wooclap*. A leaderboard encourages friendly competition between groups
Feedback Q&A	Students attend a 1h45m **tutorial session** in classes of 15-25 students each • Tutors provide feedback about assignment questions and any recent assessments • Tutors answer individual questions • Tutors facilitate the class working in small groups together through a new, previously unseen question

Group-work In-tut quiz	• Occasionally, there is an in-tutorial quiz to give students practice writing out answers long-hand in the way they are required to do in tests and exams

In his creation of videos using the lightboard, Jimmy has intuitively recognised and adopted key behaviourist and cognitivist strategies of guided instruction (CILT, 2024; Clark, Kirschner & Sweller, 2012) and precise demonstration (CILT, 2024; Merrill, 2008). He is also implementing the UDL guidelines of:

- Highlighting structural relations or make them more explicit
- Making connections to previously learned structures
- Making relationships between elements explicit (UDL Checkpoint 2.2).

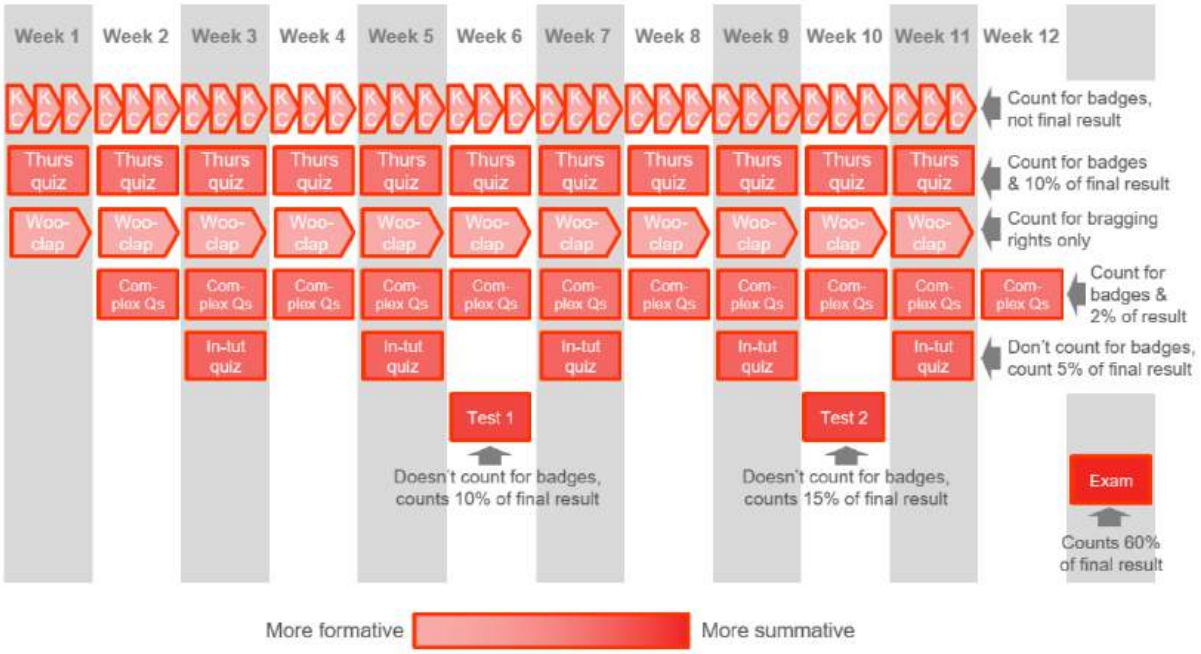
Jimmy consciously draws upon three of Mayer's (2001, 2017) cognitive principles, namely the segmenting principle, which holds that students learn better when a multimedia message is presented in user-paced segments rather than as a continuous unit. This is evidenced in the way that the FR1 video lessons were arranged in short segments that students could stop and repeat easily. Mayer's (2001, 2017) signalling principle refers to using cues, prompts, or highlights in videos or other media, to draw students' attention to essential information. This is seen most specifically in the overlays on the videos and the hand-drawn arrows. The temporal contiguity principle holds that students learn best when words and images are presented simultaneously rather than sequentially. This is seen in the lightboard videos and transcripts, which include screenshots of relevant sections of the video in the corresponding text.

The detailed learning design choices for the FR1 course align closely with UDL Checkpoint 3.2, which emphasises the importance of highlighting key elements in text, graphics, diagrams, and formulas using cues and prompts to draw attention to critical features.

Assessment & feedback

In terms of assessment and feedback, Jimmy's pedagogical strategy involves providing assessments promptly after concepts are taught or applied, accompanied by immediate digital feedback or brief verbal feedback from tutors shortly thereafter. This approach aligns with UDL principles, particularly Checkpoint 8.3, which advocates for mastery-orientated feedback. To assess students' achievement of each learning objective effectively, assessments must occur regularly and frequently, as illustrated in **Figure 4**.

Figure 4: *Assessment and mark allocation overview*



As an initial step, the five to seven "Knowledge Check" (KC) questions following each week's videos serve as a developmental and formative strategy, enabling students to self-assess their understanding of the concepts covered. These non-timed assessments consist of 5–10 short questions that assess comprehension through multiple-choice and fill-in-the-blank formats, which are automatically graded with pre-loaded feedback. To unlock the next lesson, students must achieve a minimum score of 80%, and completing all KCs is required to earn a weekly badge. This type of formative assessment is based on Benjamin Bloom's mastery learning theory (1971) and is strongly supported by UDL principles (Checkpoint 6.4: Enhance capacity for monitoring progress) as well as the ENABLE framework (Formative assessment and feedback, CILT, 2024).

The knowledge checks do not count towards the students' final grade, but once students have completed them, they must do the second assessment type, which is scaffolded to be an early overall assessment of their basic understanding of the concepts, and which does count towards their grade. This is the weekly quiz on Thursdays, which features scenario-based questions containing unique figures for each student, minimising the risk of collusion. These quizzes are auto-graded with pre-loaded feedback, quickly providing students with insights into their performance. The best scores contribute 10% to the overall course grade. As low-stakes opportunities for weekly feedback, these quizzes exhibit both summative and formative characteristics (see ENABLE Summative assessment, CILT 2024). To earn a badge, students must score above 60% on the quiz, among other requirements (Winfield & Whitelaw, 2024). Having these questions available online allows students

to complete the quiz on the concepts before applying them in the "Flipped Friday" session.

The third, fourth, and fifth assessment strategies are designed to test students' understanding of how to apply key concepts to novel situations (see ENABLE's Learning by applying in practice). These assessments are scaffolded, so that the first one counts only for bragging rights, the next is assessed only for completeness, and only the last of these three - the final assessment relating to a week's content - counts towards the final grade.

The third strategy involves an online quiz conducted during the "Flipped Friday" session using third-party tools such as *Wooclap*, which students can access via their mobile phones. The lecturer prepares the questions and feedback in advance. A key advantage of these online quizzing tools is their ability to display collective results in real-time, enhancing student engagement and fostering a dynamic learning environment. This friendly competition introduces an element of gamification to the learning process. Since the results do not contribute to badges or final grades, students can enjoy a more relaxed learning experience. The quiz serves as a formative assessment, allowing students to test their understanding and application of course concepts. By participating in these real-time quizzes, students can identify their strengths and areas needing improvement, enabling them to adjust their learning strategies accordingly (see ENABLE's Self-monitoring).

The fourth assessment strategy is an individual assignment that focuses on three more complex and integrated scenario-based questions as well as their reflection on their performance in a previous individual assignment. These questions are designed to test students' ability to apply the week's concepts. Students are required to write out their answers longhand (as they will have to do in the tests and exam), scan them, and submit them on *Vula* by the beginning of the following week, so that the applicable tutor can assess them for completeness. The average grade of this assignment counts for 2% of the final result. Responses to the assignment are discussed in the in-person tutorial sessions, providing students with an opportunity to engage with the material and receive feedback from their peers and the tutor (see ENABLE's Actionable Feedback). Submitting a complete assignment and attending a tutorial session are also requirements for the award of a badge. This individual assignment, combined with the other assessment strategies, provides a comprehensive and holistic evaluation of the students' understanding and application of the course concepts while also encouraging self-reflection and active participation in the learning process.

The fifth assessment strategy involves individual in-tutorial quizzes that use scenario-based questions. These quizzes test students' ability to write answers longhand under timed test conditions. There are three of these in-tutorial quizzes per semester, and they count for 5% of the final result. However, they are not required for a student to earn a badge. The grading of these quizzes is done using a detailed

marking memo by the tutors, who also provide feedback to the students. This type of assessment provides the students with a low-stakes experience of test and examination conditions.

The sixth assessment strategy is more summative in nature. Tests 1 and 2 are each 90-minute formal in-person assessments that simulate exam conditions. These tests feature scenario-based questions designed to assess the students' ability to apply all concepts covered until that point. The scenario-based questions in these tests require students to demonstrate their understanding of the course material by applying the concepts to practical situations. This approach goes beyond testing mere knowledge recall and challenges students to think critically and creatively. Once graded, the scripts are returned to the students, and extensive markers' comments are distributed to the entire class. This feedback provides valuable insights into the students' performance and areas for improvement. Together, Tests 1 and 2 count for 25% towards the final result. These assessments serve as a significant milestone in the course, allowing students to showcase their progress and the depth of their understanding.

The seventh assessment strategy is embodied in the final examination: a three-hour formal assessment at the end of the semester. It is designed to test the students' understanding and application of all concepts covered throughout the course. Similar to Tests 1 and 2, the examination features scenario-based questions that challenge students to apply the course material to practical situations. Once graded, copies of their examination scripts are made available to students, and extensive markers' comments are distributed to the entire class. For students who do not achieve the required pass mark on the initial examination, a supplementary exam is available two months later. This safety net provides an opportunity for students to demonstrate their competence and progress, ensuring fairness and supporting their academic success.

While the course employs a diverse range of assessment strategies, the formats do not proactively provide students with alternative options, unless special accommodations have been arranged for individual students with the UCT Disability Service[8].

However, a noteworthy feature of the summative assessments responds directly to a key purpose of the ENABLE framework - inclusivity and equity - by respecting the linguistic and cultural diversity of students. The words used in questions are chosen carefully to be comprehensible to students whose first language is not English, with any terms that may not be clear to such students being explained with either a footnote or a diagram. At the end of the assessment-setting process, the paper is scrutinised for inaccessible language by a specialist in teaching such students. Furthermore, Jimmy is attentive to the invented scenarios described in the assessment

[8] https://uct.ac.za/oic/disability-service

questions: names, locations, and the products described in these questions reflect South Africa's rich diversity of cultural groups.

Inclusive evaluation & reflection

It is clear from the papers Jimmy has presented at UCT Teaching and Learning Conferences over the years (2018, 2020, 2022, 2023) that he takes evaluation of his courses very seriously and is "curious about innovative ways to teach in new ways". This has led to a collaboration with economist Dr. Emma Whitelaw, in which they interrogate student perceptions of and academic performance in the FR1 course and make the case for the value of blended learning (Winfield & Whitelaw, 2024).

Although the FR1 team does not administer a pre-course questionnaire, as recommended by the ENABLE Framework (see ENABLE's Expansive evaluation & reflection overview), they do undertake an 'Early Evaluation' about four weeks into the course to establish whether there are issues that need to be addressed for the current cohort of students. The Early Evaluation contains important questions about the course communication, course resources, student experience, and their experiences of their specific tutor.

In addition to the Early Evaluation, the FR1 course includes a similar evaluation at the end of the course, a strategy strongly recommended by ENABLE (see Expansive evaluation & reflection overview). As he is actively researching his pedagogic strategy around blending learning, Jimmy asks a few targeted questions in addition to those in the 'Early Evaluation.'

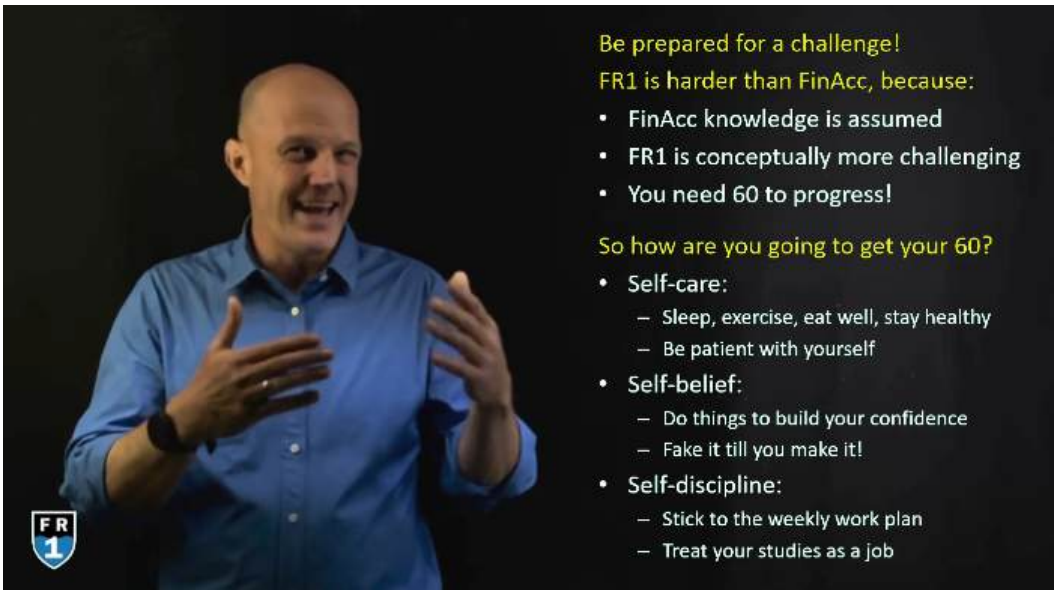
Unambiguous communication

The ENABLE framework makes the case that a course will not hold together without regular, comprehensive, and clear communication between the lecturers, tutors, and students. The FR1 team is hyper-aware of this need for clear and unambiguous communication. It commences before the course starts with the information in the course handbook (Faculty of Commerce Undergraduate Handbook, 2024, p. 93). This descriptive text accurately reflects the course overview, including the blended mode of delivery and assessment, and conforms closely with ENABLE's recommendation that course information is accurate.

A second communication method adopted before the course commences is the provision of comprehensive "Welcome and key info" via the course site on the LMS. This includes a course policies document, a weekly work plan, the assessment schedule, two course outlines listing the course content (one at a high level and the other in granular detail), written responses to FAQs, and a welcome video. The video is a 30-minute introduction to the course, in which Jimmy introduces the FR1 team, explains the blended learning model, highlights unfamiliar features of the course, does a walk-through of the online activities, and recommends how students should

approach the course for the best chance of success. This aligns well with the ENABLE framework, which identifies the necessity of having a comprehensive course outline (see Course outline).

Figure 5: *Still from the Welcome video for the FR1 course (ACC1011S)*



The third communication strategy adopted by Jimmy is the use of the Announcements tool in *Vula*. Although most lecturers use this tool, Jimmy has developed a specific strategy to minimise emails to students on the FR1 course. He plans his communication with his students well in advance so that he can provide the essential information in the form of one weekly announcement on *Vula*. He limits the number of announcements deliberately so as not to overwhelm the students who are likely to be receiving several other announcements from other courses.

A fourth communication strategy adopted by Jimmy is direct one-on-one communication. The FR1 course has arranged for a single email account to which the whole team has access in order to ensure that each issue reaches the right member of the team, who can deal with it quickly. The email address is provided to students at the start of the semester and included at the bottom of every announcement for either email or to request in-person consultations with the lecturer. For more in-depth discussions, Jimmy also makes himself available to meet with students electronically over MS Teams and in person during office hours.

Key insights and recommendations

In response to the two research questions that guided the study, namely the extent to which the ENABLE framework aligns with the course design of the FR1 course and which aspects of the FR1 course could inform the development in the ENABLE framework, we present a summary of key insights of how the FR1 course follows the

ENABLE framework and key recommendations from the FR1 course for the ENABLE framework.

Key insights of how the FR1 course follows the ENABLE framework

Table 4 provides a summary of how the FR1 course implements strategies in the ENABLE and UDL frameworks.

Table 4: Summary of implementation of strategies in the ENABLE or UDL frameworks

Activity	ENABLE framework	UDL principle
Pre-recorded lightboard lectures	Learning by observing	Recruiting interest
With transcripts	Use multiple media for communication	Providing different options for perception
With annotated transcripts	By including specific screenshots from videos, students can use these as an alternative to watching videos	Offer alternatives for auditory information Use multiple media for communication
Knowledge checks after each core concept (progression dependent)	Formative assessment	Enhancing capacity for monitoring own progress Offer opportunities for self-assessment Provide mastery-orientated feedback
Weekly online Thursday quiz	Summative assessment, where all the concepts of the week are reviewed	Build fluencies with graduated levels of support for practice and performance
Flipped Fridays in person application	Applying to problems Paired learning with peers Interactive 'gaming' via Wooclap quizzes and a leader board	Learning by applying Foster community and collaboration
Wooclap questions with leaderboard	Gamification	Vary demands and types of resources, activities
Assignment questions (hand in)	Summative assessment (based on all concepts taught in a week) Will be discussed in tuts	Optimize relevance, value, and authenticity

Tutorials	Chance to get feedback, ask questions and work through problems with guidance	Optimise self-motivation by providing support
Weekly badges	For those students who complete four core activities, intended to reward and motivate students	Sustaining effort and persistence Promoting self-regulation Helping students develop coping skills and strategies

Key recommendations from the FR1 course for the ENABLE framework

In relation to deliberative course planning, the ENABLE framework could mention the value of reviewing prerequisite course grades and course evaluations to supplement a pre-course student survey.

With respect to student-centred learning, a recommendation that can be drawn from the FR1 course for the ENABLE framework is the inclusion of a specific section on student motivation that elaborates upon both extrinsic and intrinsic rewards.

As it pertains to responsive teaching and engagement design, a recommendation for the ENABLE framework is to develop a more specific section on multimedia learning design that uses the principles from Mayer (2017) and UDL Checkpoint 3.2 with some examples from FR1 to illustrate the nuances of these related by slightly different cues. A further recommendation for ENABLE is to foreground the value of diagrams that visually illustrate the blended model of a course.

In connection to flexible assessment and actionable feedback, a recommendation to be taken forward by CILT is to provide examples of an assessment plan in a visual form to enable the lecturer, tutors, students, and external examiners to quickly understand the various types of formative and summative assessments.

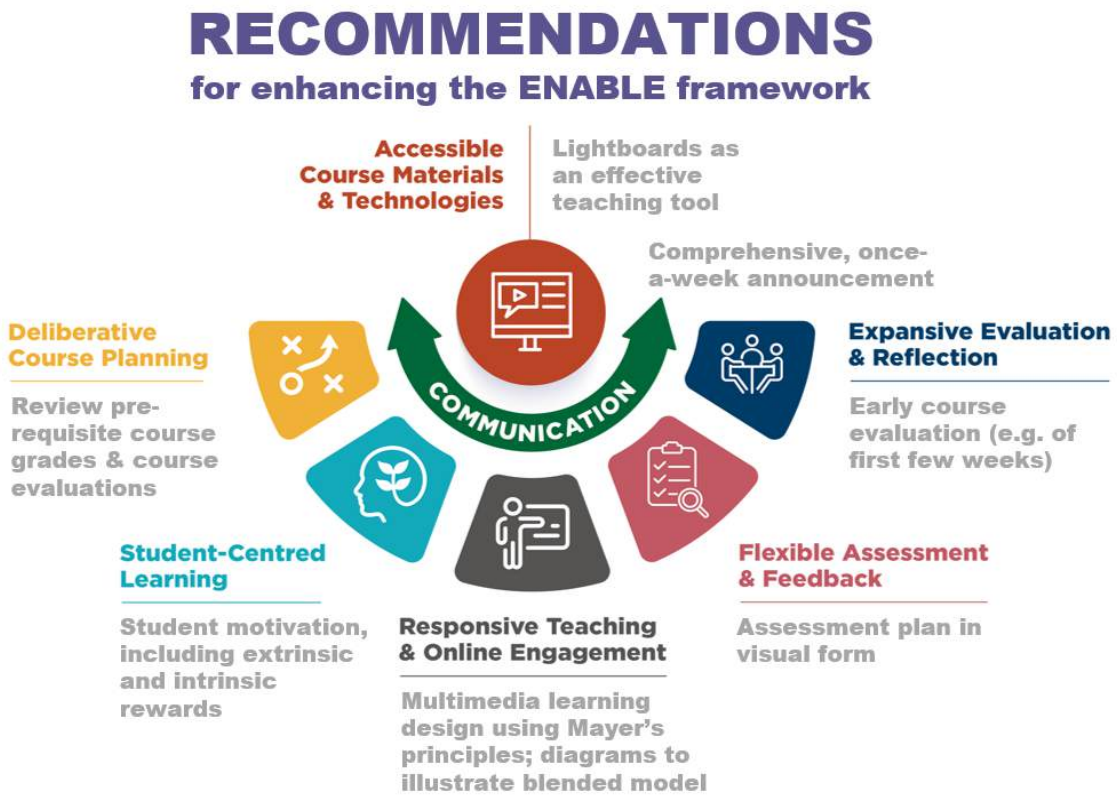
Concerning expansive evaluation and reflection, the developers of ENABLE could promote the idea of early evaluations conducted in the first four weeks of the semester, as has been done in FR1. Some of the questions used in FR1 could be useful prompts for other lecturers.

In relation to accessible technology and materials, a recommendation for the ENABLE framework is to have a section on lightboards with the FR1 course as an example of a successful implementation.

Regarding unambiguous communication, the ENABLE developers could consider emphasising the value of a comprehensive, once-a-week announcement so that students are not overwhelmed by multiple emails.

These recommendations are illustrated in **Figure 6**.

Figure 6: Summary of key recommendations for each element of the framework



Conclusion

The interrogation of an award-winning lecturer's best practice has clarified how key strategies recommended by the ENABLE framework—such as curriculum planning, learning, and teaching approaches, online engagement, accessible materials and technologies, assessment, feedback, evaluation, and reflection—are implemented in the specific context for which they were designed. Furthermore, by analysing how an exemplary academic team tailors their methods to address the unique needs of first-year accounting students, this study offers valuable insights that can inform innovative practices across various educational settings and disciplines.

Acknowledgements

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Celebrating Neurodiversity: A Crucial Component of Universal Design for Learning

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ABSTRACT

This paper explores views about autism and neurodiversity, including how understanding of autism has been influenced and the negative impact of deficit focused perspectives on autistic individuals. Key findings from a qualitative survey that has investigated the educational and diagnostic experiences of autistic children and young people are explored, which reveal that negative deficit focused perspectives of autism, which can influence the views of their educators and their peers, can lead to detrimental social learning experiences for autistic learners. These problematic social learning experiences impacted young people's self-views and influenced their views of autism, when they subsequently learnt about their autism diagnosis. However, when autistic children and young people reported that more positive perspectives of their differences have shaped their social learning experiences, they shared more positive views of self and of their future. The potential benefits of advancing understanding of autism as a neurodiversity are highlighted as an approach that could facilitate more positive social learning experiences for children and young people on the autism spectrum. The concept of Universal Design for Learning (UDL) is explored and connections between the neurodiversity perspective and the approach advocated within the revised UDL 3.0 Guidelines are emphasized. A rationale is therefore created for the importance of incorporating an explicit celebration of neurodiversity within educational practice, alongside educational practice based on the revised UDL 3.0 Guidelines, to positively enhance the learning and social experiences of autistic children and young people within education.

Keywords

autism, neurodiversity, self-views, Universal Design for Learning (UDL)

INTRODUCTION

Neuroscience, medical sciences, psychology and psychiatry have dominated research and informed understandings of autism. Despite progress in understanding of autism, there is not yet a medical test to support speedy autism diagnosis. Therefore, autism diagnosis is based on agreed diagnostic criteria and observations of individual performance on psychological assessments (Jacob et al., 2019). Autism research and diagnostic criteria incorporates medical terminology and psychological constructs (such as deficit, impairment, intelligence and disorder), which are based on shared

understanding of developmental norms that can be measured, thus positioning autism as a deviance from the norm (Oravecz et al., 2015).

Discourses that construct understanding of autism have been identified to have the potential to disable the self-views of autistic individuals by focussing on negative perceptions, or to enable them by constructing positive views of autism (Davidson and Orsini, 2013). Identity is formed by both the perceived perceptions of others and the individual's view of self, which is shaped through highly complex social experiences, and the processing of these experiences (Mishler, 1999). As a significant portion of young people's daily experiences occur within education, educational experiences will be of significance in shaping their self-views (Davidson and Orsini, 2013). A recent international review about young autistic learners' school experiences, has highlighted that, at school, they experience difficulties within social relationships, causing isolation, bullying and exclusion, all of which can negatively impact their self-views and their mental health (Horgan, Kenny & Flynn, 2023). Therefore, identifying ways to address problematic perspectives of autism that impact autistic young people's social learning experiences is crucial. The revised UDL guidelines from CAST (2024a) offers an approach that could facilitate this by "*centring and affirming learners' strengths and identities*" (CAST, 2024b, p.2).

Perceptions of autism

Although every person on the autism spectrum is unique, autistic people have been identified to have cognitive processing traits that are shared with other autistic individuals, which include enhanced perceptual abilities and attention to detail (Happé & Frith, 2006). This autistic cognitive style impacts communication, interactions, attention, sensory processing and interests from an early age (Guldberg et al., 2019). As these shared characteristics occur on a spectrum (World Health Organization, 2018), every individual on the autism spectrum is unique (Guldberg et al., 2019; Lord et al., 2018).

The diagnostic name within current medical criteria is 'autism spectrum disorder' (e.g. World Health Organization, 2018); and explanations about the features of autism within medical criterion describe a series of difficulties and deficits (Pellicano and den Houting, 2022). However, as the aim of this article is to focus on positive understandings of autism, in particular understanding autism through a neurodiversity perspective, medical descriptions of autism are omitted[1].

Research by Kenny et al. (2016) explored the autism terminology preferences of parents of children on the autism spectrum, professionals, and adults with autism diagnosis from the United Kingdom. Although preferences differed, all participant groups agreed that the language of deficit should be avoided; the most highly endorsed term was 'on the autism spectrum' and the second most accepted being 'autism'. The use of the term

'autistic, which embraces autism as part of identity, was most popular with adults with autism. Therefore, to respect these different preferences, a mixed approach is used in this paper, the most popular terms identified by Kenny et al. (2016): 'autism', 'on the autism spectrum' and 'autistic', are used interchangeably.

Neurodiversity and neurodivergent learners

The concept of neurodiversity recognises that neurobiology varies and that different types of neurobiology create a range of cognitive approaches which influence learning (Hughes, 2016). Neurodivergent is a term that refers to individuals with specific neurocognitive styles, such as autism, ADHD and dyslexia (Kapp, 2020, p.2). The term is credited to Singer (1999, p.94), who highlighted that autism is a 'hardwired neurological difference', which should be understood as a neurodiversity and equally respected. It has also been advocated as a response to negative labelling associated with the medical or expert view of disability (Kapp, 2020, p. 2). The concept of neurodiversity is increasingly applied across variations in human neurobiology and thinking, for example, by individuals with a range of diagnoses including dyslexia, attention deficit hyperactivity disorder (ADHD), developmental coordination disorder (DCD), dyscalculia and Tourette syndrome. (e.g. British Dyslexia Association, 2018; Clouder et al., 2020; Griffin and Pollak, 2009; Kapp, 2020).

The adoption of a neurodiversity perspective has been found to have a positive impact. For example, research has demonstrated that adopting neurodiversity, as a perspective through which to understand autism, is predictive of higher self-esteem in autistic individuals and reduced negative perceptions of autism (Ferenc et al., 2023). Pollak (2005) identified positive impact in students' discussions of their learning, ambitions and future careers when dyslexia was advocated as a neurodiversity. Griffin and Pollak's (2009) study also demonstrated that when students aligned with a view of dyslexia as a diversity, rather than a deficit, they had a more positive outlook for their future. The neurodiversity perspective has also influenced researchers to move away from a deficit research focus, for example, Remington, Swettenham, and Lavie (2012, p. 544) identified that the specific cognitive processing and attentional traits employed by people on the autism spectrum '…results not from a filtering deficit but from enhanced perceptual capacity'. Such findings emphasise the wider benefits of developing a more positive view of those with different cognitive strengths and learning strategies.

Neurodiversity and the principles of UDL

A neurodiversity perspective, which recognises that all variations in human cognition should be equally respected (Baron-Cohen, 2017), links with the underpinning philosophy of UDL. A key underpinning aim of UDL is to guide professionals on approaches to support inclusive education by creating teaching and learning approaches that support learner agency, by making learning personally and socially meaningful,

encouraging reflective learning and metacognition and by building on learner strengths, experiences and cultural capital (CAST, 2024c). Rose and Meyer's (2002, p. 13) comprehensive explanation includes the neuroscience upon which UDL is based. The explanation highlights the importance of understanding brain networks linked to learning, alongside recognition of cognitive differences. Due to varied human neurobiology, Rose and Meyer (2002) advocate a response that is flexible and varied to meet the diversity of approaches to learning.

UDL approaches are designed to respond to the complex neurological processes involved in learning that are interconnected across three key cognitive networks: the recognition, strategic and affective networks (CAST, 2018a, p.1; Rose and Meyer, 2002, p.13). The three systems are identified to be hierarchically linked, with primary functions within the motor, sensory and limbic cortex feeding the prefrontal cortex tertiary processes where the 'affective, executive and cognitive functions merge' (Rao et al., 2023, p. 712).

CAST (2018b) also highlights a key element of Hebb's (1949) synaptic theory of memory that is important for learning: "neurons that fire together wire together" (cited in CAST, 2018b, p. 2). Hebb (1949 cited in Langille and Brown, 2018) highlighted three important neurophysiological changes that are linked with learning and memory: changes in synapses (the tiny gaps between neurons), creation of cell assemblies (neurons and connecting pathways, via synapses, that fire together simultaneously) and phase sequences, which link the multiple cell assemblies over time through patterns of neuronal activity caused by action and thinking. Hebb (1949, p.129) highlights that once a phase sequence has been established, regardless of the main sensory source for learning, it can be triggered by any sensory pathway. Therefore, if we learn something through the auditory pathway, the visual pathway can still trigger recall because the learning is hosted in the neurophysiological network that is triggered simultaneously. Hence, research has demonstrated that approaches to learning, teaching and assessment that align with UDL guidelines, by providing for and drawing on a range of different cognitive pathways and processing strengths, can facilitate successful learning for the widest variety of learners (e.g. Almeqdad et al., 2023; Mackey, 2019; Ok et al., 2017).

Novak and Thibodeau (2016) highlight that the core principles of UDL create the most effective learning activities and environments for all learners, by ensuring that optimal conditions are in place for learners to engage their affective, recognition and strategic cognitive networks, in ways that best support their learning. To facilitate learning, educators who follow the UDL approach provide multiple ways of engagement, representation and expression, so that students have different ways to access, process and demonstrate their understanding, ideas and knowledge (CAST, 2018c). The 'access', 'build' and 'internalize' approaches within the UDL guidelines (CAST, 2018c), aim to

explicitly link these multiple ways of engagement, representation and expression with practices that maximise opportunities for students to maximise their learning potential. To facilitate 'access', students' interests are drawn on and they are provided with different options to facilitate their perception and approach to learning (for example, supporting communication by providing text and visual equivalents such as automated speech to captions, transcripts, diagrams and animations). To 'build' confidence and persistence in learning, students' ongoing engagement with learning goals is secured by providing a range of ways to engage with the language and the symbols of learning (for example, by using cooperative learning groups, or scope for individualisation, with scaffolded roles, varying the expectations and acceptable approaches for demonstrating learning and providing learning guardrails that can be varied for increasing independence). To maximise the 'internalisation' of learning, strategies are modelled that increase self-regulated learning and big ideas, relationships and patterns are emphasised, so that learners can create visualised ideas with potential to maximise executive functioning and comprehension (Rao et al., 2023, p. 712).

Autism, identity and the impact of social and learning experiences

When working as an advisory teacher within the UK Local Authority system, I often received referrals for young people on the autism spectrum who were demonstrating distressed behaviours within school. Many of these young people had problematic self-views, which I observed were often closely linked with social learning experiences that influenced their views about their autism diagnosis. They often discussed the autism diagnosis using negative deficit focussed views and reported problematic social and educational experiences as a learner on the autism spectrum. This prompted me to undertake PhD research study to explore children and young people's experiences in relation to their autism diagnosis (Prentice, 2022).

The study explored the diagnostic experiences of autistic children and young people via a mixed-methods approach and was ethically approved by the University of Birmingham (Ethical Approval Number: ERN_13-0961). In this paper, the rich and detailed accounts that autistic young people shared via the qualitative survey, which was part of the study, are drawn on, as the young people's perspectives powerfully highlight the importance of finding ways to address the problematic social learning experiences and negative perspectives of autism that they experienced within education (Prentice, 2022). The young autistic participants mostly described feeling different and of struggling to understand their differences, especially before their diagnosis. They often compared themselves to their non-autistic peers and based their self-views on problematic peer interactions, which led to negative self-views, especially in terms of academic and social self-efficacy, as identified by the following participants (Prentice, 2022, pp.174-76):

> *"I felt different to everyone, I was the odd one out!"* (Participant A)

> *"I was bullied and generally misunderstood. I knew I was different but couldn't understand why. I struggled to cope at school and at home".* (Participant, C)

> *"I thought I was unintelligent and slightly insane... When I found out I felt sad for myself because it didn't make me feel better about being different. I haven't accepted my diagnosis yet, so I'm unsure of how to feel…"* (Participant K, Prentice, 2022, p. 280)

Across participants, it was evident that problematic experiences within education negatively impacted young people's self-views and their wellbeing (Prentice, 2022). As also identified in Gaffney's (2017) research about the impact of diagnosis on young autistic females, some autistic young people connected their problematic social learning experiences with the autism diagnosis (Prentice, 2022, p.92). However, some of the autistic young people who participated also reported that learning about the autism diagnosis had been a positive experience, when there was a focus on recognition of strengths linked to autistic traits (Prentice, 2022, p.279). Participants who reported this positive disclosure experience, reported it as a resilience boosting experience, as their new autism knowledge enabled them to make greater sense of their experiences. Furthermore, some autistic young people found that when their educators and peers learned about their diagnosis, they received greater support and understanding, as identified by the following participants (Prentice, 2022, pp. 175-76):

> *I understand why I sometimes find social situations daunting and exhausting. I understand why other people may perceive things differently to me. People tend to be more supportive.* (Participant S)

> *I feel like I belong somewhere, even if to others it is a weird place, I have one. I have made friends with ASD and, also, I have finally made a group of friends who all know I have Asperger's.* (Participant J)

The study findings highlighted the need to improve the social and learning experiences of autistic children and young people, which could be achieved by helping their educators and peers to understand and value neurodiversity, so they value the strengths and differences of all learners (Prentice, 2022). This could be supported by embracing the approach advocated within the CAST (2024a) UDL 3.0 Guidelines.

The renewed guidelines for UDL

The CAST (2024a) UDL 3.0 Guidelines have been further refined after exploring the views of educators and the Young Adult Advisory Board (CAST, 2024c) who shared their experiences and their views about ways to create inclusive learning environments (CAST2024d). Professionals and young people who contributed to the review highlighted the importance of positive social relationships to create inclusive learning environments and identified that negatively biased views continue to be experienced and that these have a detrimental impact on learners. Participants emphasised the

importance of feelings of belonging and of learner identity within the teaching and learning process. Therefore, the updated 'engagement' section now emphasises the importance of centring and affirming learners' strengths and identities (CAST, 2024c, p.2). The 'representation' section of the guidance includes a focus on identity, including different people and cultures, and of multiple ways of knowing (CAST, 2024c, p.2). Finally, the guidance on 'action and expression' are expanded to ensure that bias is avoided by ensuring that all forms of expression and learning are valued when discussing learners' approaches and understanding. Thus, the revised UDL 3.0 Guidelines (CAST, 2024a) provide a framework through which teaching and learning can be made inclusive by accommodating, valuing, celebrating and validating autistic students' potentially diverse interactions and approaches to learning; rather than creating experiences of isolation, bullying, stigma and exclusion that have been identified within research (e.g. Brede et al., 2017; McLoad, Meanwell & Hawbaker, 2019; Prentice, 2022).

Conclusion

Unfortunately, children and young people on the autism spectrum can have problematic experiences within education, including bullying, social and educational exclusion, all of which can negatively impact their learning, their self-views and their wellbeing (Horgan, Kenny & Flynn, 2023; Prentice, 2022). However, when the more positive perspective of autism as a neurodiversity is held by peers and educators, this increases the likelihood that autistic children and young people will experience more positive social learning experiences (Prentice, 2022). The concept of neurodiversity has been demonstrated to be a positive concept to draw on as it recognises and values differences in human neurobiology, which can boost the self-esteem of autistic individuals (Ferenc et al., 2023). The concept of neurodiversity is therefore advocated as a valuable concept that should be explicitly celebrated within education. Educators are therefore encouraged to embrace the revised UDL Guidelines and the greater emphasis on identity advocated (CAST, 2024a), by incorporating a celebration of neurodiversity within their practice, to improve the social learning experiences of autistic and other neurodiverse learners, and the self-views that they develop in response to their experiences.

Notes

1. Readers who would like to learn about the diagnostic criteria for autism can access this through diagnostic manuals, such as the World Health Organization (WHO, 2018) International Classification of Diseases-11th edition (ICD-11).

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Towards Teacher Training and Lessons Learned: Reflecting in Action and Reflecting on Action, Translanguaging UDL from Low and Middle Income Countries (LMICs)

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ABSTRACT

Since the Salamanca Statement emphasised the importance of inclusive education, efforts to adopt inclusive pedagogies have intensified in low- and middle-income countries (LMICs). Dominant research from these countries highlights that, while teachers in LMICs show varied levels of preparedness for inclusive practices, coordinated teacher training remains essential. Universal Design for Learning (UDL) has been proposed as a promising framework for fostering inclusive education in these contexts. In response, a team from the University of Cape Town designed and facilitated a ten-week online short course in English on UDL for ten educators and disability practitioners from LMICs.

Using Schon's (1983) reflective practitioner model, this paper explores participants' feedback on how language affected accessibility, comprehension, and engagement during the course. Translanguaging both as a theoretical framework and a pedagogical practice played a pivotal role in fostering psychological safety, cultural responsiveness, and active participation. We argue that integrating translanguaging into UDL course design can enhance accessibility and promote meaningful cross-cultural learning. Insights from these reflections highlight the potential benefits of merging UDL and translanguaging to create equitable and inclusive online learning environments.

Keywords

Universal Design for Learning, teacher training, low/middle-income countries, translanguaging, online learning, accessibility, cross-cultural learning

INTRODUCTION

Barriers to online participation in low- and middle-income countries (LMICs) have been identified as technological, infrastructural, pedagogical, and socio-economic dimensions (Nieder, Nayna Schwerdtle, & Sauerborn, 2022; Pasha, Abidi, & Ali, 2016). While these observations are valid and well-supported, they overlook language, the crucial aspect of online participation. Language plays a foundational role in shaping access and engagement in online learning environments, particularly for educator-centred courses (Emihovich, 2024). In course design and delivery, language can either open doors to learning by fostering understanding or act as a barrier by making content inaccessible or exclusive (Emihovich, 2024; Cioe-Peña, 2022). In other words, it is the bridge that welcomes educators into transformative learning experiences, and at the same time, it can be a barrier that holds them back.

Since the Salamanca Statement in 1994 emphasised the significance of inclusive education for all children, there has been a growing push to implement inclusive practices in LMICs. Numerous studies have examined the readiness and preparedness of teachers to adopt inclusive pedagogies (McKenzie, Karisa, & Kahonde, 2024; Mckenzie et al., 2020; Walton, 2018; Wapling, 2016, UNESCO, 1994). These studies reveal varying levels of understanding of inclusive education among teachers in LMICs, highlighting the need for coordinated efforts to equip them with essential skills (McKenzie, Karisa, & Kahonde, 2024; Wapling, 2016). To address these challenges, most of the researchers have advocated for teacher training in Universal Design for Learning (UDL) as a practical framework to advance inclusive education (McKenzie et al., 2024).

As a result, a team consisting of a course convenor and two learning designers from the University of Cape Town collaborated to design and deliver a ten-week short course on UDL. The course was grounded in the three core principles of UDL—engagement, representation, and action and expression—and encouraged participants to explore high-tech, low-tech, and no-tech strategies for inclusive teaching. Course materials included discussion forums, practical assignments, and peer feedback.

With this course being fully online, we were able to target educators from diverse geographical, linguistic, and teaching contexts. Some of the languages spoken by participants were Arabic, Afrikaans, Chichewa, Chumburu, English, Makaton, Ndebele, Shona and Xhosa. The course was specifically tailored to meet the needs of ten participants, most of whom were teachers working in mainstream and special schools across LMICs. Additionally, the course attracted disability practitioners who were deeply committed to and passionate about advancing inclusive education for learners with disabilities. Delivered entirely online, the course was conducted synchronously in English, allowing participants from diverse contexts to engage in real-time discussions, share experiences, and collaboratively explore UDL principles and their practical applications in inclusive education settings. This dynamic approach provided a platform

for meaningful interaction and exchange, fostering a shared commitment to creating accessible and equitable learning environments.

Drawing on Schön's (1983) reflective practitioner model, this paper reflects on feedback from teachers and disability practitioners who participated as students in our short course. Their insights shed light on how language influences access, understanding, and engagement in course delivery. This vignette highlights the significance of intersecting translanguaging and UDL in the design of an online short course, with a particular focus on enhancing accessibility, fostering psychological safety, and promoting cross-cultural engagement. To achieve this, we applied translanguaging both as a theoretical framework and a pedagogical practice to demonstrate its alignment or synergy with UDL.

Methodology

This paper employed a qualitative, reflective practitioner approach to examine the design, facilitation, and ongoing refinement of a UDL online short course for educators (Schön, 1983). The research was situated within the lived experience of the course designers and facilitators, adopting reflection in action and reflection on action as both methodological and conceptual lenses (Schon, 1983).

Schon's (1983) framework of reflective practice where professionals engage in a continuous process of thinking critically about their actions and decisions while they are occurring (reflection-in-action) and retrospectively (reflection-on-action) provided a meaningful foundation for understanding the iterative nature of course development and delivery in inclusive education contexts. This reflective model enabled us to explore how UDL principles were interpreted, negotiated, and applied in practice by the students.

This reflective vignette is drawn from the personal experiences of us as course designers and facilitators. No formal ethical clearance was required. All reflections are based on our professional practice and anonymised, aggregated feedback provided through course participation. The purpose of this reflective vignette is not to engage in rigorous research or present counter arguments, but rather to propose a novel research agenda by initiating a conversation by highlighting gaps in the existing literature.

The paper is structured into three sections. The first section provides a concise definition and overview of translanguaging and UDL, along with practical demonstrations of their use. The second section employs Schön's (1983) reflective practitioner model to explore the intersections between translanguaging and UDL, illustrating how these approaches have supported the creation of inclusive and equitable learning experiences. The final section synthesizes the key lessons learned and offers practical recommendations for designing and delivering equitable online learning environments.

Translanguaging

Translanguaging theory challenges the traditional notion that individuals have distinct, separate languages. Instead, it views language as a fluid and dynamic process referred to as "languaging" where individuals draw on diverse linguistic features to communicate and construct meaning (Ramly et al., 2023; Cioe-Peña, 2022; Baker, 2011). For example, a student in an online course might seamlessly integrate terms from English and their mother tongue in a discussion forum to express complex ideas. This approach, proposed by Cen Williams in 1994 (Williams, 1996 cited in Ramly et al., 2023) and supported by García and Wei (2013, cited in Cioe-Peña, 2022), takes a strength-based perspective, valuing all forms of communication and emphasising the speaker's effort to convey meaning using every available resource.

While translanguaging theory reshapes how language and communication are conceptualised, its pedagogical application focuses on intentional and strategic language use to enhance learning (Cioe-Peña, 2022). This approach aligns with the principles of UDL. For instance, an online course might include multilingual captions in videos, encourage students to submit assignments in their preferred language, or design activities that invite students to draw on their full linguistic abilities (Emihovich, 2024). Translanguaging pedagogy emphasises the importance of flexibility, proactive planning, and cultural responsiveness, offering valuable tools for supporting students with diverse linguistic abilities (Ramly et al., 2023; Rajendram, Burton & Wong, 2022).

However, despite its potential, the discourse on translanguaging is often limited to bilingual education, overlooking its relevance in predominantly monolingual online environments (Emihovich, 2024). For instance, in online classrooms where English predominates, facilitators can incorporate translanguaging by encouraging students to share course content using cultural references from their mother tongue, followed by discussions of these references in English (Ramly et al., 2023; Cioe-Peña, 2022). This practice not only validates students' linguistic and cultural backgrounds but also enriches the learning experience for all participants. In doing so, translanguaging creates a more inclusive and dynamic educational space, fostering both linguistic creativity and deeper engagement.

Universal Design for Learning

The Universal Design for Learning (UDL) framework aligns with the movement towards inclusive education. This framework calls for the redesign of learning environments. Rather than situating the perceived problem with the learner, it suggests that the issue is rooted in the structure and design of the learning environment. When intentionally designing flexible pathways for meaningful learning, learning barriers are reduced. The UDL framework guides the design of accessible, inclusive, equitable and challenging learning environments (CAST, 2024).

The goal of UDL is to support learner agency. Learner agency is the capacity to make your own choices and take meaningful action towards achieving the learning goals. This means having the ability to regulate affective, cognitive, and behavioural processes as learners engage with the learning environment (Code, 2020). Learners' ability to act relates to the structure and design of the learning environment and the extent to which all voices are able to contribute, and these contributions are valued (CAST, 2024).

Learning environments that support learner agency in their design should create a space for learners to make sense of the content through reflection and interaction collectively and on an individual basis. To support learner agency, the design of the learning environment requires examining the power dynamics, and recognition of the dimensions of culture and identity. Any bias identified as a barrier to learners exercising their agency needs to be examined (CAST, 2024).

In the next section, we will draw on personal anecdotes and reflections from teachers to demonstrate how the principles of translanguaging and UDL intersect to create an equitable and inclusive learning experience.

Lessons learned: personal anecdotes and reflections

Language as an Accessibility Factor

From the perspective of UDL, accessibility is paramount (CAST, 2018). Furthermore, within the UDL framework, language is more than a tool of communication; it is a bridge that connects educators and learners across diverse backgrounds, fostering inclusion, engagement, and a shared commitment to equitable learning (Lowrey, Hollingshead, Howery, & Bishop, 2017; CAST, 2018; Doran, 2015; Mayer, Rose, & Gordon, 2014). Translanguaging, the practice of leveraging multiple languages as resources for meaning-making, aligns with UDL's principle of multiple means of representation, action and expression and engagement (Cioe-Peña, 2022). By allowing learners to process content in their preferred languages, translanguaging minimises linguistic barriers, providing equitable access to information for participants with diverse linguistic backgrounds (Vasinda & Pilgrim, 2023; Cioe-Peña, 2022; Przymus & Alvarado, 2019). For example, the teacher can present a lesson in English and ask students to discuss the content in their own language, which allows for meaning-making. An effective way of creating opportunities would also be to allow students to express their knowledge in their local languages (Paudel, 2024).

More examples include providing options to relate content to their cultural, social and thereby contextual backgrounds and encouraging meaningful interaction. A deeper understanding of the application of the content in its context could be developed through engaging in different activities using participants' knowledge and skills. Creating activities which transform academic language into everyday language such as role-playing and songs would be beneficial to those learners who are unfamiliar with

academic language (Paudel, 2024). In addition, group discussions of the content in their home language and images of the content could be beneficial to the meaning-making process (Paudel, 2024).

In our conceptualisation and design of the course, we were aiming to create learning environments that accommodate the widest possible range of participants, regardless of their backgrounds, learning styles, or abilities. Language played a central role in this process. However, UDL has been criticised for being a framework with complex terminologies and culturally specific practices such as academic language and colonial pedagogies (Cioe-Peña, 2022; Fovet, 2021; Adam, 2019). While these may seem like minor obstacles to university students, especially in the LMICs where the instruction of teaching and learning has always been predominantly in English (Brock-Utne, 2024), they have created significant barriers for some of our students.

Feedback from teachers participating in the course echoed this sentiment. Many participants mentioned feeling overwhelmed by technical jargon or academic language that, while second nature to some, was a source of frustration for others. An Afrikaans primary school teacher from South Africa expressed that she faced challenges in understanding certain terms. This difficulty in interpreting the meaning of these terms contributed to delays in submitting her coursework. For a busy teacher balancing a full-time teaching load with ongoing professional development, this additional layer of effort has diminished engagement and created a sense of exclusion.

A critical component of UDL is offering alternatives and scaffolds that make content universally approachable (Vasinda & Pilgrim, 2023; Lambert, McNiff, Schuck, Imm & Zimmerman, 2023). For us, this means embedding multiple forms of expression and representation. Instead of relying solely on written academic language content, we allowed for a submission of exams in audio format and simpler language. This was helpful as students had the freedom to explore meaningful responses to the instruction, without having the burden of a grammatically-correct and meticulous academic written response. Students also appreciated the images provided, like the UDL graphic organisers, and requested more such images of the concepts. These images assisted them in making meaning of the content. These strategies increased students' ability to express their views and engage in discussions. Implementing these strategies did not dilute the content; instead, it enriched it, making the learning experience more understandable. This understandability fosters a sense of ease and comfort among students.

The following section will highlight how language serves as a critical tool for creating psychological safety.

The Role of Language in Creating Psychological Safety

Psychological safety refers to an environment where students feel respected, valued, and confident to express themselves without fear of judgment (Rappolt-Schlichtmann, Todd

& Daley, 2020). In the UDL framework, translanguaging plays a vital role in fostering this sense of safety by promoting inclusivity, empathy, and engagement (Sanguinetti, 2024; Seymour, 2023). This principle was central to our application of UDL, as we were particularly interested in exploring how UDL strategies could be implemented in an African classroom. Teacher engagement was pivotal to our course delivery, as educators often feel the pressure to appear knowledgeable and competent among their peers. When course materials or instructions seem complex and ambiguous, it can alienate teachers, creating unnecessary anxieties which will ultimately lead to a culture of silence rather than collaboration (Creig, Smith, & Frey, 2019).

During synchronous sessions, we frequently observed limited engagement from teachers. This often stems from a lack of confidence in addressing the topic, ambiguity in the concepts discussed and unclear instructions (as mentioned earlier), and hesitation to ask for clarification. Such reluctance is particularly common in group settings, where concerns about peer perception can influence participation (Moscato, & Pedone, 2024). As designers and facilitators, it is crucial to prioritise clear and straightforward communication to create a supportive environment where every teacher feels confident and encouraged to contribute (Biesta, 2017, 2015).

In addition, by focusing on clear instructions and reducing language complexity, we helped teachers feel secure enough to make mistakes and learn openly. Translanguaging is the ability to adopt language that is free from unnecessary jargon, culturally aware, and welcoming to all levels of expertise (Cioe-Peña, 2022). It doesn't simplify ideas; it simplifies access to them. This subtle but crucial shift allows participants to engage deeply with the material and connect with each other, enriching the learning experience for all (Emihovich, 2024; Cioe-Peña, 2022).

Given the diverse cultural background of students, the next section will delve into the significance of language in promoting effective cross-cultural learning experience.

Language and the Challenge of Cross-Cultural Learning

Cross-cultural learning environments are often linguistically complex, with participants bringing diverse experiences, norms, and languages (Itoi, 2024; Cioe-Peña, 2022). With this cohort, we had both English speaking and English second language participants from varying teaching and learning environments, locally and internationally. The participants were based at schools for the blind and visually impaired, centres for persons with intellectual disability and mainstream schools. Without intentional design, these differences can become barriers to engagement. Translanguaging transforms these challenges into opportunities by promoting mutual respect and understanding (Zhang, Wang, Zhou, Mao, & Xie, 2024; Padia, Cioe-Peña, & Phuong, 2024). For instance, embedding reflective activities where learners compare concepts across languages enriches cultural exchange. The facilitation of small group discussions on the concepts in their home language could be a way of overcoming these challenges and sharing in

larger group discussions could facilitate a cultural exchange. The different group discussions, as multiple means of engagement, create a space for cultural exchanges and overcoming linguistic complexities. Aligning with UDL, such practices enable all participants to contribute uniquely, creating a richer, more inclusive learning experience (Padia, Cioe-Peña, & Phuong, 2024; Cioe-Peña, 2022).

When designing courses for a global audience, it's easy to overlook phrases, idioms, or examples that may not resonate universally (Chita-Tegmark, Gravel, De Lourdes, Domings, & Rose, 2012). For instance, the application of UDL as a Western ideology which does not translate well in the African context led to confusion and disconnection for some participants in the course.

Feedback from teachers in the course highlighted this issue vividly. Most of the participants revealed how the practices of UDL could be impractical for the African context due to infrastructure, large classes and curriculum. These seemingly minor moments accumulate, reinforcing a subtle message that the course content was not fully designed with them in mind.

In response, we made a conscious decision to have an open discussion about UDL and allow for a broader cultural spectrum. This did not just enhance understanding; it also fostered a sense of belonging due to multiplicity of views which teachers could resonate with. For example, participants were encouraged to share their experiences during the synchronous sessions and in the asynchronous activities of the various concepts and principles of UDL and propose ways in which these principles could be implemented in their work environments. This activity not only encouraged sharing of ideas about how these principles could be adopted and implemented in our context, but also facilitated a cultural connection with these concepts. Language that respects and reflects the diverse backgrounds of participants enables teachers from around the world to see themselves in the material, strengthening their connection to the content and to one another (Padia, Cioe-Peña, & Phuong, 2024; Cioe-Peña, 2022).

Moving Forward: Toward a Language-Conscious UDL Framework

Language is too often underestimated as a component of inclusive course design, but participant feedback emphasises its pivotal role in shaping teachers' learning experiences. To truly embrace the principles of UDL, we must approach translanguaging as a living aspect of accessibility—one that adapts, clarifies, and connects.

Tailoring Language to Support Varied Expertise

Teachers enter professional development courses with a vast spectrum of experience and expertise (Moscato, & Pedone, 2024). Some may be familiar with the principles of UDL, while others are new to the concept. This diversity can create significant disparities in how participants interpret and respond to language within course materials. A one-size-fits-all approach can alienate some participants, particularly those

who may feel outpaced or left behind by content aimed at more experienced learners. This is, in any case, antithetical to the UDL approach which we were trying to model.

To address this, language in course materials must be adaptable, with entry points for participants of all knowledge levels (Rusconi, & Squillaci, 2023; Cioe-Pena, 2022). For example, it must be made accessible for participants who had not participated in programmes offered at higher education institutions with limited exposure to academic English. One solution we will be implementing is translanguaging, which will offer definitions and explanations at different levels of complexity. For instance, complex UDL terms will be explained simply in the main text, with additional resources available for those who wish to delve deeper. This approach will provide them with a clearer path into the content without feeling overwhelmed. At the same time, more advanced participants will appreciate the choice to explore additional resources without being bogged down by unnecessary simplifications.

Real-Time Language Adaptation in Facilitation

While static course materials can be refined over time, live facilitation presents unique language challenges. Facilitation in online courses demands flexibility, especially when linguistic diversity is high (Seymour, 2023). Translanguaging equips facilitators with real-time strategies to adapt language dynamically. This might include summarising complex ideas in multiple languages, using visual aids for clarification, or leveraging digital tools for instant translation (Cioe-Peña, 2022). These approaches align with UDL's emphasis on providing multiple means of representation, action and expression and engagement, ensuring that all participants can actively contribute and process information during live sessions (Klamn, 2024; Roch, 2024; Cioe-Peña, 2022; CAST, 2018).

Participants acknowledged the circulation of presentations before the sessions, as it enabled them to have the materials and search for complex words before the session commenced. This adaptability is central to UDL-informed facilitation. It requires an awareness that not all participants will connect with the material in the same way, and a commitment to bridging those gaps in understanding (CAST, 2018).

Conclusion

Students from diverse backgrounds, particularly from LMICs, often struggle with access, engagement and contextually relevant online courses. This struggle prompted us to relook at the design, delivery and outcome of a ten-week short course at the University of Cape Town. The intersection of translanguaging and UDL offers unique opportunities to minimise the struggles diverse students experience through considerations for language adaptation, local relevance of course content and multiple ways to present, teach and elicit student feedback. This can optimise the potential for students to

contextually connect with the course, increase engagement and foster co-creation of knowledge irrespective of the student's background. Furthermore, the value of online courses may increase, reducing some of the disconnectedness often felt by students due to culturally non-responsive content, teaching and learning.

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Access and Inclusion is Everyone's Business! Promoting Universal Design Beyond the Classroom

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ABSTRACT

There is growing interest in Universal Design[1] as an approach to reduce barriers and give all learners equitable opportunities across the tertiary sector[2] (Higher Education[3] (HE) and Further Education and Training (FET))[4] in Ireland (Healy et al., 2023). With the rise in recognition for Universal Design there is

[1] For the purposes of this article, Universal Design is described as the design and composition of an environment or service so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability (Centre for Excellence in Universal Design, 2025).

[2] The Tertiary sector encompasses both Higher Education and Further Education and Training. A National Tertiary Office was established in 2022 with the ambition of a unified tertiary education system in Ireland. Twenty-three new tertiary degree programmes were launched for the academic year 2023/2024 across 11 locations and 5 fields of provision including Business, ICT, Arts, Engineering, Manufacturing & Construction and Health & Welfare. These are part of the development of new progression pathways through further education to higher education. A tertiary course is one that commences in an Education and Training Board (ETB) and continues in a Higher Education Institution (HEI), culminating in the award of a degree.

[3] Education at universities, technological universities, institutes of technology, and other education institutions, with qualifications of Levels 6–10 on the National Framework of Qualifications (NFQ) for Ireland. The Higher Education Authority (HEA) is the statutory planning and policy development body for higher education and research in Ireland.

[4] Further Education and Training or FET offers a wide variety of life-long education options to anyone over 16. FET includes apprenticeships, traineeships, Post Leaving Cert (PLC) courses, community and adult education as well as core literacy and numeracy services. FET courses and programmes are provided through the Education and Training Board network throughout Ireland as well as through other local providers. FET courses are provided at Levels 1-6 on the NFQ.

an increasing interest in training and development in the new concepts. However, most professional development opportunities which include Universal Design are aimed at teaching professionals.

This paper describes how the authors are expanding the reach of Universal Design from a teaching and learning focus to be widely adopted by all staff in tertiary organisations. The authors outline the development of a national professional development opportunity for student support and engagement professionals in Ireland: The Digital Badge for Universal Design Beyond the Classroom (the Badge).

The paper highlights the scarcity of professional development opportunities for professional staff working in tertiary education. The related lack of recognition of student support and its role in the student experience is described and offers a context for the development of the Badge. Central to this development was the genesis for a unique Irish FET/HE collaboration - developing a shared piece of professional development which captures and recognises good practice across the sector. Building on earlier work in the area of UDL in teaching and learning, this collaboration, development and operationalisation of the Badge marks a further critical innovation in the emerging Irish tertiary movement and is described fully in this paper.

This training recognises the integral role of support staff in student success and empowers them to utilise a UDL approach to provide an inclusive educational experience beyond the reaches of the classroom setting. The authors also examine how colleagues in their own institution have used their learning and knowledge gained from the Badge to implement Universal Design in student supports and services. Central to this success is a partnership programme which enables this implementation and widespread Universal Design capacity building.

Keywords

Access, Beyond the Classroom, Inclusion, Student Supports, Universal Design (For Learning), UDL, Professional Development, Training.

INTRODUCTION - Value and Recognition of Student Support

Universities are changing. So too are our students. There are more complex challenges to creating different conditions for teaching and supporting new types of students with diverse aspirations and academic talents (Raaper, 2021; Brooks, 2019). Higher education expansion also raises a series of challenges about the diversification of the sector and the changing nature of student support (Kelly et al., 2023). Universities know that student supports are important. However, both the status of the supports and the perception of them is vexed (Thomas, 2023). Student supports tend to be located outside the academic sphere, or 'beyond the classroom'. Student support professionals often operate in what Whitchurch describes as the 'Third Space' (Whitchurch, 2013). This paper will interrogate what happens beyond the classroom and describe an initiative that builds capacity and enhances development by leveraging UDL as an approach to our changing landscape.

This paper articulates the view that student supports should be seen as an integral and intentional part of student life. They should be as critical to a student's learning experience as teaching and research (Conway, 2012). Typically, however, the commentary on student supports can often come from a deficit discourse (McKay & Devlin, 2015; Gale & Parker, 2012; Bauer, et al., 2007). This deficit framework is further entrenched by commentary that refers to 'surviving' or 'resilience' and 'coping'

(Fleming, 2023). This lexicon suggests that student life and study are to be endured rather than intentionally managed and enjoyed (Fleming, 2023; Richardson et al., 2012).

This paper describes an approach that recognises that "it takes a campus to educate and graduate a student" (Noel-Levitz, 2008). Staff who are not classroom-based play an equally vital role in student success as those involved more directly in teaching and learning. In that context the authors (in collaboration with the sector nationally) led on the development of a digital badge in Universal Design that recognises and enhances the various roles and functions 'beyond the classroom'[5].

The authors describe the development of a programme that aims to build capacity to ensure that the needs of the full range of students are proactively designed in across the breadth of a whole institution's processes, systems, and approaches. The paper demonstrates the potential of Universal Design to offer a new and empowering approach for designing inclusive and empowering spaces and places for all. It also describes the context for this development locally in the authors' institution and nationally in a context where Universal Design is gaining significant recognition as an appropriate method of proactively embedding inclusion in an increasingly diverse educational environment (Evmenova, et al., 2024; Hickey, 2021; Raaper, 2021).

There are a number of frameworks which apply Universal Design to an educational context to promote inclusive educational environments. These include Universal Design for Learning, Universal Design for Instruction and Universal Design of Education. These are complementary rather than competing frameworks which can all be used to enhance the design of supports and services. This Badge focuses on the Universal Design for Learning framework. Universal Design for Learning or UDL is described as a framework to improve and optimise teaching and learning for all people based on scientific insights into how humans learn. The goal of UDL is learner agency; that is purposeful and reflective, resourceful and authentic, strategic and action-oriented (CAST, 2018). UDL is increasingly being implemented in a variety of contexts and its capacity to enhance the student experience is increasingly persuasive (Altowairiki, 2024; Galvin, 2024; King-Sears et al., 2023, Dalton, et al., 2019).

Context - national and institutional

'For students to succeed, the learning of teaching and support staff must also be well-supported'
(National Forum for the Enhancement of Teaching and Learning, 2021).

The context for the development of a digital badge coincided with the focus of the Irish National Access Plan to mainstream inclusion across the higher education sector (HEA,

[5] The Digital Badge framework has been developed by the HEA National Forum for the Enhancement of Teaching and Learning in Higher Education in Ireland to support continuous professional development in teaching and learning. Digital badges are awarded in recognition of completion of these short courses or microcredentials.

2022)[6]. The Badge was developed at a time when the potential for Universal Design was evolving and those working in access offices could see the opportunity to make access and inclusion everyone's business. This significant change in focus and approach prompted a recognition to develop new professional development resources to complement the strategic student-centred goals of Inclusivity and Flexibility articulated in the National Access Plan. In addition to the policy imperative, two toolkits were developed which offered practical resources and a focus on mainstreaming and inclusion. The Higher Education Authority's (HEA) National Forum's Seven Cs for Embedding Student Success (HEA National Forum for the Enhancement of Teaching and Learning in Higher Education, 2021) challenged higher education communities to 'reflect on student success, prompt meaningful conversations across institutions that will focus on what student success means within the context of their institution'. This whole-institution approach was also central to the development of the institution's Toolkit for Higher Education Institutions (Kelly & Padden, 2018).

The Toolkit was in fact being redeveloped at the time of this Badge's development and has since been published (Kelly et al, 2024). The Badge development team consisted of the University for All team in UCD, the AHEAD[7] team and the authors of the UCD Toolkit. An additional staff member was recruited to support the team and the process was funded through PATH 4 - the Irish Higher Education Authority's specific Universal Design funding which created significantly increased recognition and interest in this framework as a means to embed inclusion systematically across the sector.[8] This Toolkit is now offered as the means through which Ireland's ALTITUDE charter can be operationalised by institutions and organisations in the sector. ALTITUDE is the national charter for Universal Design in Tertiary Education, was also funded through PATH 4 and was collaboratively developed across the sector (ALTITUDE, 2024). Both the original and updated Toolkits offer a four pillar structure through which to view the educational landscape: 1) Learning, Teaching and Assessment; 2) Supports, Services and Social Engagement; 3) the Physical Environment; and 4) the Digital Environment (Kelly & Padden, 2018; Kelly, Padden & Fleming, 2024) (Figure 1). The redevelopment of the Toolkit included a significant reshaping of pillar two specifically, offering additional

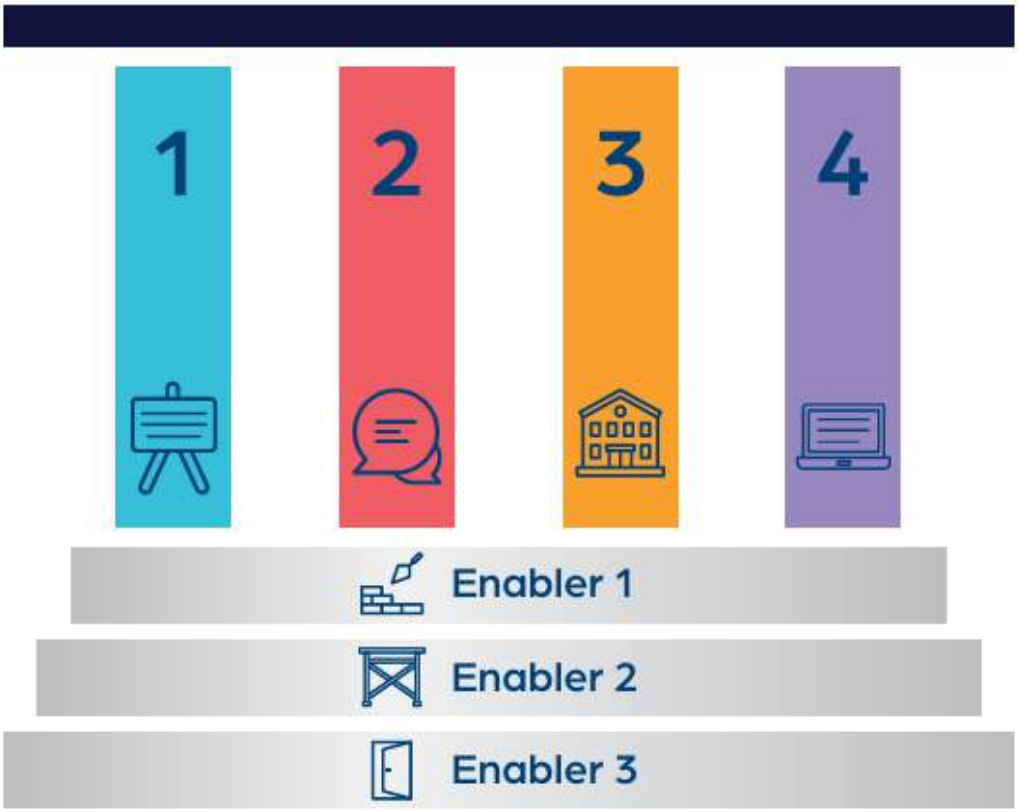
[6] Ireland's National Access Plan (NAP) sets out strategic objectives for ensuring the student population attending higher education institutions is representative of the diversity of wider society. The Plan is in its fourth iteration and identifies underrepresented student cohorts.

[7] Association for Higher Education Access & Disability. AHEAD is an independent non-profit organisation working to create inclusive environments in education and employment for people with disabilities. The main focus of their work is further education and training, higher education and graduate employment.

[8] The Programme for Access to Higher Education (PATH) is a dedicated fund, broken into five strands, committed to increasing participation by under-represented groups in higher education. It is administered by the Higher Education Authority in Ireland. Phase 1 of PATH Strand 4 in 2022 is a dedicated fund to support the embedding of Universal Design.

discourse and practical solutions for embedding Universal Design in the student support area.

Figure 1: *the four pillars within the Toolkit for Universal Design in Higher Education.*



The emerging rationale for focusing on student support was clear. While there had been significant focus on learning and teaching in the sector, the status of student support was less clear. What was also emerging with clarity was the awareness of the tertiary sector as a combination of further and higher education, with a range of shared opportunities and challenges. The final and clear impetus rested on the success of the Digital Badge for Universal Design in Teaching and Learning (the Teaching and Learning Badge) which had been awarded to over 2,000 recipients across Ireland at the time (now over 4,000 at the time of writing). The digital badge model had proved effective in offering accessible and engaging professional development opportunities to the sector. Critical to this success was the train-the-trainer model adopted by the National Forum, whereby participants complete a supplementary five-hour Facilitator Badge and support their colleagues locally with guidance and advice to in turn complete the Badge, typically forming communities of Universal Design learners and leaders. This model is sustainable as it prepares practitioners to pass methods of good practice and expertise on to others, who may then become facilitators themselves. It directly supports the uptake of Open Courses as part of the National Professional Framework for all Staff who

Teach (National Forum, 2016). Facilitators can roll out any of the 36 Open Courses as all materials are Open Educational Resources (OpenCourses.ie).

What was also clear from the feedback received from participants was that the FET and HE sector employ a range of professionals in support roles who would benefit from a targeted and accessible digital badge designed to support them in their role in student support and engagement. The sense of those staff working beyond the classroom gave the Badge its name and it became 'Beyond the Classroom'.

University for All

The University for All initiative is the authors' HEI's whole institution approach to access and inclusion developed in response to the previous perception that this was the remit of dedicated access services (Kelly, Padden & Fleming, 2023). As noted above, Ireland's National Access Plan has called for the embedding of Universal Design and a mainstreaming of access across institutions since the first National Plan was published and this formed the basis of the work carried out at the author's institution (HEA, 2022).

The University for All initiative democratises the work of inclusion and ensures that all stakeholders across the institution feel empowered to make changes as necessary to their day-to-day practice, including students, professional staff and faculty. This approach requires a robust capacity-building strategy allowing for ease of professional development. Digital badges and self-paced online training allow for participants to manage their workload and participate in shorter or longer programmes. In the authors' university a one-hour Universal Design introductory course is made available as standard to all employees of the University including adjunct and visiting staff. This one-hour course is delivered in three sections with a light touch reflection exercise used to verify participation and understanding. The 10-week Digital Badges in Universal Design for Teaching and Learning and Universal Design Beyond the Classroom are then offered as the next step to deepen understanding and facilitate implementation.

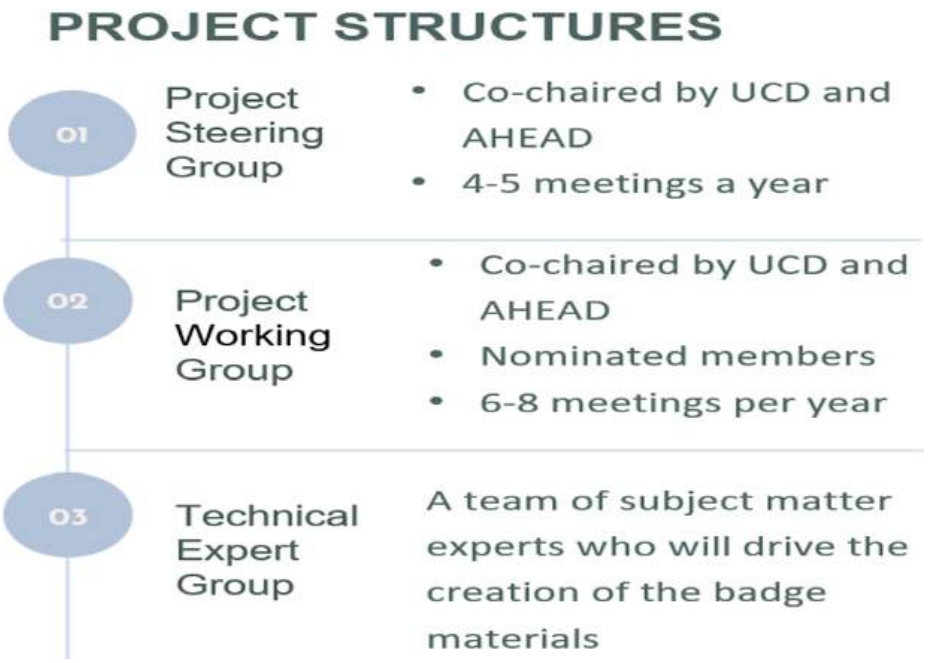
Badge Development Process - Consultation, Collaboration and Co-creation - Evolution of Governance Structure

In the spirit of making access and inclusion everyone's business, it was clear from the outset that the development of the Badge would need to be a collaborative and co-created initiative. It was envisioned that the Badge would be created **by** the tertiary sector **for** the sector, through an iterative consultation and collaboration process. The HEA's National Forum has been supporting the development of sectoral digital badges since 2017, and the original Teaching and Learning Badge was one of the first created and is by some margin the one with the highest level of engagement.

In order to maximise collaboration and buy-in, and also ensure effective co-creation and development, relevant stakeholders across the sector in Ireland, including student

bodies, were identified and representatives were invited to a consultation event. This event supported an open dialogue with the sector on the purpose, goals and learning objectives of the proposed Badge. The consultation also identified stakeholder requirements and reinforced the value of getting sectoral agreement for priority areas. There was clear support for documenting and agreeing on success criteria for the Badge and for gathering existing resources and tools in the sector for inclusion in the Badge. The consultation event was followed by the establishment of a national advisory committee 'the Steering Group'.

Figure 2: *Badge Development Project Structure*



The project structures reflected strong collaboration across the tertiary sector. They comprised the Steering Committee together with a Working Group and Technical Expert Group, all of which had representation from HE, FET and other relevant bodies across the sector including the HEA, Irish Universities Association, The Technological Higher Education Association, SOLAS (the State agency that oversees the FET sector in Ireland) and Education and Training Boards Ireland. Representatives included educators, student support professionals, accessibility experts, eLearning professionals and students representing the learner voice. The Steering Committee was representative of leaders in both Further and Higher Education who had both a strategic overview and the decision-making capacity to progress the aims and ambitions of the project.

The Steering Committee's terms of reference were to:

- ➔ Oversee the Project, including the development process and outcomes, ensuring alignment with relevant FET and HE sectoral strategies and policies.
- ➔ Oversee the development of a communications plan, which ensured the highest level of completion of the Badge across the tertiary sector.

The Working Group was made up of individuals who had experience implementing Universal Design on the ground within their organisations and institutions and had excellent working knowledge of what Universal Design looks like within different contexts and settings. As such, their role was to advise, review and provide feedback on the programme deliverables, based on sectoral expertise, to ensure high levels of engagement and impact. They were asked for examples of Universal Design beyond the classroom which could be included within the Badge materials to act as practical case studies of Universal Design in action for learners on the course. An open call also went out to the tertiary sector for examples of good Universal Design practice to ensure an equitable opportunity for those embedding Universal Design in their work to propose their implementation as a case study.

The Technical Expert Group's terms of reference were to create the tangible deliverables for the project informed by the other two groups' advice and feedback. This group advised, informed and guided the development of learning materials and associated resources. The Badge format and content were developed using the ADDIE instructional design model (Forest, 2014), (Kemouss, H., 2023). ADDIE (Analyse, Design, Develop, Implement and Evaluate) is a five-stage cyclical framework widely used by course developers to support a systemic iterative approach to the instructional design process of digital learning courses.

Figure 3: *the ADDIE Model*

The C.R.A.P visual design principles were applied (Williams, 2008), (Digital Learning Institute, 2025) and those elements of the Web Content Accessibility Guidelines (WCAG)

2.0 and 2.1 relevant to digital learning design were followed to ensure the development of accessible, engaging and cohesive multimedia content. The CRAP principles (Contrast, Repetition, Alignment, and Proximity) are the four foundational principles of visual design as discussed by Robin Williams (Williams, 2008) which can increase accessibility and enhance learner engagement when applied in the context of digital learning design. Prototypes of the learning materials were sent to the Working Group for a phase of testing, feedback and revision, checking against the success criteria developed for the evaluation phase.

On reflection, the structure of the Steering, Working and Technical Expert groups maximised the pace and effectiveness of the Badge development. The roles of each group were clearly defined, and this demarcation prevented any delays or duplication in developing the Badge. The process relied on engagement and agreement but did not require consensus on every aspect of the Badge.

About the Badge

The Badge is a free 10-week online course providing participants with strong practical expertise of the UDL framework and how to apply it to their own practice to enhance the student experience. The format mirrors that of the Teaching and Learning Badge with live webinars, self-directed modular content hosted on the National Forum virtual learning environment (VLE) and social (i.e. collaborative) learning via peer group sessions. There is an opportunity to critically reflect on and make a change to practice via a redesign activity - using a Plus One approach (Behling & Tobin, 2018).

The Badge content was specifically developed for student support and engagement professionals – anyone interacting either directly or indirectly with students beyond the reaches of a classroom setting, for example: those working in library or administration functions, student finance, registration, disability support, IT support, and campus/estates management. The words 'students' and 'learners' are used interchangeably throughout the course to reflect the varying terminology used in FET and HE institutions. Factoring in that some participants are not in directly student-facing roles and others work in outreach or alumni-related roles, the course prompts participants to consider that in certain circumstances the 'student' or 'learner' may be a potential or past student, member of the public or a member of staff who is interacting with their service, for example, for information, training, support or guidance - encompassing their wider audience.

Twenty case studies in video and text format from ten institutions form an integral part of the Badge content, showcasing the practical application of UDL to a broad range of roles and contexts beyond the classroom (See Table 1 for representative examples of Badge case studies). Case study contributors were selected following the Working Group process outlined above. The Badge development team travelled across Ireland, visiting

each location to meet and film staff and learners in their own settings. The case studies enable course participants to see examples of good UDL in action from their colleagues and learners representing a wide range of diverse voices, cultures and perspectives across the breadth of the tertiary sector.

'Practising what we preach' - Applying the Universal Design for Learning framework in the development of the Badge.

As with the Teaching and Learning Badge, this Badge has been intentionally designed using the UDL framework to provide an inclusive learning experience (Rao, 2021). Its design and content promote flexibility and choice and offer opportunities for sustained reflection and for participants to engage in peer learning with one another. Content is divided into five flexible, self-directed online multimedia modules with a choice of formats. The five self-directed modules are:

Module 1: Introduction to Universal Design

Module 2: Design Multiple Means of Engagement

Module 3: Design Multiple Means of Representation

Module 4: Design Multiple Means of Action and Expression

Module 5: Mapping the Learner Journey

Module 1 introduces the diversity of the learner population in Ireland and the UDL framework as a concept to support this diversity. Modules 2-4 takes participants through the three guidelines relating to each of the three main UDL principles. Case studies showcase the guidelines in action. Participants are supported with a detailed course schedule, live webinars, weekly prompts, drop-in sessions, video and text navigation and information guides and a range of self-assessment knowledge check activities. Webinars are recorded to accommodate busy schedules. The Badge rollouts use a peer group format where participants collaborate in groups of three or four to generate knowledge from one another's diverse ideas and perspectives. Group agreements, clear goals and expectations and a group facilitator all support the creation of a safe and supportive group environment.

Peer activities have been developed to provide an opportunity for brainstorming and small group discussion. Guided by a template, participants work together to reflect on and apply the knowledge gained about each UDL principle in Modules 2-4 to scenario-based activities which focus on aspects of student supports and services. The final Module is a reflective one which includes guidance for participants in the process of making a journey map; a representation of the steps a learner takes when engaging with the participant's service. This provides participants with an overview of learner interactions with their service which in turn helps them to identify 'pinch points' and

supports the identification of areas for both short and long-term development to facilitate a more universally designed and effective service, support or learning environment.

Participants discuss the Mapping the Learner Journey activity with their peers. The activity and peer discussion help participants to identify a small area for their redesign activity. This is a light touch task in which participants select one area of their current practice, design, implement and evaluate one small change to enhance their practice in line with UDL. There is a choice of submission format (text or video) and a template and a bank of previous redesign submissions to support participants. Prior to submission, participants present and discuss their redesign to their peers in the final peer group session.

Piloting of the Badge

Once the Badge materials had been developed, the Steering Committee and Working Group agreed that a closed pilot rollout of the Badge should be facilitated for testing. Under direction of the Steering Committee, expressions of interest were invited for pilot participants from staff currently working in student support and engagement in Higher Education or Further Education and Training in the Republic of Ireland. This pilot ran alongside the annual national rollout of the Teaching and Learning Badge which is coordinated by the author's institution and AHEAD and supported by the HEA National Forum. These national rollouts have proven instrumental in increasing the number of Badge holders with typically over 1,000 individuals signing up each year. The national rollout model is made possible by local facilitators across the country who are Universal Design and UDL veterans (as explained above).

From the two hundred expressions of interest received, 105 individuals were selected to participate in the pilot by the Badge project development team. 33% of participants were from Further Education and Training, 64% Higher Education and 3% were from organisations which work across both sectors. Thirty institutions were represented in the pilot with a wide variety of student support and engagement roles (See image below). It was also decided that there should be a good balance of colleagues who had previously completed the Teaching and Learning Badge and those who were 'new' to Universal Design and the Badge concept. Eight current facilitators of the Teaching and Learning Badge kindly agreed to facilitate the pilot rollout which took place from October to December 2023. 91 participants completed the pilot and submitted a redesign activity representing an 87% completion rate.

Figure 4: *Examples of roles and work areas of participants on the pilot rollout.*

The Badge development team reviewed the redesign submissions to see how participants were applying the UDL framework within their own work and contexts. We have listed below some common themes or areas of focus that emerged (referencing the most relevant UDL Principle and Guideline in brackets):

- Communications with learners and colleagues – using accessibility guidelines to review and update materials, considering the amount of information and what information is relevant to the audience at that moment in time (Design Multiple Means of Action and Expression: Options for Interaction).
- Webpages – similarly to the previous point, for example, restructuring student support pages for ease of understanding and navigation (Design Multiple Means of Action and Expression: Options for Interaction).
- Student Support materials and resources – making changes to build in flexibility of content and accessibility (Design Multiple Means of Action and Expression: Options for Expression and Communication).
- Offering options for engagement with supports – moving timing/format of support sessions, hours of offering and offering online options (Design Multiple Means of Action and Expression: Options for Expression and Communication).
- Workshops – trialling a workshop or training on study skills, time management or assistive technology with peer collaboration (Design Multiple Means of Engagement: Options for Sustaining Effort and Persistence).

- Learner Voice - adding in additional learner consultation and feedback on student supports e.g. via a Microsoft Form or focus group (Design Multiple Means of Engagement: Options for Welcoming Interests and Identities).

Evaluation of the Pilot

Anonymous data and qualitative feedback was gathered from pilot participants and facilitators via questionnaires both at the end of each online module to collect suggestions for how the module could be improved (for example, technical fixes or alterations to the content: variety, learning activities, meeting objectives) and; at the end of the course to gather overall feedback.

This feedback proved to be overwhelmingly positive with 97% of respondents saying they would recommend the Badge to a colleague and 100% of respondents said the Badge met their learning objectives. Participants liked the fact that the Badge represented a professional development option specifically tailored for their roles in student support and engagement:

"Usually, staff who aren't teaching get left out – or regarded as less important than teaching staff but Universal Design is essential for all staff."

"I absolutely loved that there was an option for staff who aren't teachers to engage with Universal Design."

They were overwhelmingly enthusiastic about the inclusion of opportunities for peer collaboration:

"One of the most valuable aspects for me was being part of an active peer mentor group. The dynamic exchange of ideas, experiences, and support within this group significantly enhanced my experience. This group was not just a source of insight but also a motivational factor that contributed greatly to my overall positive experience with the course."

The majority of suggestions to enhance the Badge focused on streamlining navigation through the VLE and the online modules, providing more knowledge check opportunities as well as reviewing the language and the course content to ensure it was as accessible, relevant and tailored as possible to the target audience. Participants who were not directly student facing felt that the content should be adjusted to highlight its relevance to them, for example by providing a wider range of examples. The Badge content was subsequently updated to incorporate the evaluation feedback and reflect the new UDL 3.0 framework prior to its national launch in Autumn 2024. As part of these updates, Modules 1-4 now include an optional supplementary interactive Knowledge Check and Review.

The national launch of the Badge was in October 2024 with 351 participants. It is to be rolled out at a national level in a MOOC-style format once a year in tandem with the

Digital Badge for Universal Design in Teaching and Learning with shared webinars and both badges being hosted on the HEA National Forum for the Enhancement of Teaching and Learning OpenCourses platform.

The Professional Staff Partnership Programme and Local rollouts

The University for All Professional Staff Partnership Programme was established in 2023. The partnership programme model has proven highly successful when it was first rolled out for the institution's faculty in 2021 (Padden, 2023). The Faculty Partnership focused on the implementation of UDL in teaching, learning and assessment and Faculty Partners actively recruited and facilitated their colleagues to undertake the Digital Badge for Universal Design in Teaching and Learning over a three year period, made possible through strategic funding from the Higher Education Authority's Fund for Students with Disabilities. Faculty Partners received set funding of €10,000 to embed UDL in their classrooms, to experiment with diverse learning materials, teaching methods and assessment strategies to support the diversity and variability of their students. Faculty Partners have showcased how UDL can be employed in a variety of contexts and disciplines to the benefit of all students; not just one or other group of learners (Padden, Elliott et al, 2023). They have been instrumental in convincing their teaching colleagues to complete the Digital Badge with now close to 500 faculty and teaching staff having received it in the author's institution (Fleming, et al., 2024). The Badge has been a recognised valuable piece of professional development within the teaching community of the University and anecdotally the UDL framework has become a common language or currency within teaching and learning discussions. Universal Design is now recognised as a core principle within the new University Strategy for enhancing the student experience (UCD, 2024).

It was always intended that a similar partnership be created for professional staff to offer parity of esteem, and the development of the Beyond the Classroom Badge meant that there was comparable training for professional staff to roll out. Again, the HEA's PATH 4 funding was essential to establishing this programme. A university-wide recruitment campaign received high interest from across the institution, reflecting an appetite among professional staff colleagues for Universal Design. Applicants were assessed on three key criteria:

1. Commitment to and/or advocacy for access and inclusion
2. Experience of engagement, leadership and/or facilitation of development or training for colleagues
3. Evidence of Continuous Professional Development

In this way, applicants could demonstrate their ability to influence their colleagues within their schools/units, and hopefully across the institution. The selection panel appointed ten staff members to the programme. They are drawn from programme,

international and school offices, student support, administrative, IT and registry functions. Some are student facing while others support wider teams of colleagues.

Staff Partners implement UDL outside of the classroom, in student support and engagement settings, embedding it in processes, systems and ways of working. All Staff Partners completed the Beyond the Classroom Digital Badge as part of the pilot rollout with the intention that they advertise, recruit for and encourage their colleagues to also undertake the course. The Programme offers the same structure, support and funding from Access and Lifelong Learning as its faculty counterpart. Based on our learnings from the Faculty Partnership Programme, Staff Partners could receive up to €10,000 in funding for their Universal Design implementation projects and they were required to put forward a spending proposal. A standardised format for these proposals with suggested themes and clear spending deadlines was introduced, which were reviewed and clarified before funding was approved. They have also formed a community of practice with regular meetings to share progress, ideas and solutions. The projects that have emerged over the course of the year focused on different areas of the student lifecycle and experience and encompass a wide-ranging application of the UDL framework. Importantly, these projects are offering sustainable solutions which become part of the fabric of the institution and are embedded in workstreams which outlive the initial funding.

Local Rollout Step 1: Recruitment & Promotion

Before immediately offering rollouts of the Badge locally, Staff Partners advertised and socialised the idea with their colleagues, teams and units to gauge interest and highlight the benefits of Universal Design. In a workshop in December 2023, Staff Partners identified the benefits of the Badge in an exercise designed to support their facilitation of and recruitment for it. The findings from this workshop align with research on good practice for capacity building and strategic leadership in large complex organisations. The Badge provides an opportunity for sustained reflection and to ask why we do the things we do (Chobot Hokanson et al, 2019; Han, 2023). The content is relevant, and work based. It has tangible outputs, and the Plus 1 approach is easily achievable and practical. It also highlights what participants are already doing well. It enhances participants' skillsets in managing the impact of change, and provides increased self-awareness (Boggs et al, 2021; Becerra, 2022). It assists with organisational understanding; helps participants make sense of University for All and inclusion and what is within their sphere of influence and control (Covey, 2020). The Badge empowers participants and provides them with agency.

While the idea that UDL provides a lens for faculty to future proof their teaching and to make it more responsive to a diverse range of learners, the correlation between Universal Design and efficiency or 'smarter working' has been a convincing one for

professional staff. By adopting a UDL approach, professional staff are making systems and processes more flexible, more responsive to diverse audiences.

Local Rollout Step 2: Operational Support

To further trial the Beyond the Classroom Badge before its official launch, the Staff Partners facilitated two local rollouts within the author's institution - in Spring and Summer 2024 respectively. The two offerings provided participants with options which best suited their workloads and busy periods. The Spring rollout offered participants the option of doing a half day workshop in place of the peer group model. Although the peer groups are a more sustained model of peer engagement, the workshop does provide a format that suits some colleagues and is a valuable opportunity to exchange ideas and for colleagues to meet from across the University. One assumption we did make was professional staff's familiarity with the institutional VLE, Brightspace, which hosted the course content. While faculty and teaching staff are very familiar with using Brightspace regularly, professional staff predominantly do not use it as part of their day-to-day work. As a result, there were additional navigation issues that arose in this first rollout. A simpler navigation video was included before the start of the second rollout along with a more thorough demonstration of how to navigate the content included in the first webinar.

Local Rollout Step 3: Redesign & Feedback

Based on feedback from the workshop, Badge participants sought examples and suggestions for their own redesigns. While many of the case studies featured within the Badge content are informative, they are often large projects that encompass many different UDL guidelines and moving parts. As explained previously, the redesign is a light touch task to show evidence of engagement in the Badge and is relatively straightforward, but it can represent a more significant piece of work and appear more intimidating for colleagues, particularly as it is not graded. It can make it difficult for participants to visualise what they should do for it depending on the context of their work. Making use of examples is a well-established practical tool to support and scaffold learning. Learners can use examples, working towards problem solving, developing those strategic networks and managing cognitive load effectively (Renkl & Atkinson, 2003; To & Carless, 2016). The redesigns from the national pilot were shared with participants to provide them with exemplars with which to make quality judgements about their own redesign activities. Unsurprisingly the peer engagement was a key highlight for participants on the Badge:

"I found the peer group meetings very useful and a great opportunity to meet colleagues across the university."

"My experience of Peer Engagement was at the workshop. I thought it was very well organised and the materials appropriate. The participants were very interested, engaged and energised so for me everything was perfect."

"It was really well organised. We as a Peer group set up our own chat group so we could easily communicate with each other in between meetings."

The Badge then not only provides colleagues with a shared understanding of UDL but also forms a community of professional staff who are working collaboratively and collectively towards a University for All.

Principles of Capacity Building in the Third Space

Through our work on these digital badges and in response to the evolving needs of professionals within higher and further education and training, we have developed a set of guiding principles for capacity building in the "third space"—a space that bridges traditional boundaries between academic and professional roles (Whitchurch, 2013).

Contextualising Content: Ensure that the material or activities are relevant to the participants' environment, experiences, and goals. By grounding the content in real-world applications, students or participants can see its value, making it more engaging and meaningful. This could involve tailoring examples, case studies, or projects that reflect the participants' lived experiences or current professional challenges.

Autonomy and Structure: While providing structure is important to guide progress, giving participants a sense of autonomy within that structure allows them to take ownership of their learning. A contained, self-paced structure ensures there is enough flexibility for individuals to move at their own speed while staying within the defined framework. This balance between freedom and direction can foster intrinsic motivation, making people feel more empowered to contribute and stay committed.

Maximising Peer Engagement: Encourage collaboration, discussion, and peer-to-peer support by creating opportunities for participants to engage with each other. This could be through structured peer group meetings to support and encourage deeper engagement both with the content and other professionals working in similar contexts. Peer engagement helps build a community of learners, where individuals learn from each other's perspectives and experiences, enhancing collective growth.

Work with the Willing: Focus on engaging those who show interest and willingness to participate. By starting with an enthusiastic core group, you can create momentum and build a positive, engaged culture. Their enthusiasm can act as a catalyst to attract others. It is essential to understand that not everyone will be on board initially, and forcing participation can be counterproductive.

Finding Common Ground Rather than Consensus with Stakeholders: Rather than striving for complete consensus on every issue when developing capacity building opportunities, which can slow down progress, focus on finding common goals or shared

values. This allows for diversity of thought while maintaining a unified direction. Emphasize that differences in opinion or approach are not obstacles but strengths that contribute to innovation and broader perspectives.

Contained, Self-Paced Structure: Design the capacity building elements so that they offer clear, defined boundaries but allows participants to progress at their own pace. For example, a modular approach where learners can choose which sections to tackle based on their current needs or interests. This approach can cater to varying skill levels, availability, and learning styles, promoting sustained engagement over time.

Work at All Levels: Create a clear development structure which includes those working at all levels allowing for a bottom up and top-down approach in the capacity building development. This ensures that on a practical level the input will resonate with participants while also including the perspective of senior management working at a strategic level who may be able to advise on how to get buy-in at that level in organisations.

Involvement at Each Development Stage of Those Involved in Student Support: Involving key stakeholders—whether they are students, educators, or support staff—at every stage of the training development is vital. This ensures that the course resonates with all involved and that the structure and content reflect their needs and expectations. Their engagement throughout the process helps them see themselves in the final outcome, which fosters a sense of ownership.

Conclusion

The launch of the Badge represents a range of critical initiatives in the sector. The Badge helps to move towards parity of esteem with academic colleagues and recognises the importance of student support as an intentional and integral part of the student experience. The Badge allows for the important work of professional support staff to be acknowledged and showcased through knowledge sharing activities, equivalent to their teaching peers. It highlights the range of activities and possibilities 'beyond the classroom' that enhance the learner experience. The mixing of those who teach and those who work primarily beyond the classroom when participating in the Badge reinforces this recognition and value. The work of University for All typically sits within the 'third space' as it is cross institutional collaboration with involvement from academics and professional staff as equals - both are needed in order to make inclusion become integral to what we do. The language of UDL is now shared and no longer the preserve of those who teach; professional staff are empowered through the language and practice of universal design to embrace change. Finally, and most importantly, the Badge has prompted individuals to leverage their expertise, creativity and commitment

to Universal Design to make positive changes to their professional lives and the experience of our students.

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Appendix

Table 1

Representative examples of the Beyond the Classroom Case Studies grouped by the UDL Principle and Guideline which they illustrate. (Relevant UDL 3.0 Consideration referenced in brackets).

Principle	Guideline	Organisation	Case Study	Key Takeaways
Design Multiple Means of Engagement	Options for welcoming interests and identities	Cavan Monaghan Education and Training Board	Learner Support Hubs	Flexible format (online, drop in or 'by appointment' options) and moveable locations optimises choice and autonomy (UDL 7.1)
		Vision Ireland	NaviLens wayfinding and information app to support campus accessibility	Assists users to find key services and locations around the campus thus supporting a physical learning environment which everyone can navigate independently, increasing autonomy and minimising distractions. (UDL 7.4)
	Options for Emotional Capacity	Maynooth University	MILO – psychology-led learning platform	Provides 24/7 universal access to academic and wellness support resources (UDL 9.2)
Design Multiple Means of Representation	Options for Language and Symbols	Atlantic Technological University	Library Blog and Social Media Microlearning	Use of library's blog posts and social media content to chunk information into 'informal teaching moments' explaining key terminology and providing 'just in time' self-directed multi-media library micro-resources (UDL 2.1)
Design Multiple Means of Action and Expression	Options for Interaction	Munster Technological University	Personal Digital Toolkit	Optimises, bespoke/self-directed access to tools and assistive technologies. (UDL 4.2)

				Branding as Personal Digital Toolkit rather than assistive technology mainstreams the idea of technology to support learning – it can benefit all.
	Options for Strategy Development	University College Dublin	Financial Supports and Money Management Guide	Student co-created flexible, self-directed financial and budgeting resources, including models and checklists to build student autonomy and ability to plan, anticipate challenges and think strategically. (UDL 6.2)

Participant Feedback Form

Thank you for participating in the course. We would be grateful if you would take a few moments to complete this anonymous feedback form so that we can evaluate the overall effectiveness of the Digital Badge course and improve it for the next time we roll it out.

Please note that any comments provided in this evaluation may be used as examples of feedback in reporting and/or presentations/promotions of the Digital Badge.

- What is your role or job title?
- Would you recommend the Universal Design Beyond the Classroom Digital Badge to a colleague? Y/N
- Did the Badge meet your learning objectives? Y/N

- Please rate the following:

	Poor	Average	Good	Very Good	Excellent
Your overall experience and the quality of this pilot					

The Digital Badge content (Online Modules)					
Webinars					
The support your peer group provided					
The support the Badge facilitators provided					

- Please answer the questions below indicating how strongly you agree or disagree with the statements provided:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The overall course structure and format was well laid out and easy to follow.					
This Digital Badge deepened my understanding of Universal Design					
My learning on this Digital Badge has had/will have a significant impact on my practice.					
The approaches to teaching on this course and the materials provided supporting my learning. I enjoyed being able to learn in this way at my own pace.					

- Please tell us about some elements of the digital badge and/or your experience which you particularly liked.
- Please tell us about any areas of the Digital Badge that you feel should be improved. We would love to hear your suggestions for these improvements.
- Any other comment

Designing a Digital Literacy Course Through a UDL Lens

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ABSTRACT

Research shows that, despite living in a digital world, many higher education learners struggle with computer literacy (IEEE, n.d). Because many institutions rely on technology in the classroom, with nearly all schools using some form of learning management system (LMS) and many offering asynchronous course options, these digitally illiterate learners fall short of their potential and may conceivably drop out of higher education altogether. To address this learning barrier, two instructors at a small, private university in the United States designed Introduction to Digital Literacy (IDL 115) in the summer of 2022. Using Universal Design for Learning (UDL) as a guiding lens for development, the designers created a survey course of digital knowledge to teach learners the skills that will help them succeed in various aspects of their lives (academically, professionally, and personally). Discussed are the ways in which UDL was implemented into the course design, the considerations of what digital skills to include, and the results of the course from the perspective of the learner. Ultimately, it was found that digital literacy is necessary for success in higher education, and a course designed with UDL in mind can better help support the student.

Keywords

Digital Literacy, Universal Design for Learning (UDL), Higher Education, Curriculum Development

INTRODUCTION

Nearly all aspects of our contemporary world exist partially, or wholly, online. Whether it be banking, shopping, or communicating (via text messages, social media, etc.), we are spending more and more time in a digital environment. Education, K-12, and higher education are no different. In fact, nearly all institutions of higher education, whether on-ground, online, or hybrid (offering both on-ground and online courses), use some form of Learning Management System (LMS), with Canvas and Blackboard being two of the leading options available (Bouchrika, 2024).

Because of this, it is necessary for learners to have some form of technological expertise to succeed in higher education, as many instructors require all, or nearly all, of their

assignments and assessments to be submitted through the LMS. However, without an adequate understanding of the digital world, many higher ed learners struggle to navigate the digital classroom, which includes accessing notes and supplemental resources as well as completing assignments/assessments.

While many people, especially those in higher education (including instructors, administrators, and counselors), believe that learners are proficient in online arenas, including LMS, this is a fallacy. Of this digital divide, Khan et al. (2020) write, "[I]n spite of the widespread adoption of digital technologies, digital inequalities persist in terms of ICT [information and communication technology] access, usage, and skills, and outcomes, [which] threaten…the sustainable development of civil society" (qtd. in Choudhary & Bansal, 2022, p. 225).

It is this digital divide that is actively hindering many learners from reaching Student Learning Outcomes (SLO) in the classroom setting. To learners, classes, both online and asynchronous, pose many barriers. In 2021, a survey created by Western Governors University found that 20% of learners struggle with computer literacy (IEEE, n.d.). This statistic is troublesome, as it is vitally important that students know how to use technology to be successful in their studies.

In the summer of 2022, a course entitled "Introduction to Digital Literacy" (IDL 115) was developed at a small, private university in the United States. The goal of this course was simple: through a survey approach, teach learners basic digital skills that can help them succeed in other college classes. Designed as a semester-long foundation course, it incorporated hands-on activities and real-world applications to ensure that students could effectively navigate the digital demands of higher education.

The following explains the ways in which IDL 115 was developed through a Universal Design for Learning (UDL) lens. Each element of the course design process, including content delivery and assessment methods, was carefully crafted with UDL guidelines to create an inclusive and adaptable learning environment. This intentional approach helped identify and remove potential barriers to learning, ensuring that students of all abilities and learning preferences could successfully engage with the digital literacy curriculum.

Background

The university is a private, non-profit university in the United States that offers various undergraduate, graduate, and certificate programs. Nestled near the state's capital, the campus is centrally located for many learners to commute. The university consists of three semesters per year, with both seven-week and fifteen-week class options; this structure allows learners to begin classes six times a year. Additionally, the school will accept any incoming student, regardless of past success in their educational experience. This

open-access model affirms the university's belief that everyone should have a right to a college degree (Roueche & Baker, 1987).

According to the university's website, around 3000 students are enrolled in either a part-time or full-time capacity. Also noted on the website: the learner population served at the school is 82% female, 93% from the state, 56% of color, and the median age is 29. Many learners who attend the university are either first-generation college students or are returning to school after a long hiatus from their last graduation. The typical learner at the university works full-time, is raising a family, and is pursuing their education as a full-time student. Learners at the university are very diverse in age, experiences, prior college, and academic background, thus resulting in a varied group of abilities and numerous barriers to overcome.

The university was an early adopter of the Universal Design for Learning (UDL) framework in higher education. In 2016, UDL was declared the pedagogy for the entire university after receiving a three-year grant for faculty training in small communities of practice in the principles of UDL. Since 2016, over 100 faculty members, both full-time and adjunct, have been trained in incorporating UDL principles into their classes.

Prior to the development of IDL 115, all students were required to take a general computer applications course. This course, CA 101, was designed to focus primarily on Microsoft Office Products (Word, Excel, and PowerPoint) and included a unit on the basics of the internet. Due to the increasing number of digital natives, however, formal training in a Word processing or presentation program was not likely needed since many learners already had experience with similar software. CA 101 was discontinued, but there was still a need for a technology class to fulfill the accreditation requirement for Health Sciences. This led to the development of IDL 115. However, during the development of this course, it was recognized how vital digital literacy skills are for learners, both inside the classroom and outside of it.

Course Design

According to the American Library Association (2013, p.3), digital literacy is defined as the "ability to use information and communication technologies to find, evaluate, create and communicate information, requiring both cognitive and technical skills." Digital literacy skills increase productivity in various aspects of life and, therefore, are essential for all learners (Shahrokh & Milla, 2021). Depending on whom you ask, there are various skills that make up digital literacy. Vercruyssen, et al. (2023) recognize that while there are basic frameworks for digital literacy, older adults need the most basic skills to be successful. Unfortunately, current frameworks do not directly address this need. Since the university has a high adult population, the developers of Introduction to Digital Literacy wanted to consider even the most basic skills to be included in the course.

During the early stages of developing IDL 115, a quick internet search provided many differing frameworks and competencies from around the world. The International Centre for Technical and Vocational Education and Training, an initiative of The United Nations Educational, Scientific and Cultural Organization (UNESCO), had a repository containing more than 30 frameworks from over 20 countries *(Digital frameworks*, n.d.). While many of the frameworks had similarities, no two had the same skills listed.

Ultimately, the developers of IDL 115 decided to use the digital literacy skills from the Irish Internet Safety Awareness Centre as a basis for the course build. The competencies put forth by the Irish Internet Safety Awareness Centre were funded by the Department of Education and co-funded by the European Commission (Webwise, 2017). The seven skills included:

- Critical Thinking (analyzing and evaluating digital information)
- Online Safety (cybercrime and security)
- Digital Culture (social media and general digital communication)
- Collaboration and Creativity (working and presenting with others)
- Finding Information (research and source evaluation)
- Communication and Netiquette (proper digital social skills and digital ethics)
- Functional Skills (using digital apps/programs for a purpose)[1]

The developers of IDL 115 took these digital competencies into consideration as they created the overarching structure of the semester-long course. Each of the offered modules addresses at least one of the digital literacy competencies; the end-goal is to allow learners the opportunity to gain the confidence and comfort of understanding and navigating a digital environment. Within each of these modules, various low-stakes assignments (such as multiple-choice quizzes with unlimited attempts) and larger stake projects were developed to help foster a sense of exploration and learning for the learners.

Several assessments in the course are research-based, therein allowing students to apply analytical and research skills while developing digital competency. In one key project, learners investigate a real-life cyber-attack. Through this research, students analyze how cybercriminals deploy malware for malicious purposes. The project also helps students understand protective measures that they can implement personally, while exploring broader societal safeguards against similar cyber threats.

[1] The 15-week course is structured as follows: Week 1: Introduction to Digital Literacy, Week 2: Office Basics, Week 3: Social Media Communication, Week 4: Professional and Ethical Communication, Week 5: Office 365 and Online Organization, Week 6: Cybersecurity, Week 7: The Evolution of Technology, Week 8: Reading Week (no classes are scheduled), Week 9: Using Library Sources, Week 10: Sources of Information (investigating “fake news”), Week 11: Digital Collaboration, Week 12: The Future of the Internet (The Internet of Things, A.I., and the metaverse), Weeks 13 and 14: Digital Production (learners work on their final project), and Week 15: Final Project Showcase (learners present their final projects to each other).

The course also emphasizes practical assignments. Students learn to customize an American Psychological Association (APA) template in Word; this allows them to create a reusable format that will serve them throughout their academic careers. An Excel component introduces students to essential spreadsheet functionality through a budget project, where they learn to use formulas, create charts, and format data effectively. In OneDrive, students learn to set up and maintain an organized file structure for easy document access. Additionally, learners use Outlook features, such as creating to-do lists and sending meeting requests, to enhance their organizational and collaboration skills.

Rather than isolating individual aspects of digital literacy or creating a hierarchical understanding of competencies, IDL 115 provides a comprehensive survey of skills necessary for becoming a successful digital citizen. This holistic approach guided the developers as they created course content and assessments. The course design intentionally weaves together various digital competencies, showing students how skills like research, document creation, data management, and communication tools work together in real-world scenarios. This integrated approach ensures that students understand the interconnected nature of digital literacy while developing practical skills that they can immediately apply across their academic courses.

The course structure intentionally incorporates Universal Design for Learning (UDL) principles at every level. From the visual layout of the Learning Management System to the variety of assessment methods, UDL served as the foundational framework for course development. This approach influenced everything from how course information was presented to how assignments were designed and submitted.

Developing Introduction to Digital Literacy Through a UDL Lens

Because the university consists of a diverse student population in terms of age and experience, the Introduction to Digital Literacy course aims to allow learners of all ages and experiences to succeed on an academic, professional, and personal level. Unfortunately, accessibility became the primary factor in the development of this course. UDL offers learners of various abilities and experiences to meet the demands of a course on level ground, which heightens the likelihood of success.

Some of the ways in which UDL is utilized in the course include Guideline 7 (Welcoming Interests & Identities), and Guideline 1 (Perception) (CAST, 2024). Information within the LMS (including class notes, assignment/assessment instructions, and supplemental readings and viewings) is given in multiple formats; this is done so that learners can access course material in a way that works best for them (consideration 1.2). This consideration takes into account the reality that many learners have learning preferences; thus, the material can be accessed and interacted with through audio and video recordings made by the instructor, printable PDF files, and weekly announcements

(consideration 7.1). This diversity of formats allows the student to choose how they prefer to receive the information.

When appropriate and aligned with the SLO, learners can choose how to complete the assignment/assessment; learners can create a video or audio response, complete a written response, or create a representative image (infographic) (consideration 7.1). It is important to note, however, that this choice is offered only when it aligns with the goal of the assignment. For some assignments, such as creating an APA title page or creating a Microsoft Excel workbook, the goal is to demonstrate proficiency in the software. Hence, an audio or video recording may not be appropriate to demonstrate the learners' ability to utilize the program accurately. However, with other assignments/assessments, allowing learners to choose how they complete their work gives them comfort and confidence to succeed.

The course curriculum also implements UDL Guideline 3 (Building Knowledge) by providing learners multiple opportunities to connect coursework to authentic, real-world applications while building upon their existing knowledge base (CAST, 2024). Through structured assignments, students develop practical skills, such as evaluating their digital footprint across social media platforms, implementing cybersecurity best practices, using digital tools to help increase productivity, and creating a personal budget using Excel. These contextually relevant learning experiences enable learners to integrate digital literacy concepts into meaningful applications while developing essential technological competencies (consideration 3.1 and 7.2).

Along with Guidelines 1, 3, and 7, the developers made sure to utilize UDL Guideline 5 (Expression and Communication), specifically in regard to scaffolding the final project over multiple modules/weeks so that the weighty assessment (a digital presentation) does not overwhelm learners (CAST, 2024). Students begin by establishing clear project goals and developing a strategic plan for their digital production. The course provides structured checkpoints throughout the semester where students can reflect on their current knowledge, monitor their progress, and decide what resources are still needed. This scaffolded approach builds support (consideration 5.3), which includes progress-tracking tools, opportunities for instructor feedback, and a final rubric supporting students in developing effective learning strategies while managing a complex, multi-step project.

Challenges Faced in the Development of the Introduction to Digital Literacy Course

While IDL 115 has been found to be overwhelmingly beneficial to learners, there were certain challenges recognized in the early development and implementation of the course. These challenges were addressed with the guidance of several specific UDL principles. Below are two examples:

One challenge found in the teaching of this course is the fact that not all learners have access to computers or other forms of technology (tablets, internet-capable telephones, etc.) at home. While the university offers computer access via its library and tutoring center, many students are inadequately prepared for the course, especially those taking asynchronous course offerings. The university addresses this challenge by providing loaner laptops, hotspots, and a well-equipped computer lab in the library for students in need. This comprehensive support system aligns with UDL consideration 8.4 (Foster Belonging and Community) by creating an environment where students feel supported rather than marginalized by technology needs (CAST, 2024). When students know they have equal access to necessary tools, they can develop a strong sense of belonging in the academic community, which can allow for a more specific focus on learning rather than causing them to worry about technological barriers.

A second challenge with IDL 115 is the simple reality that technology and digital information are continuously evolving. The advancements in generative AI, the Metaverse, and virtual and augmented realities necessitate a consistent updating of the information in the course. Because of this, Introduction to Digital Literacy is never the same course two semesters in a row. This evolution of tech requires the developers to actively update the course with each offering to make sure that learners are able to gain the most from each class. The consistent updating of the course's content aligns with UDL consideration 3.1 (Connect Prior Knowledge to New Learning) (CAST, 2024). Instructors are able to draw learners' attention to the connections between what technology was to what technology currently is. Ultimately, learners are asked to consider the future advancements of technology and its impact on their everyday lives.

Insights and Conclusion

Since its inception five semesters ago, the university's Introduction to Digital Literacy course has demonstrated remarkable success through its Universal Design for Learning approach. The course empowers learners to take control of their educational journey while developing essential digital literacy skills. Students who complete IDL 115 show increased confidence with technology and improved performance in subsequent courses, particularly in areas such as Learning Management System (LMS) navigation, assignment formatting, file management, and research. Given these positive outcomes, many instructors at the university advocate for making IDL 115 one of the required first-year courses. The integration of UDL principles throughout the course design has been key to fostering this student growth and achievement, according to both course developers and instructors.

At the end of the semester, learners are assigned a reflection assignment, where they are asked to discuss their own experiences in the course, including their own successes and challenges over the semester. These reflections have come back overwhelmingly positive,

with many learners recognizing the relevance of the course to their everyday lives. This sentiment is best captured in the following response by SR (2023): "The integration of real-world examples and practical applications made the learning experience not only informative but also immensely relevant." Additionally, these reflections often note how the learners appreciate the course design's focus on accessibility through the options for learning and completing assignments. With these reflections, it is clear how vital the utilization of UDL as a lens for design is in improving learner engagement and success.

The impact of this course and course's UDL design on the university and its student population is specifically evidenced on a university level by the fact that several schools at the university, including Nursing and Health Sciences, have included IDL 115 as a general education requirement for degree completion. The inclusion of this course as a requirement within these programs has stemmed from the feedback that learners have provided to their program directors and the faculty members of these various schools. Ultimately, the course is no longer viewed as an elective but is now a necessity for student success.

By creating Introduction to Digital Literacy through a UDL lens, the developers of the course were able to allow learners of various backgrounds and experiences to succeed in the course, which translates to improving their academic and personal lives. Because of this, it is strongly suggested that colleges and universities consider developing a similar digital literacy course through a UDL lens. In doing so, schools create accessibility to an important topic and skills that can benefit learners in numerous facets of their lives.

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Implementing UDL in Arushi: Unlocking the Potential of Students with Intellectual Disability

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ABSTRACT

Arushi Learning Centre is a self-supporting experimental unit for children with special needs at the Department of Special Education at SNDT Women's University, Mumbai, India. The Centre's primary goal is to provide specialized education to children with special needs who are not able to cope with the competitive existing mainstream education system.

The present case study focuses on implementation of Universal Design for Learning (UDL) in one group of five students at Arushi. The pedagogy adopted is aimed at providing access to functional curriculum to these students to make them motivated, knowledgeable, and goal directed.

Thematic curriculum approach is being followed at Arushi. The theme selected by the class teacher of this group is 'Modes of Transport'. The teacher uses multiple means of representation, engagement, and expression while teaching. She uses creative ways of making the teaching learning process relevant and meaningful for the students. It has been observed that there is a shift in the classroom behaviour of these students. They are more curious, motivated, and participative in the class. Their communication skills are improving and they share a better relationship with their teacher and peers.

The article shows how UDL is being used to support enhancement in learning of this group and how all students can access and engage in learning that recognizes them as expert students. Considering the positive outcome of following UDL in one group, it is being planned to implement the same in all the groups of students and ascertain how student variability is a resource that improves education for all at Arushi.

Keywords

Students, Intellectual Disability, Special School, UDL Implementation

INTRODUCTION

Intellectual disability has been defined and renamed many times throughout history. The most widely accepted definition of intellectual disability is that of the American Association on Intellectual and Developmental Disabilities (AAIDD, 2010). It defined intellectual disability as "Significantly subaverage general intellectual functioning existing concurrently with deficit in adaptive behaviour and manifested during the developmental period that adversely affects a child's educational performance."

In the last century, there has been a dramatic change in various aspects of life of persons with ID; healthcare, employment, education, recreation, and living situation (World Health Organization, 2000). One can find mention of intellectual disability in ancient Indian literature, but organised services have a history of just five decades. As per Right of Persons with Disabilities Act (RPWD Act 2016) a person with an intellectual disability may have significant limitations in the skills needed to live and work in the community, including difficulties with communication, self-care, social skills, safety and self-direction. The limited epidemiological data in India on intellectual disability suggest a prevalence of around 2–2.5% in the general population with an excess prevalence in males, rural areas and low-income groups (Narayan, 2007).

There are 561,744 children under the age of 14 with an intellectual disability in India, excluding autism, according to a January 2023 analysis of the National Statistical Office's 2018 report on disability in India (Iqbal, 2023). Government-funded inclusive education in government-aided and -recognised schools is a right of people with disabilities under the Rights of People with Disabilities Act of 2016, which includes autism and intellectual disability.

In addition, a 2012 amendment to the Right to Education Act (2009), which entitles all children between the ages of six and fourteen to free and compulsory education, brings disabled children under the ambit of the Act. In 2022 an amendment to the Act also mandates that all schools have at least one special education teacher for every 10 children with a disability enrolled up to grade V and one for every 15 students with a disability enrolled in grades VI, VII and VIII. There are limited facilities for children with ID in mainstream schools. Therefore, their progress on all metrics of performance remains slow. Children with special needs, not only need schools with trained therapists and educators, but also specialised pedagogy tailor-made for their abilities. Many mainstream schools are not able to provide these facilities to them and hence, parents are left with little choice but to get their children enrolled in special schools.

Learning Needs and Pedagogy for Children with Intellectual Disability (ID)

There is a wide range of needs in the learning abilities of children having ID. Most students with mild ID have Individualised Education Plans (IEPs) focusing on academic skills, social skills, and life skills. Effective methods of teaching them include repetition, reinforcement, hands-on learning, and task analysis along with educational tools and apps, learning ways through role play, social stories, and real-life experiences benefits them immensely. Children with moderate ID do better with targeted goals that focus on functional academic skills, practical life skills, and work skills. They need a multi-sensory approach, well-defined steps and regular activities that are incorporated to help them perform daily activities. Children who find it hard to communicate verbally need support through picture boards, other devices, and technology. In terms of behaviour, having a behaviour management strategy and involving parents would be effective methods of ensuring children develop independently while getting the help they need. Children with severe and profound forms of ID require individualized programmes focusing on communication, socio-emotional, and life skills development. To meet these goals, a multidisciplinary collaboration between many professionals helps tremendously.

Universal Design for Learning

UDL is an educational framework designed to improve and optimise teaching and learning for all students, based on scientific insights into how humans learn. Embedded with the principles of accessibility, flexibility, and inclusivity, UDL aims to remove barriers to learning and provide every student with equal opportunities for success. 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 rather flexible approaches that can be customised and adjusted for individual needs.

UDL is highly relevant in special schools because it provides a comprehensive framework for addressing the diverse needs of students with disabilities. By providing multiple ways to succeed, UDL helps children with special needs develop resilience and persistence. By promoting flexibility, accessibility, inclusivity, independence, and differentiated instruction, UDL helps create an educational environment in a special class where all children can thrive.

UDL recognizes variability in: Engagement (the 'why' of learning, which aligns with affective networks that involves interest, effort and persistence, and self-regulation, Representation (the 'what' of learning, which aligns with recognition networks which includes perception, language and symbols, and comprehension, Action & Expression (the 'how' of learning, which aligns with strategic networks i.e. physical action, expression and communication, and executive function (Centre for Applied Special Technology (CAST) 2018). UDL presents choices regarding how information is conveyed, how students interact or showcase their understanding, and how students are involved in the learning process.

Background of the Study

Arushi - The Learning Centre, also called Arushi, is an experimental school unit that is set up by the Department of Special Education at SNDT Women's University, Mumbai, India. It is a self-supporting unit which caters to the learning needs of varied groups of students in the age group of 4 years to 18 years with disabilities like intellectual disability, autism spectrum disorder, slow learning abilities, attention deficit hyperactivity disorder, cerebral palsy, and behavioural disorders. The students have mild to severe and profound learning and support needs. Similarly, the students may or may not have comorbid disabilities. At Arushi, an ability-based grouping system is followed where the students with similar levels of functioning in the academic and adaptive areas are placed in a designated group for instruction. There are five groups in Arushi viz. Early intervention group, early childhood special education group, preparatory group, intermediate group, and pre-vocational group.

In this article, we report about UDL implementation for students in the preparatory group at Arushi. This group comprises students with mild levels of disability requiring varying kinds and levels of support for managing their behaviours. The students follow an academic curriculum along with curriculum for co-curricular subjects, personal skills, and social skills. Currently, there are five students in the age -range of 6 years to 8 years, learning in the preparatory group; and all the students are rather different from each other. Brief profile of the students is given below:

Student 1, is a 6-year-old girl with Down syndrome and mild intellectual disability who exhibits a strong preference for inputs through the visual modality.

Student 2, is an 8-year-old with multiple disabilities. He has Down syndrome, mild intellectual disability with bilateral moderate conductive hearing loss. This student enjoys physical activity even while doing academic tasks. He joined Arushi only last year after having attended two different mainstream schools. He could not cope up with the academic load of a mainstream school curriculum and thus joined Arushi.

Student 3 has mild autism. She is 7-year-old, loves music and dance; and prefers visual inputs. She is good at basic embroidery and likes culinary activities.

Student 4 is a 6 -year-old girl having autism with borderline intellectual functioning. In addition, she has behavioural challenges. She benefits from kinaesthetic activities and loves using manipulatives in class.

Student 5, a girl with Down syndrome aged 8 years, has borderline intellectual functioning. A kinaesthetic and experiential student who loves gardening and baking. Like student 2, she too joined Arushi after attending a mainstream school for 3 years.

Originally, the pedagogical approach for these students involved developing individualised education plans, and planning group lessons and activities which are oriented towards meeting the objectives of the academic curriculum. The principles of teaching in small steps and drill and practice were widely used. From the beginning of the academic year 2023-24, Arushi adopted the approach of theme-based instruction for students across the groups and thus, these five students accessed the curriculum that was based on theme-based approach.

The theme-based instructional approach entails selecting a broad and overarching topic around which the instructional objectives and practices are built. Herein, students learn the skills and content not as separate subjects at different points in the academic year, but as interconnected topics. The students explore the topic/ theme for a relatively long period of time in the academic year using different modalities to achieve the instructional objectives. This approach tends to help the students build their understanding through concrete experiences, eventually laying the foundation for developing abstract ideas and concepts (National Curriculum Framework for Foundational Stage, 2022). The theme-based approach engages students meaningfully in the instructional process (Handal & Bobis, 2004) by connecting their experiences with their existing knowledge base.

In Arushi, two major themes were chosen for the academic year 2023-24. In term one (from June 2023 to October 2023) the theme was ‘seasons’ and in term two, the theme was ‘transportation’. UDL implementation was done in term two (from November 2023 to March 2024) and the students learned the content under the theme ‘transportation’.

UDL Implementation for the Theme ‘Transportation’ in Arushi

The theme ‘transportation’ was explored from the subject areas of environmental studies (EVS), language and maths. The content for each subject was delineated and the lessons of 30 mins to 45 mins duration were conducted in each area.

Lessons on 'Transportation' with Focus on EVS

The content coverage for the EVS lessons was the concept of transportation, means of transportation, modes of transportation, and travel safety measures. So, the students were taught that transportation meant moving from one point to the other, various modes of transport like car, bus, train, aeroplane, and boat and the advantages of each mode. While teaching travel safety measures, the students were required to learn three safe and unsafe behaviours while travelling.

UDL principles were followed while teaching these concepts. Multiple means of representation were followed by providing content through visual aids, ensuring accessibility. Multiple means of expression and engagement were put together, as students physically sorted the images, catering to different motor skills and engagement levels. To quote one example, when the focus was on teaching about safety while travelling, the lesson began with showing six pictures - three depicting safe behaviours and three depicting unsafe behaviours. The activity was interactive, allowing students to analyse the pictures and categorise the pictures given in random order into a 'safe' or an 'unsafe' box. The lessons encouraged active participation and critical thinking, fostering a collaborative and inclusive learning environment. Collaborative and inclusive learning environment meant that the students worked as peer buddies and they could help each other out with the pictures. The diversity in activities allowed all students to demonstrate their understanding in various ways, ensuring that every student could engage with the material effectively and meaningfully.

Means of Transportation - Watching a Video

Lessons on 'Transportation' with focus on Maths

The content planned for Maths was teaching the concepts of big and small numbers, identification of various denominations of money, and using the money to buy (using exact amount) tickets.

In the lesson on understanding big and small numbers, we embarked on an engaging activity that brought the concept of "more" and "less" to life for our students. The focus was on helping students grasp the idea that big numbers mean "more" and small numbers mean "less." To make this abstract concept tangible, a simple activity of counting toy vehicles was integrated, tying in with the transportation theme. After counting the number of vehicles, the students had to determine whether their set represented "more" or "less" and place the vehicles in the appropriate column on a chart. This activity helped the students to think and pay attention to the number value make connections about 'big' being connected to the word 'more' and 'small' with the word 'less'. To reinforce this learning visual aids like number lines and manipulatives were used e.g., 3 toy cars were placed next to 7 toy cars, emphasising '7 is more than 3'. The students had the freedom to express their answers as they deemed fit. Some used verbal explanations, others drew pictures or wrote numbers, and a few even created small stories around their vehicles. This flexibility ensured that every child could communicate their understanding in a way that felt comfortable to them. Also, hands-on approach allowed students to physically manipulate objects, reinforcing their understanding through tactile and kinaesthetic learning.

The lessons on identification of notes of various denominations was connected to the theme of transportation, emphasising the practical importance of money for travelling by various modes of transportation. During the lesson, money notes tailored to the learning levels of each child were given to them. Some students received larger denominations while others worked with smaller notes, ensuring that each child could engage meaningfully with the task according to their abilities. This differentiation was key in addressing the diverse needs within the classroom.

The classroom was transformed into a lively marketplace, with a 'shop' set up for buying bus tickets, along with buying things that we need for travelling. The shop featured an array of products, each labelled with a price which the student had to use the money to "purchase" items. Each student was given the opportunity to read the price of an item aloud and decide on the correct amount to pay. Role-playing was highly engaging and provided a dynamic and enjoyable learning experience than the traditional method of teaching money recognition. This activity not only to taught the recognition of money but also practise reading, basic maths skills, and social interactions. To tie the entire activity together, the students were asked to reflect on the importance of money in everyday life. For helping the students to generalize the money concept, they were asked to buy a bus ticket/ train ticket, and show it in class.

The students responded positively to this hands-on, interactive approach of teaching using the UDL approach. They were enthusiastic about the role-play and enjoyed the real-world application of using money to make purchases.

Peer buddies

Lessons on 'Transportation' with focus on Language skills

The content planned for language skills included identification of vehicles, identification of the sounds made by the various vehicles, reading the names of the vehicles and modes of transport, answering 'what' questions based on transportation (reading simple sentences (Subject + Verb + Object), and describing means of transport (adjective + noun).

The lessons started by playing a listening game with the students where they listened to, detected, and named sounds they heard in the environment. Later, they watched videos of various vehicles and the sounds they made. Each child was then given a flashcard featuring a different vehicle and was asked to label the vehicles. One student was asked to imitate the sound of any vehicle and others had to guess which vehicles it was. Matching the flashcard of the vehicle to the corresponding sound in the video was another task. This approach helped the students improve their auditory skills and their ability to associate sounds with the correct sources.

For building the oral language skills, picture recognition and picture comprehension was taught using the 'What Questions'. The focus of this lesson was on teaching students to ask and answer 'what' questions by emphasising the word 'what'. 'What' puzzles were introduced and the teacher asked the students questions like "What vehicle makes that sound"?, "What vehicle do you use to go to school?", "What means of transport is the fastest?" etc. and students answered by stating the name of the vehicle/ means of transport or ticking the name of the vehicle or picking up the picture of the vehicle or drawing the picture of the vehicle or copy-writing the name of the vehicle by selecting it from the word bank thus demonstrating different means of expression.

Finger tracing for reading words

Sentence reading

The content planned for reading sentences included using Subject + Verb + Object (E.g. I ride a bus; we fly an aeroplane; I ride a cycle; Rishita goes by train etc.). The activity undertaken by the teacher was the use of 'Sentence Strips' where the students were asked to read the names of vehicles and create sentence strips with simple sentences about vehicles. The students could read the words using phonics and trace the letters if required. The students were also given an option to orally make sentences about modes of transport. The students were taught to describe the various vehicles (using the adjective + noun structure) for e.g. small car, huge truck, etc. when given a flashcard or make simple sentences like 'the car is red', 'the bicycle is small' etc.

Throughout the lessons, the theme remained seamlessly intertwined with the learning objectives, ensuring a cohesive and memorable experience.

Discussion

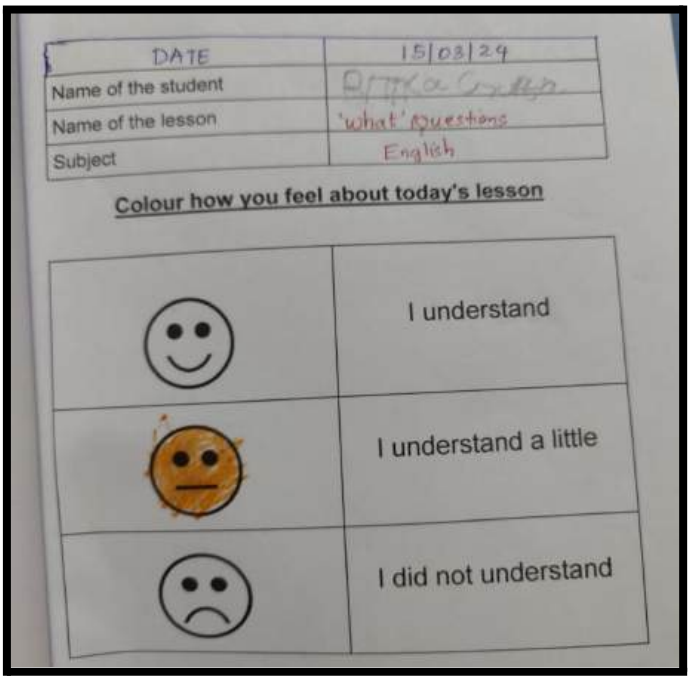
Children under the study could be studying in mainstream schools but because of the lack of awareness and a negative attitude of management and teachers towards children with special needs, these children have no choice but to seek admission in special schools.

As described above the approach followed by the teacher was 'Theme Based' and the theme selected was 'Transportation' was taught integrating Math, Environmental Science and English in their context through a multi-sensory approach. As per the UDL guidelines given by CAST, the first step to reach the goal of expert students is 'access' for recruiting interest, for perception, and for physical action (CAST, 2018). Following these principles, the teacher focussed on children having access to the relevant information.

Throughout the lessons, it was ensured that the students had opportunities for experiencing flexibility. Irrespective of whether the lessons were focussed on language skills, EVS or Maths, the font size was large enough for the students to perceive clearly. The activity and worksheets were printed in Verdana font with font size 16. The key words were printed in bold. Adequate spacing of 2 between lines was maintained. Whenever the blackboard was used, the writing was in a print case using either a yellow or white chalk. The use of pictures was incorporated across the lessons. The pictorial representation was done in two ways - printed on flashcards of 4-inch X 4-inch dimensions, and also in PowerPoint presentations. The visual aids were always placed on a table in the direct line of vision of all the students at a distance of around two to two and half feet. To support visual representation of information, auditory inputs were provided by repeating key words in a louder voice. Pointing to the words being read from the blackboard or the PowerPoint or from the books given to the students ensured that they all could access the information shared. Since the students come from varied linguistic backgrounds, bilingual instruction was a norm in class - in addition to English, Hindi was also used to support their understanding. The students got an opportunity to engage in independent study after direct teaching was done. The students revised the content by accessing the presentations created by the teacher as many times as they wanted to. The presentations had text, pictures, videos, and puzzles. Exposure through multimedia engagement further gave them the opportunity to get engaged in a variety of activities with the materials provided to them.

When options were provided, the students could exercise their autonomy in choosing what activity they preferred to do, and how they wanted to demonstrate their learning - like some did colouring, some gave answers orally and some narrated stories related to the concept they were learning. Engaging multiple modalities made the class interactive and upbeat. This required careful application of the principle of teaching from simple to complex, concrete to abstract, bearing each student in mind.

Feedback from the students was taken at the end of every lesson using a three-point emoticon rating scale (I understand, I understand a little, I did not understand) which the students did very enthusiastically.



Emoticon rating scale

Conclusion

Due to incorporation of UDL principles, the lessons were interactive; this in turn yielded positive reactions from students. Better learning, increased focus, motivation to learn, and involvement in the class was observed. UDL implementation in teaching students with ID leads to changes in their perceptions, interactions, learning and behaviour (Rao et al., 2017) along with increased academic achievement (Tussa'diah, & Nurfadillah, 2018; AlRawi & AlKahtani, 2021) increasing their motivation (Tussa'diah, & Nurfadillah, 2018). The betterment of learning outcomes was seen across the three subjects – EVS, Maths, and Language. Coyne et al. (2010) have observed that UDL designed literacy instruction leads to positive and relevant learning outcomes for students with significant intellectual disabilities. The lessons demonstrated UDL principles can be effectively applied in a special education setting. Designing lessons using UDL ensures that each student's unique needs are met despite not having to work with the student on a one-on-one basis throughout. Through UDL implementation, a transformation in the way resources were curated and offered, catering to individual differences, and promoting equitable access to education was witnessed. Making the curriculum flexible made learning relevant (Wehmeyer, 2006) for students with disabilities like Intellectual Disability. By embracing UDL principles, the teacher was able to create an inclusive learning environment where every student felt valued and empowered in their learning journey. Looking at the improvement in the students of the preparatory group, future implementation of teaching using the UDL framework in other classes is planned.

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Universal Design for Learning with Visual Thinking Strategies: Support for Learner Engagement, Representation, and Action and Expression

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ABSTRACT

This concept paper explores how Visual Thinking Strategies (VTS), used as an inclusive strategy, can effectively support Universal Design for Learning (UDL) in attaining learner agency through its core principles of multiple means of engagement, representation, and action and expression. UDL is an approach to learning, teaching, and assessment that ensures accessibility, support, challenge, and engagement for diverse learners. It proactively addresses the varied competencies, identities, and learning strengths and needs of every learner. In VTS, unique perspectives are valued and explored. The VTS questions are safe and accessible, provide opportunities to build on prior knowledge, initiate an active process of discovery, develop critical thinking, communication skills, and progress learning. This paper provides brief overviews of UDL and VTS, examining recent developments in the UDL Guidelines 3.0. It demonstrates how VTS can be applied using various senses, not limited to visual stimuli. We aim to provide readers an opportunity to reflect on how the VTS process can support inclusion in an integrated UDL-VTS approach in any subject area, encouraging active engagement through the VTS technique. This concept paper will interest educator trainers and educators in early childhood, primary and post-primary (secondary) education in all subjects.

Keywords

Universal Design for Learning, Visual Thinking Strategies, inclusion, pedagogy.

1. Introduction

The exploration of various inclusive approaches under the Universal Design for Learning (UDL) framework has gained significant traction in recent years. As UDL theory and practice evolve, pedagogies that enhance accessibility and inclusion for diverse learners are increasingly recognised. We propose that combining UDL with Visual Thinking Strategies (VTS) can create more accessible and inclusive learning environments. By leveraging the strengths of both approaches, we can better cater to a wide spectrum of learners.

In this paper, we begin by examining UDL and its recent developments. We then explore VTS focusing on the characteristics of VTS practice that are significant for UDL. Following this, we evaluate how VTS aligns with the three core principles of UDL: multiple means of engagement, multiple means of representation, and multiple means of action and expression. We argue that, due to its flexible nature, VTS, when applied in a UDL-aware learning environment, has the potential for widespread application in the education system. Therefore, this paper is not aimed at any particular subject, school level, or participation group. Instead, our goal is to provide practicing educators and educator trainers with an opportunity to reflect on how the VTS process may support inclusion in their subject area and how an integrated UDL-VTS approach may be applied in their educational learning environments.

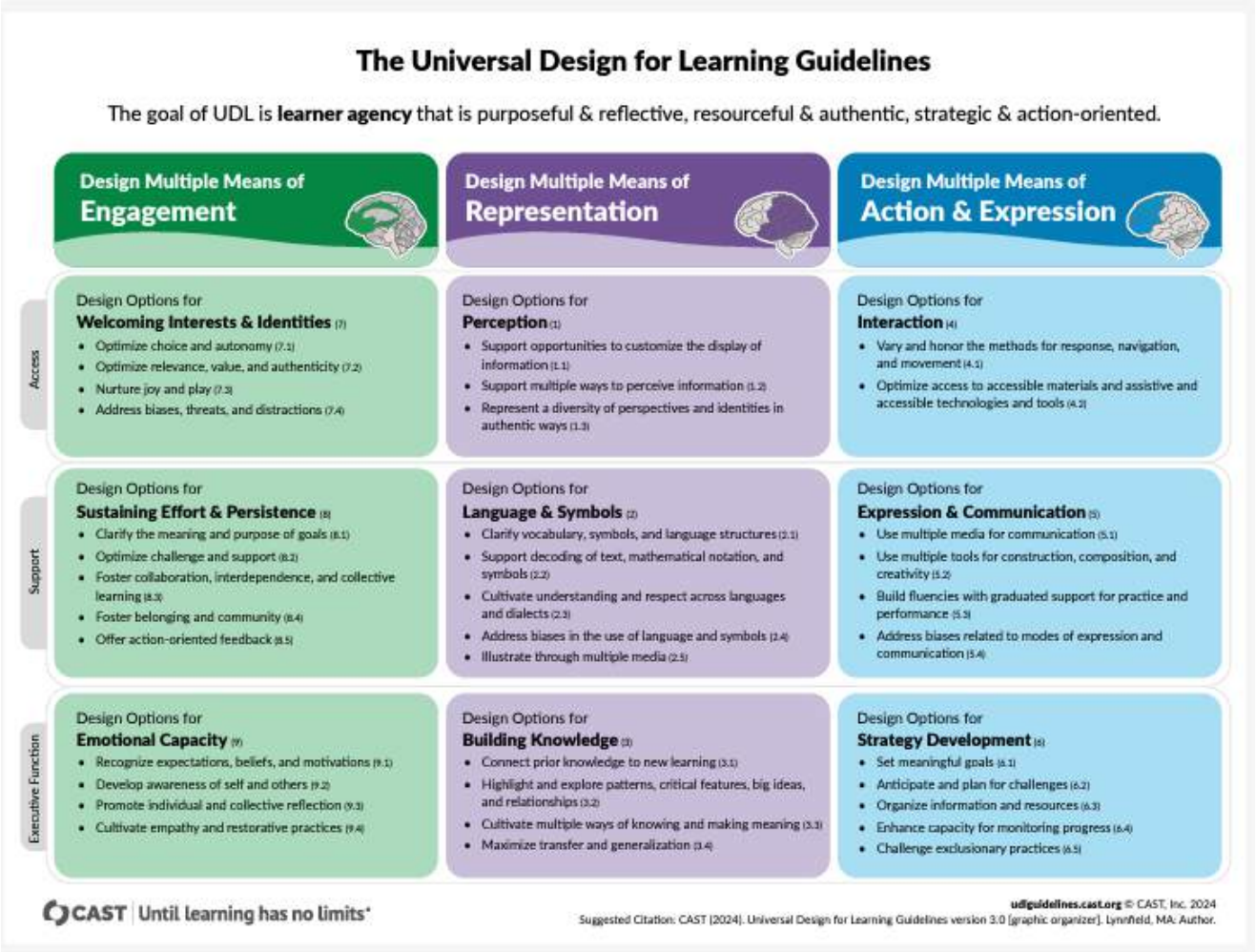
2. Universal Design for Learning (UDL)

Originating in the field of cognitive neuroscience research, UDL is an approach to learning, teaching and assessment design and delivery that ensures accessibility, support, challenge and engagement for diverse learners through proactively addressing the varied competencies, identities, and learning strengths and needs of every learner (CAST, 2024; Flood & Banks 2021; Meyer, Rose & Gordon, 2014). Entering its 40th anniversary at the time of writing, UDL has gone through several iterations. Evolving from its first iteration which was predominantly disability focused, the newest version, UDL Guidelines 3.0 (CAST, 2024), takes a social justice lens to the UDL Guidelines to address barriers to learning in the environment and systems that are rooted in bias and exclusion.

UDL is a pedagogical approach that aims to remove these and other barriers to learning by leveraging the concepts of learner variability, choice, flexibility, accessibility, and engagement. Its foundational concept is rooted in the belief that a one-size-fits-all model of education does not effectively meet the needs of every learner (Posey & Novak, 2020; Meyer et al., 2014). In UDL, barriers to learning are in the environment, the curriculum and the context, not the learner. These barriers can be removed through addressing biases and exclusionary systems and intentionally designing for predictable variability. UDL highlights three principles for designing that provide a map for educators to create

meaningful and purposeful learning experiences for every learner: Engagement, Representation, and Action and Expression (Figure 1).

Figure 1: *The UDL Guidelines 3.0 (CAST, 2024).*



Multiple means of engagement emphasise strategies focused on centering and affirming learners' interests and identities, fostering a sense of belonging, promoting joy and play for both learners and educators, and cultivating empathy through restorative practices (CAST, 2024). It brings educators' attention to the 'why' of learning. It focuses on the design of the learning experience and learning environments and asserts that flexibly designed learning environments facilitate every learner to find their pathway into the learning experience that enables their meaningful participation (CAST, 2018) by being able to bring their authentic selves to their learning experiences (CAST, 2024). For this to occur, educators must design learning experiences that learners can relate to and

bring their own prior knowledge, experiences, and identity into their learning (Chardin & Novak, 2021; Craig, Smith & Frey, 2019).

Multiple means of representation highlight the importance of authentically representing diverse identities, perspectives, and narratives, considering various perceptions of people, cultures, and languages, and valuing multiple ways of knowing and making meaning (CAST, 2024). It draws educators' attention to the 'what of learning'. Representation is concerned with the presentation of information and materials to ensure that a diverse range of learners can access, engage with, interpret and understand the content being presented through different media and methods (Cast, 2018). This requires considering how people, cultures, identities, perspectives, and ways of knowing are represented in the content, as learning and its transfer are enhanced when multiple representations and perspectives are used, as they help learners connect concepts both within and between topics. This creates learning environments where a diverse range of learners are able to see both themselves and others represented in the curriculum, content, materials and visuals used in their learning community (Fritzgerald, 2020).

Multiple means of action and expression emphasise honoring diverse forms of communication, valuing historically silenced expressions by addressing biases, and challenging exclusionary practices to create more inclusive and accessible learning environments (CAST, 2024). It concentrates on the 'how' of learning. It addresses the need for curricula to include choice and flexibility for how learners can demonstrate their learning and understanding in order to be an inclusive curriculum (Capp, 2017; Edyburn, 2005). Additionally, it recognizes the importance of developing strategies, practice and organisation skills learners need to demonstrate their learning and like how the form of communication they choose will differ, their executive functioning approaches will differ also.

By applying these UDL principles, educators across contexts can create inclusive learning environments that cater to the diverse and contextual learning preferences and abilities of learners. Using UDL as an overarching inclusion framework aims to ensure that equitable access, participation, support and challenge are built into the entire learning experience. The nine UDL guidelines and thirty-six considerations that accompany the principles (Engagement, Representation, Action and Expression) offer suggestions for educators on how learners can be motivated to engage and to stay engaged when they face challenges to their learning; how learners can be aided to access learning content; and how learners can be facilitated to demonstrate their new learning in ways that allow them to successfully reach their learning goals. Each guideline emphasises areas of learner variability that without intentional design can present barriers, or, where learning experiences are designed with variability in mind present learners with opportunities and leverage points to engage (Meyer et al. 2014).

The accompanying considerations provide examples of ways educators can design flexible and inclusive learning experiences. While UDL is presented in a linear way, crossover and interconnection between the principles, guidelines and considerations is intentional. The guidelines are not intended to be used as another checklist for educators to complete. Rather they are a tool to assist educators identify areas in their lesson design that can be adapted to address biases and learner variability and thus create inclusive learning experiences.

Using the UDL Guidelines supports educators to reframe how they design for inclusive learning, teaching and assessment, to explore within their design what engagement, representation, and action and expression will look like for different learners for a particular learning experience. Reframing learning, teaching and assessment from this UDL perspective places the learner at the centre of the curriculum and therefore educators' lesson design. UDL provides learners and educators the opportunity to continually co-construct ways of learning that meet curriculum demands while meeting each learner's needs and supporting learner variability.

3. Visual Thinking Strategies (VTS)

Originally developed for Art education programs in the United States during the 1990s, VTS used art to help people progress in their esthetic development. However, during its development and subsequent practice, VTS has proven its worth as an invitational learning experience where unique perspectives are valued and explored. It builds on prior knowledge, initiates an active process of discovery, develops critical thinking and analysis skills, communication skills, and progresses learning. Its transdisciplinary value has therefore garnered increasing and broader attention beyond Art education (Nolan, 2024, 2023, & 2022; Clark-Gareca & Meyer, 2023; Yenawine, 2018 & 2013; Dawson, 2018; Capello & Walker, 2016). The technique has been extensively described in several publications (Raaijmakers, Mc Ewen, Walan, Christenson, 2021; Nolan, 2024, 2023, & 2022; Yenawine, 2018 & 2013; Hailey, Miller & Yenawine 2015). Nonetheless, to situate VTS and its potential within a UDL framework, it is necessary to explore its practice and focus on the characteristics of this practice which are important in relation to UDL.

The VTS technique is centred on the following three questions:

1. *What is going on in this picture/other focus object?*
2. *What do you see that makes you say that?*
3. *What more can we find?*

These questions provide a scaffold for the VTS facilitation. The educator or facilitator promotes open-ended discussions, encouraging learners to observe, interpret, and communicate their observations, supporting their comments with evidence from the

stimulus object. VTS can be used with children and adults of all ages and grade levels, although it is more readily applicable in its original form with those who are sighted.

At the beginning of a VTS session, learners are presented with an artwork, image, or other visual stimulus and asked to observe it closely without initial guidance (see Figure 2).

Figure 2: A VTS session in Denmark with primary school children (picture provided with per-mission by VTSdanmark).

The first question, "What is going on in this picture?" initiates the discussion. Learners share their interpretations, communicating their thoughts and listening to others. The facilitator paraphrases each comment to ensure understanding and uses an open style of language to keep student interpretations open. For example (see Figure 3):

> Learner: *"There are men playing football in a park."*
> Facilitator: *"You say that you see people who look like men playing football in what looks like a park."*

Figure 3. Henri Rousseau - The Football Players/Les joueurs de foot (1908). Solomon R. Guggen-heim Museum, New York City. Public domain work of art.

Learners are encouraged to support their interpretations with evidence from the image through the second question, "*What do you see that makes you say that…* e.g., *this is a park?*" or "… e.g., *these are men playing football?*" This question enhances critical thinking and evidence-based reasoning skills. The third question, "*What more can we find?*" reopens the discussion to new comments and ideas.

This collaborative discussion helps learners consider different perspectives and refine their thoughts. After the discussion, learners reflect on what they have learned and how their understanding has evolved, reinforcing their learning and encouraging continuous improvement. Learners' interpretation of the focus object is initially grounded in their prior knowledge. The VTS protocol provides them with the opportunity to contribute in the classroom using this knowledge. Through the three open-ended questions, educators encourage students to build on this foundation by listening to others during the VTS facilitation, to think deeply, and to articulate evidence-based observations which they are invited to share.

Integrating VTS into various educational settings creates dynamic and inclusive learning environments. Critical thinking is fostered through careful observation, listening, and deep thinking. Inclusivity is promoted by valuing diverse perspectives and fostering a sense of community. Engagement is enhanced by making learning intriguing and enjoyable. Communication skills are developed by improving the ability to articulate ideas and listening to others. The early application of VTS with young children or first-time participants is most effectively carried out through a picture that has a strong narrative that the beginner can relate to. As participants progress in their exposure to VTS, other objects of focus can be used such as sculptures, written texts, videos, or even mathematical equations etc. which furthers the possibilities of use of VTS in the education context (Nolan, 2024, 2023, & 2022). The following exploration of the connections between UDL and VTS will demonstrate the effectiveness of VTS within a UDL framework. Additionally, it will show that the VTS approach is not solely reliant on visual stimuli and can be adapted for use with individuals who are, for example, visually impaired.

4. Exploring connections between UDL and VTS

Both UDL and VTS are designed to support learner variability in that they support the diverse learning preferences of learners. UDL's goal to celebrate learner agency and lean into learner variability by providing flexible pathways and choice to achieve success aligns with VTS's belief in the power of its three open-ended questions and ensuant discussions to develop thinking skills and communication skills. By way of exploring how VTS can be used as an inclusive strategy and as an effective tool to support UDL, we propose identifying where VTS aligns with each principle of UDL (see Table 1). That is,

how VTS provides multiple means of engagement, representation, and action and expression for every learner in our learning environments and in so doing, addresses the key questions delineated under each principle in Figure 1.

Table 1. Connections between UDL and VTS with examples.

UDL Principle	Connection to VTS	For example:
Multiple Means of Engagement	Both UDL and VTS aim to welcome interests and identities; they foster individual and collective learning; they foster intrinsic motivation, interest, and sustained effort through varied and meaningful learning experiences.	Enjoyment/Motivation; unique perspectives; use of prior learning; Questioning; use of open language; enjoyment; reflective experience.
Multiple Means of Representation	VTS aligns with multiple means of representation by using visual stimuli; acknowledging the power of visuals in conveying information but with potential to use other stimuli for visually impaired; representation of a diversity of perspectives and identities; and cultivating multiple ways of knowing and meaning making.	Visual stimuli; auditory descriptions plus other sensory possibilities; building on prior knowledge; perspectives and identities; open language in paraphrasing
Multiple Means of Action and Expression	VTS recognizes diverse learning styles and values unique perspectives; builds fluencies with practice; addresses biases in relation to modes of expression and communication.	Modes of response/communication (construction, composition and innovation); executive functioning

4.1. Multiple means of engagement

The provision of multiple means of engagement is a fundamental feature of both UDL and VTS. UDL aims to foster learners' intrinsic motivation, interest and sustained effort through meaningful and varied learning experiences (Meyer et al., 2014). Through the highly accessible and non-judgmental questions imbedded in a tried and tested protocol with open language paraphrasing of learner reflections, VTS promotes learners' engagement and sustained interest by rousing their curiosity, encouraging inquiry, and creating safe and inclusive learning environments where they can share and discuss their perspectives in a non-judgmental manner. VTS also offers learners' autonomy and choice in how they engage with the material, which is crucial for maintaining motivation

and interest. By providing various entry points and allowing learners to approach the content in ways that align with their individual preferences and strengths, VTS supports personalised engagement and fosters a deeper connection to the material. VTS provides opportunities to build on prior knowledge, develop critical and creative thinking, and helps learners independently progress in their learning, while fostering collaborative learning through reciprocally beneficial understanding between learners and interactions between learners and educators. In this space, learners are free to listen, reflect, analyse both critically and creatively, and express themselves to show how we all have different ways of seeing and thinking.

VTS therefore aligns with multiple means of engagement in the manner that it fosters a sense of belonging and connection whilst accepting difference, the development of language modalities, critical and creative thinking, and affective skills (Clark-Gareca & Meyer, 2023). This contributes to the engagement, sustained motivation and independence of learners. In line with the UDL Guidelines, VTS emphasises the importance of relevance, value, and authenticity in learning activities, which further enhances learner engagement by connecting the content to real-world contexts and personal experiences. This approach not only contributes to the engagement, sustained motivation, and independence of learners, but also supports their emotional and social development by encouraging empathy, perspective-taking, and a greater understanding of diverse viewpoints.

4.2. Multiple means of representation

Multiple means of representation aim to ensure every learner can access the curriculum through having materials and content presented to them in various ways. This includes ensuring that visual stimuli are accessible not just to sighted learners but also to those with cognitive, auditory, and visual disabilities, or who approach content differently. Through the use of visual stimuli, VTS aligns with multiple means of representation by acknowledging the power of visual stimuli in conveying information, thus giving learners more than one means of accessing and engaging with the curriculum. Furthermore, it can be used alongside other forms of content delivery and can often be more effective than text alone in communicating complex information and in developing learner analysis skills to independently access this information and doing so though multiple modes. This approach not only makes the content more accessible but also engages learners by connecting with their personal experiences and backgrounds. By selecting culturally relevant or personally meaningful visuals, educators can increase learner engagement and motivation, thus facilitating deeper understanding and retention. VTS taps into this potential through its use of visual artworks as a jumping off point for inquiry that invites learners to observe, make connections and construct meaning of the lesson content and thus reach higher levels of comprehension and understanding.

For example, using a diverse range of visual artworks allows educators to foster intercultural consciousness, gender equality, and awareness of various social identities in the classroom. By incorporating content that reflects a wide array of cultural, racial, and social perspectives, educators ensure that all learners feel seen and represented in the curriculum, which is a key tenet of the UDL Guidelines 3.0.

Whilst visuality is logically sensorially in focus in VTS, the integration of multiple sensory modalities, such as audio descriptions, tactile experiences, or even olfactory cues, further aligns with UDL's emphasis on providing options for perception. By engaging multiple senses, educators can enhance comprehension and engagement for all learners, including those who may have sensory impairments or cognitive differences. This was done with a focus group of visually impaired people investigating how audio description of a focus object can be used with VTS (Power-Hackett, 2022). Whilst this research is, as yet, limited with no critical experimentation, it does open up for other possibilities in the VTS facilitation session for educators with learners who are visually challenged. In this way, VTS moves beyond its initial focus as a visually based activity to being potentially a multi-sensory activity. This is because multiple senses such as sight, hearing, taste, touch, and smell can potentially be used in the VTS session as has been shown in Denmark (Nolan, 2023). This would necessitate replacing the verb “see” with “hear,” “feel,” or “smell,” etc. in the second VTS question depending on the context. This further broadens the potential of the VTS protocol as an equity pedagogy, providing options in the UDL-grounded classroom. It embraces the wider spirit of UDL, which evolves and iterates as more is learnt about including diverse learners.

Educators can also use VTS to supplement their teaching by using a discussion on a visual or focus stimulus to support educator assessment of learner understanding of a particular topic but also to help learners independently notice what needs to be learned about a subject area. VTS, in its original inception, is not about providing a correct answer, it is about providing a framework in which learners can find answers and opening up for a variety of possible answers. This may not suit all school subject areas and one way of tackling this would be to have a post-VTS session exercise in which the learners can ask themselves “what do we know so far?” and “what do we need to complete our understanding?” (Nolan, 2022). This way of presenting material to learners in a manner that encourages them to independently evaluate their own learning and what they need to do to reach their goals, allows educators to vary the means in which they represent their subject material outside of established and traditional disciplinary norms. And this overlaps with the third and final UDL principle which is about providing learners with multiple means of action and expression.

4.3. Multiple means of action and expression

VTS aligns with multiple means of action and expression as it recognises that not all people learn in a 'traditional' way and that many learners with excellent verbal expression may struggle to demonstrate their intelligence through traditional academic modes which is most often text and written form (Yenawine, 2013). The unique perspectives of each learner are listened to, valued and explored. As a result, they allow themselves to reflect on and build on what others say that they perceive when they examine an object which is the focus of attention during the VTS session, but their unique perspectives are valued and explored. In the VTS facilitation, learners receive attention and a positive reception of their views. In the verbal paraphrasing process, they hear their own views expressed in other ways and this is a language and communication learning moment which furthers their cognitive language skills.

This attention, positive and constructive evaluation of learner views and expression is not just by the facilitating educator, but also by the learners themselves with each other. They are listening and learning from each other and are showing that they may be willing to adjust their views. When learner participants communicate their ideas, they are learning to communicate as a skill in a mutually respectful way. They can do this in agreement and in disagreement with others, but always with respect and based on active reflection. In this way, they can progress in their reflections even through their disagreement with others' points of view by embracing this disagreement as an opportunity to further their own reflection, analysis and sharing of ideas. Thus, participants develop their abilities to describe, analyse, and interpret a focus object and do this through active observation and discussion.

Communication does not have to be solely verbal. After facilitation, learners can use writing, drawing, painting, and model-making exercises to illustrate and convey their experiences. In this way, VTS supports multiple means of action and expression, encouraging learners to communicate their ideas not just verbally, but also through these methods. Additionally, digital tools, multimedia presentations, and physical actions can further broaden the ways how learners demonstrate their understanding, ensuring all students can find a mode of expression that best suits their strengths. The flexibility inherent in VTS allows learners to choose how they wish to express their understanding and reflections. Whether through verbal discussion, written analysis, artistic creation, or digital media, VTS empowers learners to select the mode of expression that aligns with their individual strengths and preferences, fostering a more personalised and inclusive learning environment.

Thus, the aims of this principle of multiple means of action and expression to design with multiple ways for learners to communicate their learning and demonstrate their knowledge, values, understanding and skills are provided for in VTS. VTS not only supports diverse forms of expression but also encourages learners to engage in

meta-cognitive reflection. As they express their ideas and listen to others, learners are prompted to reflect on their thought processes, evaluate their understanding, and consider how different modes of expression might influence their comprehension and communication. This reflective practice helps learners to develop greater self-awareness and adaptability in their learning journey.

5. Limitations of this paper

While this paper explores the conceptual alignment between UDL and VTS in fostering inclusive classrooms, it does not include practical examples or empirical data comparing the application of this UDL-VTS model to traditional instructional methods. Specifically, the paper does not address how UDL-VTS might perform in achieving activity objectives or how outcomes may vary in different subject areas or for the learners themselves. This limitation highlights the need for further research involving classroom implementation of VTS within a UDL framework. Future studies should include controlled experiments and data collection to assess the comparative effectiveness of VTS versus traditional teaching methods and approaches in promoting engagement, understanding, and inclusivity among diverse learner populations.

6. Conclusion: A call to implement an integrated UDL-VTS in classroom practice

This paper argues for the connections between UDL and VTS. In doing so, it begins to demonstrate how VTS can support UDL's principles of engagement, representation, and action and expression in practice. The connections outlined suggest that UDL and VTS can mutually reinforce and enhance learners' learning experiences through the incorporation of visual or other stimuli and open-ended questions as integral parts of multiple means of engagement, representation, and action and expression. In adopting VTS, educators can create inclusive, engaging, and successful learning environments for every learner.

We argue that through adopting VTS as an inclusive learning, teaching and learning assessment technique within a UDL approach for inclusion, educators can intentionally use VTS to support learners in their achievement of lesson goals. For example, an educator can explicitly use VTS to reframe engagement and motivation at the beginning or in transitional moments of a lesson, to offer visual or other representations of the content in conjunction with VTS questions as a way to access the lesson, or to facilitate learners' use of their VTS skills to communicate their knowledge and understanding. VTS acknowledges and values the multiple and intersecting identities of learners, addressing barriers rooted in biases and systems of exclusion. By promoting interdependence and collective learning, VTS shifts from an educator-centred approach to a learner-centred one, enhancing the overall learning experience in line with the UDL Guidelines 3.0.

One of the significant aspects of both UDL and VTS is their universality, transcending school subjects and demonstrating the potential of becoming influential forces in learning and teaching across subjects. Therefore, we call for the active and intentional use of an integrated UDL-VTS model of practice in education. Moreover, while studies confirm the success of both approaches separately, we recognise the importance of gathering further evidence of the impact of an explicit and intentional application of an integrated UDL-VTS in educators' learning, teaching, learning assessment approaches, and learning outcomes.

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Co-creation of an Inclusive Study Skills Portal: Removing Barriers through UDL

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ABSTRACT

This paper will reflect upon how the development of an online study skills portal within a HEI was enhanced by using Universal Design for Learning (UDL) principles and a community of practice (COP). In response to the crucial need to retain students and support their academic development, this paper will explore how the UDL design principles were applied in creating a study skills portal. This paper will examine current literature and thinking for both UDL and the need for students in HE to develop study skills. A reflective discussion will consider how using accessible technology, the development of student-centric materials, and working within a community of practice can enable the removal of barriers for students accessing materials to support and develop their study skills. The paper concludes by emphasising the value of underpinning and progressing the design of a study skills resource using UDL and COP frameworks.

Keywords

autism, neurodiversity, self-views, Universal Design for Learning (UDL)

INTRODUCTION

There are more students accessing higher education (HE) globally than ever before with 235 million enrolments (UNESCO 2022). In the UK, Hubble and Bolton (2021) highlight that the number of students with a known disability has increased by 47% between 2015-2020. The Higher Education Statistics Agency (HESA, 2024) states that in 2022/23, 26% of almost 3 million students in the UK were international students with a permanent address outside the UK, and also noted the rapidly growing numbers from India, China and Nigeria. Students are arriving into HE from a diverse range of backgrounds and will have differing expectations of education and a range of learning needs (Merry, 2024). It is imperative that Higher Education Institutions (HEI's) acknowledge this through the creation of purposeful and authentic learning environments to enable learner agency (CAST, 2024a).

Transitioning into HE is not a linear or time-constrained process. Deleuze and Guattari

(1987, p. 342) suggest that "*becoming has neither beginning nor end, departure nor arrival origin nor destination*". Any interventions to encourage integration, adaptation and to guide students on their journey into HE must be mindful of where students are in the process, especially if their initial priorities lie with the "*social, personal and organisational aspects of university life*" (Hughes & Smail 2015, p. 475). Alongside this, institutions are conscious of their responsibility to encourage "*the range of skills that students are expected to develop from the holistic education offered*" (Wong et al., 2022, p. 1340). These skills are widely known as graduate attributes, which may include social responsibility, resilience, problem solving, communication and digital citizenship (University of Worcester, 2024). Such attributes are connected to graduate employability and the culture of the university. The process of embedding and demonstrating them within courses is not without difficulty (Wong et al., 2022). Balancing this process requires a shift in thinking about how HEIs support new students and to re-imagine how they design a curriculum to enable the acquisition of skills and attributes.

While study skills resources need to be both student-centered and supportive of graduate attribute development, other external circumstances cannot be ignored. Following the global Covid-19 pandemic and a return to teaching on campus, in our institution there was a need to reimagine the existing study skills website as students moved into HE. Additionally, student retention received greater attention due to both a cost-of-living crisis and unresolved funding issues, which continue to have an impact on the finances of both students and UK HEI's (Office for National Statistics, 2023; Ogden & Waltmann, 2024).

This paper is a project reflection and explores the use of the Universal Design for Learning framework (UDL) to reimagine a study skills portal within a UK HEI. Rose et al. (2002) explain that UDL offers an opportunity to remove barriers that affect students accessing learning and it considers the myriad ways in which students learn. Alongside this the innovative approach of developing the portal through a cross-institution Community of Practice (COP) (Lave & Wenger, 1991) is presented as a factor in achieving multiple means of engagement, representation and action and expression for our learners, whatever their discipline and background.

Literature Review

The development of the institution's study skills portal coincided with a landscape of working and studying in HE within post-pandemic England, during a cost-of-living crisis. The portal was developed with a desire to remove barriers for students with varying backgrounds and experiences and to support their transition and adaptation to study. This was achieved through the application of the UDL framework, utilising accessible technology, and working within a Community of Practice. This exploration of

the literature will delve further into the landscape in which this project occurred.

Successful student transition into HE has become an important area for practice, policy and research, not least because of the connection between successful transitions throughout a student's journey, and student retention (Devine 2018; Pittaway 2019). Nonetheless in recent years there has been critique of the practice of supporting students in transition (Gale & Parker, 2014; Gravett, 2021; Taylor & Harris-Evans, 2018). Gravett and Winstone (2021, p. 1578) suggest that current transitional curriculums are problematic, as a narrative that focuses on retention fails to *"acknowledge the complexity, fluidity and multiplicity of students' lived realities*." Students' lived realities post-pandemic may include isolation, a negative impact on study habits, and a lack of equipment and a space conducive to study (Aristeidou & Cross, 2021). Resources which support study skills development must focus on rebuilding student confidence and new habits for successful transition and study.

Within the institution, study skills are integrated within courses to varying degrees, with some examples of modular study skills delivery. In the literature, course-specific or context-relevant study skills teaching is favoured over add-on or remedial skills support (Barrie, 2007; Pryjmachuk et al., 2012). Yet part of the challenge of teaching study skills, whether in person or online, is the lack of consistent definitions and the misconception that these skills are generic (Richards & Pilcher, 2023). Furthermore, each student will have differing needs that may evolve as they move through a programme of study, and because of the nature of their course. Variation in learners and how they engage in learning is now standard (Dalton, 2020). There has been a shift in the needs of students as policy and the student demographic has changed within a widening participation agenda. Study skills resources need to be relevant and accessible for all students, with the potential for co-creation between teaching staff, learning support and technology experts to support this.

Universal Design for Learning (UDL) is a framework that offers an opportunity to remove barriers that affect students accessing learning (Rose et al., 2002). The framework has three core principles that need to be considered when designing the curriculum: Multiple means of Representation, Multiple means of Engagement, and Multiple means of Action and Expression. These principles support the removal of barriers that can and have excluded students from the ability to engage effectively. Novak and Tucker (2021, p. 17) suggest that even with having UDL strategies in place, if they aren't underpinned with the "*belief that all students can learn, regardless of variability*" then the framework will not be effective. Merry (2024, p. 23) also emphasises that "*as teachers we must be more responsive to diverse learner needs, spending more time making learning accessible, inclusive and equitable than we did in the past*." A flexible and accessible study skills resource underpinned by UDL principles should encourage students to reflect upon their experiences and plan how they can

build on and adapt these to flourish at university.

Bracken and Novak (2019) propose that to optimise students' learning within HEI's we must capitalize on the use of technology to reach all students, particularly those who have been hard to reach. Merry (2024) suggests that students can use technology to customise their learning resources and adapt content to meet their needs. This flexibility can support student autonomy as they make the transition into and through HE.

To balance the pressures of student retention and funding with the need to engage and respond to a diverse student body, it is imperative that experts within a HEI collaborate to bring multiple perspectives to curriculum design, and specifically skills support (Purcell & Barrell, 2014). A Community of Practice (COP) approach offers a framework for this collaboration. Wenger et al. (2002) define a COP as a group of people that share a passion about a concern or problem. Their focus is to develop knowledge and expertise through being together. Furthermore, a successful COP is one with "*a strong bond of communal competence along with a deep respect for the particularity of experience*" (Wenger 1998, p. 214). A COP provides the different perspectives, experiences and expertise needed to focus on and deliver a solution. Matsuo and Aihara (2022, p. 1) propose that a COP is "*a driver for knowledge creation*", and they emphasise the importance of intrinsic motivation of members for sharing knowledge across boundaries. The COP should maximise the potential of members' explicit roles ("*well-defined*") and implicit roles (e.g. "*well-tuned sensitivities*") to enable them to share and use their expertise (Campbell et al., 2022, p. 174).

The application of UDL principles by a COP comprising a range of individuals with study skills, subject and technical expertise, offers an innovative solution to the development of study skills resources for students. In the following sections, we explore the creation of a study skills online portal in a HEI, sharing insights into its development following UDL principles.

What happened

In 2022/23, an Education online short courses project required the development of academic skills resources to support a cohort of distance students who may have been out of study for some time. The COP for this initial development of the study skills portal comprised three people each with an explicit role: Academic, Subject Librarian and Learning Technologist. The Academic member brought into the COP the finely-tuned awareness of what it means to become a student in HE, with the various barriers, circumstances and priorities that can impact upon a student's successful transition. The Subject Librarian brought to the community a wider sense of the situation of study skills across the institution, having also researched the importance of collaboration across teams to promote students' academic skills within a subject context (Purcell & Barrell,

2014). The Learning Technologist's expertise in and access to educational software was critical to re-imagining the way study skills could be presented, adapted and accessed by all students.

This first iteration of the interactive study skills portal covered topics including learning journals, reading, criticality, reflection, and holistic self-care. The course-authoring software Articulate 360 was recommended by the expert Learning Technologist as a platform for creating the portal. With interactive text, images and multimedia, it is designed to be visually engaging while also being fully accessible, supporting the use of screen readers including JAWS, NVDA, VoiceOver, and TalkBack. Alternative text was applied on all images and alternative formats provided for all activities, including matching and ranking exercises. Where appropriate, content was provided through embedded video (and later, podcasts). The range of activity formats, images and templates included within the software ensured that we could offer "*a multimodality approach to learning*" (Levey, 2023, p. 479) through an adaptable and flexible resource.

Alongside the launch of the study skills portal for Education students, the institution's Academic Induction subgroup was focusing on the development of resources to aid transition into HE. It became clear that the study skills portal could be used as a model for providing study skills resources to new students, alongside an expanded range of themes to support study skills development through HE. The COP recognised the value of the study skills portal in providing consistent materials which academic tutors could recommend or 'prescribe' to their students during tutorials or within module sessions. These direct/spontaneous and indirect/planned means of engagement could increase students' motivation to work with the portal (Levey, 2023). We needed to draw on our experiences and reach into the wider HEI community to grow the COP and enable the principles of UDL to breathe within the co-creation of the new, expanded portal.

Collaboration within a larger COP prompted new ideas for the study skills portal to support transition into and through HE for all students. As a result, in the summer of 2023, the new two-part study skills portal was introduced (https://studyskills.wp.worc.ac.uk/). The *Starting at University* section aims to support transition of new students into the HEI. It includes direct input from IT experts (*Get IT-ready for study*), librarians and colleagues in professional student services (*Caring for yourself as you begin student life*). The broader *Studying at University* section was also re-launched with existing themes refreshed and new ones added, including *examination skills and memory techniques* which drew on the extensive experience of one of the institution's law lecturers. In the discussion we explore how UDL principles were applied in the design of the portal.

Discussion

Transition into HE involves a period of uncertainty for students and life can feel unstable (Goodman et al., 2006). There is a period of adjustment as students navigate their new education environment. Therefore, there was a need for the study skills portal to include a section that scaffolded and navigated students through this period. In the summer of 2023, the COP launched an additional section within the portal, titled *Starting at University* (https://studyskills.wp.worc.ac.uk/index.php/starting-at-university/). Alongside this, additional themes were added to the *Studying at University* section (https://studyskills.wp.worc.ac.uk/index.php/studying-2/). The following discussion explores some elements of the portal's creation, drawing on the principles graphically represented in CAST's (2024b) UDL Guidelines.

The *Starting at University* section needed to be both accessible and raise awareness of accessible technologies available to students. It also needed to welcome students into the HEI, fostering belonging and community and clarifying the HEI's culture and vocabulary. It needed to enable students to create and attend to goals and actions that would support their transition into the new learning environment of university. If the portal could open the door to this space, we felt that this would enable some stability within a time of uncertainty. To this end, the *Starting at University* section included themes on becoming IT ready, how to study at university, defining the role of the personal academic tutor, and self-care during this transition.

The inclusion of support to become IT ready was fundamental to accessing resources that would be needed to study successfully, both on and off campus. The access and use of ICTs by students encourages them to become more successful, active participants in teaching and learning, with greater motivation, interaction and creativity (Youssef et al., 2022). Our IT ready theme would focus on the very basics of getting connected. In collaboration with a COP member based in the HEI's IT department, the theme was designed to guide students into the sections of the IT website which would always be kept up to date with the latest information and resources, while also clarifying some of the terminology used around connectivity and managing online accounts. With this development it was hoped that we could engage with students from their first week within the university, both in university accommodation and off-site. This approach in content design reflects the thinking explored by Merry (2024) earlier in this paper, with the intention of removing initial barriers and empowering the student to be able to navigate and use technology to meet their learning needs effectively.

Within the HEI, the Personal Academic Tutor (PAT) system is seen as integral for instilling a sense of belonging within students, and to support their academic and personal journey through HE. A personal tutor can be defined as "*a member of academic staff who provides academic guidance and pastoral support to a student during their course of study*" (Advance HE, 2015). The lived reality for personal tutors in recent years

has been challenging, as they find themselves in the position of supporting not only their students' academic development, but also their mental wellbeing. The increased workload and blurring of the boundaries between academic and pastoral support can have a negative impact on not only the consistency of support provided, but also on the resilience and wellbeing of staff (Augustus et al., 2023). The study skills portal could alleviate some of the pressures of the role by providing a consistent and accessible student-facing resource, which PATs could 'prescribe' to students pre- or post-meeting. This would not only empower students to explore relevant issues identified in their individual academic journeys but also ensure that they receive correct and consistent information from the best teams within the institution to support them at different points in that journey. The *What is a PAT* section in the portal encourages students to reflect on what they believe the role to be, before sharing definitions, expectations and mutual responsibilities of both tutor and tutee, using interactive images and flipcards. This targets a range of UDL guidelines on means of engagement, including authenticity, fostering collaboration, clarifying expectations and promoting reflection.

Development of the *Studying at University* section of the portal drew on the expertise of COP members coming from a range of disciplines. The *Examination skills and memory techniques* theme was authored by the COP's law lecturer, who had originally written the guidance for her own students and was asked to adapt it for the portal. Some courses do not include exams, but this was clearly an area which would be relevant to students on other courses and so needed to be represented. Flipcards were used to define different types of exams and question types, and clickable headings were used to share the process and rules of examinations in the institution. Questions were posed to encourage students to reflect on their preparation for exams. While some of this content may not have seemed immediately relevant to some students, the memory techniques section revealed itself to be very enlightening, sharing a range of ideas to improve memory and recall, expressed through audio recordings, memory walks, flashcards, stories and colour. The theme suggested actions to help take care of yourself during and after exams, which itself is a thread throughout the portal, culminating in a theme dedicated to *holistic self-care and wellbeing*. This final theme was created by student support and wellbeing colleagues and centred around interactive scenarios of conversations between a student and a member of the student support team, demonstrating authenticity and empathy.

The study skills portal has since been evaluated through student-staff partnership. Students were able to voice their needs for further development for the portal through three of their peers who co-designed and facilitated the research in partnership with members of the COP. 91% of the 710 students who responded to the survey confirmed that the portal was supportive, with 87% indicating its ease of use and 93% suggesting they would recommend it to peers. Student comments were positive, indicating

improvements in productivity and organisation. Following student feedback, navigation between themes was improved. Elements of some themes were rewritten to demonstrate relevance across student levels, particularly postgraduate level. These developments also enacted the principle within the UDL framework of removing the barriers that could prevent access and engagement, by optimising relevance and representing a diversity of perspectives.

A course leader survey elicited 52 responses, and of those 83% indicated that they were directing students to the portal. Now the portal is regularly integrated into skills module teaching, and it has been noted that the resource is particularly valuable when used to underpin activities and discussions, particularly with international students. One postgraduate module leader has noted a 23% increase in marks in the first year of incorporating the resource. More recently, statistics show that *Starting at University* has enjoyed a 130% increase in use between August – November 2024, compared with the same period a year before, and *Studying at University* an 84% increase.

Today, the Study Skills portal is maintained and developed by the Study Skills Community of Practice. Neurodiverse in its composition, the COP includes the original three members who developed the original resource, alongside academic and professional services staff from across the HEI. The COP tries to maintain a broad membership to include as many academic Schools as possible and promote and share good practice in study skills development. In 2024, following student demand through the SAP project, a new theme on academic writing was added to the portal, and a research project theme is in development for 2025. To offer further means of engaging with the portal's content, the library team's online webinar series has been renamed *Study Skills Live*, so that students can interact directly and authentically with librarians and colleagues in other professional support services around topics to support research, referencing and organisational skills.

Conclusions and recommendations

The co-creation of the HEI's study skills portal, based on UDL principles, has enabled an embodiment of practice intended to empower students to access materials to support the development of study skills. The community of practice was central to the development of an accessible and relevant portal. The learning technologist's expertise in building the portal using accessible authoring software was critical to realising the community's vision of offering multiple means of engagement for students both entering HE and already studying with the institution. The collaboration of community members, drawn from various academic and professional services departments, offered a range of experiences and skills to draw upon, from teaching and technology through to research and project management.

Looking ahead, our priorities are to actively promote and embed the portal within the

institution, and to remain dynamic and responsive, ensuring that the portal remains relevant to students' diverse needs. On reflection, having two theoretical frameworks (UDL and COP) to underpin our work has provided a strong foundation for curriculum design. Collaboration has been a key component in the evolution of the portal, ensuring that tasks are completed in a timely manner. Having a diverse skill set within the COP has enabled the application of UDL principles throughout the project, while the involvement of students in evaluating the portal has given agency to them and provides direction for future developments.

To fully realise the benefits of the UDL framework in this project, it was important to promote and recruit to the COP from across the HEI. To do this, COP members have directly approached colleagues who share and demonstrate innovative practice within their department. We also work with students to gather feedback and ideas from across the student body, through student-staff partnership projects and student teams. Raising the profile and awareness of the COP's work through meetings, training events and conferences ignites new ideas to take the portal further. Recent ideas sparking excitement among the COP focus on creating more in-house content in a variety of formats, including more visual representations. More audiovisual, interactive and scribing or mapping of ideas will support the diverse representation of content and the decoding of complex topics.

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Constructing Culturally Safe Learning Spaces for International Students

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ABSTRACT

This commentary explores the intersection of cultural safety and Universal Design for Learning (UDL) principles to establish inclusive and supportive educational environments for international students in UK higher education. Reflecting on our transition from international students to educators, we share insights derived from literature, academic discussions, and practical experiences, including the development of a staff workshop for the Power of Potential Conference (2024). We propose a Model of Evolving Cultural Competence that underscores cultural humility and continuous learning as pivotal to creating culturally safe learning spaces.

Through an analysis of three UDL checkpoints—sustaining effort and persistence, language and symbols, and expression and communication—we offer actionable strategies for educators to foster engagement, representation, and participation. These include integrating diverse student perspectives, leveraging multimodal resources and providing inclusive assessment methods to empower international students. Our approach challenges normative biases, promotes cultural curiosity, and addresses power imbalances, emphasising the co-creation of knowledge and mutual learning. By combining cultural safety and UDL principles, this paper advocates for a dynamic and reflective pedagogy that enhances student belonging, inclusivity, and equitable engagement. These practices aim to benefit both students and educators, fostering transformative learning environments that support diversity and cultural competence.

Keywords

cultural safety, universal design for learning, cultural competence, international students

INTRODUCTION

In the academic year 2022/23, international students comprised 26% of the total student population at universities in the United Kingdom, thereby solidifying the

nation's status as the second most favoured destination for international students worldwide (Bolton, Lewis & Gower, 2024). The growing presence of international students significantly enhances the multicultural environment within UK classrooms, prompting educators to reassess traditional pedagogical methods and prioritise the establishment of culturally safe learning spaces. In this commentary, we reflect on our journey from international students to educators and share insights derived from our experiences supporting numerous international undergraduate and postgraduate students. These insights are informed by our literature review, academic discussions, and practical experiences that contributed to the formulation of a staff workshop and presentation for the Power of Potential Conference (Sundari, Fernandez and Mauro-Bracken, 2024). We contend that culturally safe learning spaces can be cultivated through the integration of Universal Design for Learning (UDL) principles. By incorporating UDL principles alongside cultural safety considerations, we underscore the importance of developing culturally safe learning spaces that empower all students and foster equitable participation and engagement. Although the authors recognise the global perspectives in relation to these concepts would be important, the commentary is based on the authors' experiences in UK higher education institutions (HEIs) and the actions related to supporting international students in these settings.

The concept of cultural safety originated from the experiences of the Māori people in New Zealand and has been increasingly applied within the context of the United Kingdom (Lokumage et al., 2023). At the core of cultural safety is acknowledging sociocultural differences while addressing power imbalances in educational environments. This approach endeavours to create inclusive spaces that empower marginalised groups, thereby fostering a sense of belonging and psychological safety for all students. As educators who possess firsthand experience in navigating transitions between educational systems and acculturating into the UK higher education framework, we found ourselves in a unique position to discern the intentions of policies related to equality, diversity, and inclusion. Furthermore, we recognised the practical disconnects that hinder the delivery of inclusive education and the opportunities overlooked by colleagues who fail to utilise the international student cohort as a valuable resource, instead perceiving them as empty vessels requiring knowledge acquisition. Reflecting on our dual perspectives has given deeper insights into these dynamics, allowing us to better understand the gaps between policy and practice and to envision more inclusive, dynamic and intercultural educational environments.

Challenges predominantly emerge within the domain of cognition or upon our awareness of their existence. Establishing culturally safe learning spaces constitutes an emotional endeavour, transcending mere formal obligation; it necessitates introspection

and alignment with one's purpose. Therefore, we begin by introducing our model of evolving cultural competence, derived from a rigorous analysis of prevailing theories of cultural competence and discussions concerning the development of cultural competence in individuals. Next, we offer practical recommendations for translating this theoretical and perceived knowledge into practice for educators seeking to support international students in higher education.

By integrating cultural safety with three UDL guidelines (CAST, 2024)—designing options for sustaining effort and persistence (checkpoint 8), for language and symbols (checkpoint 2), and for expression and communication (checkpoint 5)—educators can ensure that diverse perspectives are acknowledged and respected, enabling students from all backgrounds to feel valued and supported. The authors have intentionally selected these three checkpoints as they all emphasise the 'support' component of UDL, concentrating on the design of multiple means for engagement, representation, and action & expression (CAST, 2024). In this paper, we will examine the pedagogical implications of these three UDL checkpoints within the framework of establishing culturally safe learning spaces for international students. And integration of our lived experience as students and educators.

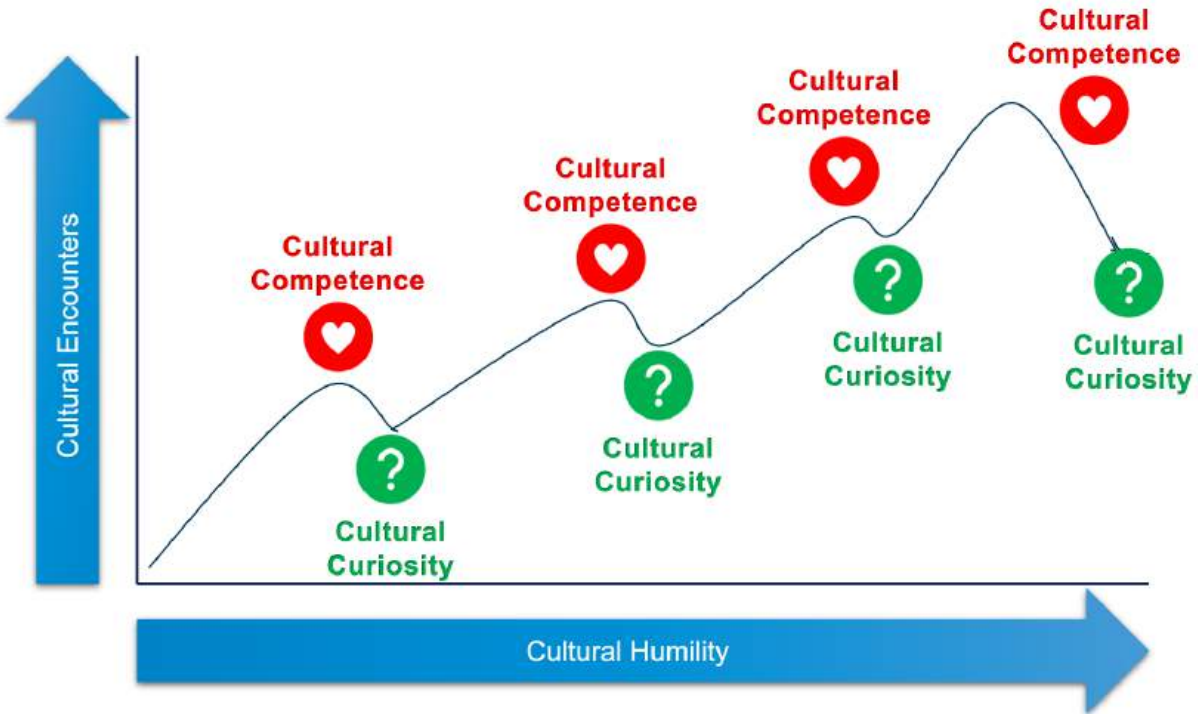
A model of evolving cultural competence

In our discussions, we consistently emphasised the critical role of educators in cultivating knowledge and understanding while exploring innovative teaching methods that are responsive, inclusive, and appreciative of the diversity present within the classroom. Such an approach fosters a culture of curiosity and inspires students to engage in enquiry about one’s own and others' cultures in the context of learning. Furthermore, we underscored the necessity of alleviating fear and anxiety among educators who are facing new challenges in the context of limited professional development opportunities.

In UK higher education, cultural competence means understanding and respecting cultural differences, adapting teaching methods to meet diverse needs by using critical reflection, and fostering an inclusive learning environment to support international students academically and socially (Guillén-Yparrea & Ramírez-Montoya, 2023). However, our critique of cultural competence frameworks revealed that, although they aspire to enhance interactions and communication across cultures, they frequently fall short by overly concentrating on the acquisition of specific cultural knowledge (Li et al., 2023). This limited focus may inadvertently perpetuate stereotypes and neglect to address more profound issues related to power and privilege, in addition to failing to recognise that cultural competency is not a linear process. Cultural humility, as advocated by Foronda (2020), provides a more dynamic and reflective approach,

encouraging continuous self-examination and an ongoing commitment to understanding cultural differences. This viewpoint aligns seamlessly with the principles of UDL, as it advocates for flexibility and responsiveness to the diverse needs of students (Bracken & Novak, 2019; CAST, 2024). Culturally sustaining pedagogy, as explored by Paris and Alim (2014), further substantiates this perspective by highlighting the importance of sustaining and valuing cultural diversity within the educational landscape. This approach not only acknowledges the cultural backgrounds of students but also endeavours to maintain their cultural identities within the educational context (Hanesworth, Bracken, & Elkington, 2018), thus enabling students to perceive themselves as contributors of new and relevant ideas to discourse. This culminated in our development of a Model of Evolving Cultural Competence (**Figure 1**).

Figure 1: *A Model of Evolving Cultural Competence*



We perceive cultural competence as an ongoing journey rather than a fixed destination, as is the process of creating culturally safe learning spaces. This journey commences with the educator's curiosity about a phenomenon, concept, or situation that has not been previously encountered, as well as a demonstration of cultural humility to learn from various perspectives. This initial encounter may temporarily yield a certain level of cultural competency. However, exposure to different phenomena, concepts, or situations with diverse groups of students may reveal gaps in one’s competence.

As educators, approaching each new encounter with sustained cultural curiosity can significantly enhance our sense of cultural competence. These repeated encounters of cultural learning experiences, along with a genuine willingness to listen and engage, can foster the development of cultural humility. We define cultural humility as the practice of recognising and reflecting on one's own cultural biases and limitations whilst remaining open to learning from others. It encompasses self-awareness and an understanding of diverse perspectives, promoting the practice of posing questions to facilitate mutual learning and understanding (Danso, 2018; Foronda et al., 2016). We refer to this as an evolving cultural continuum, as illustrated in Figure 1.

Openly sharing insights gained from these inquisitive cultural encounters with international students, and inviting them to reflect alongside us as educators, possesses the potential to engage them in this shared exploration and establish a foundation for creating culturally safe learning spaces. The final decline represented in the graph indicates that cultural learning is an ongoing process; hence, the cessation of engagement in cultural encounters does not ensure the maintenance of competency. This continuum not only acknowledges the dynamic nature of cultural competence, but also emphasises the necessity for continuous self-reflection and adaptation in our encounters with students from varied backgrounds.

Taking into account the imperative for educators to advance their cultural competency to promote culturally safe learning spaces, we shall now outline practical strategies derived from the supportive component of the UDL guidelines. The pedagogical implications will be analysed through the three UDL checkpoints: designing options for sustaining effort and persistence, language and symbols, and expression and communication, with the objective of establishing a culturally safe learning space for international students.

Designing options for sustaining effort & persistence

As social mobility continues to rise and the population of international students expands, undergraduate and postgraduate classrooms are becoming increasingly diverse in terms of background, ability, and learning preferences. Simultaneously, HEIs are experiencing pressures to enhance productivity while operating with constrained resources. One approach to increase productivity is to increase the size of lecture classes, which consequently leads to a higher student-to-faculty ratio (Dean et al., 2017). In these circumstances, educators should acknowledge that they hold a viewpoint grounded in their own experience and thus should invite learners to bring their experiences into the classroom; such an open invitation provides space and relevance to the learner and enables a co-creation of learning that leverages the diversity within the classroom (Gilmore et al., 2022).

Furthermore, knowledge construction occurs through the integration of pre-existing knowledge, which is significantly influenced by familial background, educational experiences, literature, social contexts, and the cultural environments encountered throughout learners' lives (Takacs et al., 2020). The educational content presented will only be meaningful to the learners when they can establish connections based on their personal experiences and sources of identity (Ahn & Davis, 2010). Therefore, fostering a sense of belonging (checkpoints 8.3 and 8.4) transcends being merely an aspirational objective and becomes a fundamental component of effective design (Rose & Meyer, 2002).

It is important to acknowledge that the curriculum is 'normatively White' (Ladson-Bilings, 1998) and that, as educators educated in the modern Western education system, we potentially perpetuate this whiteness and the lack of cultural sensitivity (Harper et al., 2018; Meda, 2020; Thomas & Quinlan, 2023). This can further alienate international students as they are constantly attempting to find a means to relate to the content to make sense of the learning (Gaudelli, 2020). To address this issue, we should focus on clarifying the meaning of specific phrases and providing a glossary (checkpoint 8.1) to facilitate the development of knowledge from foundational to advanced concepts. Additionally, wherever possible, educators should refrain from using rhetorical language and culturally specific humour without proper context and explanation, as this will enhance inclusivity in the learning environment.

The above suggestion is not an attempt to generalise learning but to pave a level ground for all students to succeed. At the same time, learning spaces should help learners stand out for their individuality. Rather than seeing them as a collective of international or home students, introductory sessions should be used to identify the diversity present in the classroom, either verbally or by using tools such as Mentimeter or Vevox polls. Educators should encourage learners to share unique experiences about their home countries that the global audience might not be aware of, showcasing cultural curiosity and respect for the information shared by the learners. Thus, collaboration and interdependence in learning should be fostered by recognising students as active participants in the knowledge-creation process. Session plans should be designed to ensure that most students feel included in the content. By consistently engaging with this approach, coupled with a sense of humility and openness, educators can empower learners to develop their sense of belonging and make valuable contributions to their education.

Designing options for language & symbols

Academic English is 'no one's mother tongue' (Bourdieu and Passeron, 1994, p.8) yet is perceived as the standard language within educational environments (CAST, 2024). Consequently, the linguistic competencies of international students are often assessed against Western standards of communicative practices, leading to the perception that they are deficient (Alegado & Fernandez, 2025; Maringe & Jenkins, 2015). This hierarchical framework, which positions a certain language as superior, implicitly or explicitly communicates a sense of inferiority to students who are non-native speakers. Such a perception can adversely affect international students' self-esteem and willingness to participate in academic discourse, perpetuating feelings of exclusion.

We acknowledge that international students employ a variety of languages to process information and express ideas, making it impossible to accommodate every linguistic background within a learning space. However, we must actively challenge the colonial narrative of monolingualism prevalent in educational systems. It is essential to shift this narrative by leveraging students' metalinguistic awareness as valuable learning resources, rather than viewing their usage of home languages as problematic, silencing their voices (Hélot and Laoire, 2011). This is in line with UDL guidelines in addressing biases related to language and symbols in educational environments (CAST, 2024). By enhancing accessibility in the language and symbols used in our pedagogies, we enable international students to express their knowledge and understanding through multiple means.

This can be achieved by encouraging international students to use translation tools such as iTranslate or DeepL Translate, enabling them to comprehend complex concepts in their native languages, and speech-to-text software to aid with notetaking and participation by converting spoken words into text. Educators can also incorporate infographics and other visual representations to complement verbal and written instructions (CAST, 2024), enhancing understanding through multimodal resources. Utilising closed captioning during lectures offers support by reducing language-related anxiety and enhancing comprehension and focus (Balci, Rich & Roberts, 2020). These strategies offer international students multiple entry points to engage effectively with the learning resources provided. These also promote collaboration among students by encouraging the sharing of unique perspectives and experiences, thereby fostering a psychologically safe environment. This shared space allows international students to express themselves openly, in alignment with UDL's checkpoint 5, which promotes multiple means of expression & communication. This approach not only enhances their learning experience but also fosters a stronger sense of community within the educational environment.

Designing options for expression & communication

One of the key principles of UDL is providing multiple means of action and expression, which allows students to demonstrate their knowledge in various ways (CAST, 2024). This principle is particularly important in culturally diverse classrooms, where students may have different strengths and preferences when it comes to expressing their understanding. Checkpoint 5.2 from CAST's UDL 3.0 guidelines emphasises the importance of using multiple tools for construction, composition, and creativity.

Much of the literature on international students provides a deficit model and indicates their social isolation (Arthur, 2017; Baba & Hosoda, 2014; Pritchard & Skinner, 2002), highlighting their need for support (McDonald, 2014), and others assume that the learners are here to create intercultural cooperation (Campbell, 2012; Kimmel & Volet, 2012; Pritchard & Skinner, 2002). However, the authors reflected on our interaction with international students and found that they are driven and purposeful in achieving their goals. Therefore, utilising UDL to empower students to demonstrate their knowledge and create opportunities for sharing their perspectives is a win-win situation. The adoption and application of a variety of methods and tools that offer different approaches to expression support the diverse needs of students and enhance their learning experience. For instance, working with colleagues and the technology team on creating inclusive activities such as storytelling, podcasts and multimedia presentations allowed students to express their ideas creatively and engage more deeply with the material from their perspectives.

Furthermore, providing opportunities to practice assessment tasks and offering time to work with others in an environment where diverse views are respected, and curiosity is fostered among their peer's increased confidence and willingness to discuss and interact more autonomously and collaboratively. It is, therefore, important to reflect on how assessments are constructed, with our underlying values and norms informing what we believe demonstrates learning (Hanesworth, Bracken & Elkington, 2018). Offering time for students to interact with these tasks and recognising various perspectives provides opportunities to develop inclusive approaches to assessment that benefit all students.

When integrating new methodologies and tools, it is crucial to recognise the potential challenges that may arise, including variations in cultural perspectives, language barriers affecting comprehension of educational terminology, access to modern technologies, and varying levels of familiarity with these methods among learners from diverse backgrounds. These challenges should motivate educators to devise innovative strategies for effective pedagogy (Kieran and Anderson, 2018) by approaching such obstacles with cultural curiosity and opportunities for pedagogical refinement (Sleeter, 2012). This necessitates seeking professional development opportunities and engaging

in dialogues with colleagues to explore and inquire about differences. Collaborating closely with students and investing in adaptive methodologies whilst developing resources that stimulate curiosity can mitigate anxiety and frustrations stemming from differences, ensuring the effective application of a variety of instructional tools.

Furthermore, when learners come from diverse educational backgrounds, it becomes vital to collaborate with them to enhance their understanding of pedagogical practices within the UK higher education system. The inclusion of student perspectives is a pivotal component of UDL and ensures their voices are integrated into the learning process (Rao, 2015). These initiatives will aid in establishing clear expectations, cultivating new skills and knowledge, and fostering a sense of belonging (QAA, 2024).

Challenges

The adoption of these strategies may present certain challenges for educators, including an increased workload associated with the integration of UDL principles, concerns regarding the use of learning technologies, and the need to balance subject matter expertise with pedagogical skills. This is particularly relevant in courses governed by professional regulatory bodies, where educators often serve more as gatekeepers of registration than as facilitators of learning. Overcoming these challenges involves providing professional development opportunities, collaborating with colleagues, and adopting scalable resources and technologies that enhance accessibility. As UK HEIs increasingly rely on international student recruitment, a more proactive approach is needed to rethink teaching practices and institutional support systems. Leveraging the existing diversity of staff and students within HEIs—by encouraging them to share their varied perspectives and strategies—can maximise potential, foster inclusive teaching practices, and create culturally safe learning spaces that support and empower all students to thrive academically, regardless of background.

Conclusion

Building on the key themes from our review, we believe fostering cultural curiosity is essential. Over two years of collaboration, we have focused on supporting colleagues to work inclusively, ask reflective questions, and enhance classroom resources to promote student participation and a sense of belonging. We advocate for students to explore diverse perspectives, enhancing their learning experience and fostering a commitment to inclusivity and mutual respect within the educational community (Foronda 2020). By integrating these principles, we aim to create culturally safe learning spaces where cultural humility and ongoing learning are prioritised, benefiting both students and educators.

Integrating these concepts of cultural safety with UDL principles helps create a more inclusive environment, particularly in higher education settings with international students. This holistic approach addresses immediate student needs and promotes long-term cultural curiosity, humility, and sensitivity among educators and students. Throughout this process, we have recognised the importance of continuous reflection and adaptation in teaching practices. Supporting colleagues in this development ensures that students feel valued and included, empowering both students and educators. Reflecting on power imbalances remains a continuous necessity. In conclusion, fostering cultural curiosity and inclusivity through reflective practices and UDL principles creates culturally safe learning spaces, not only for international students, but for all students.

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What is Next for Universal Design for Learning? UDL 3.0 and Implications for Diverse Settings

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ABSTRACT

The Universal Design for Learning (UDL) framework guides educators and instructional designers in planning for learner diversity as a core facet of curricular design. Following an extensive four-year process, a revised UDL 3.0 framework was released in 2024 that expanded considerations for learner diversity and attended to exclusionary systemic biases. This refresh of UDL brought marked changes in guideline language that incorporated complex concepts such as learner identity, intersectionality, learner-centeredness, and interdependence. Through a conversation cafe during the International Conference on Education Quality, global educators dialogued about how they interpret these changes in terms of their understanding of UDL and its implications for inclusive education practice in their local contexts. Participant feedback on the revised framework revealed varied perceptions of the strengths of the UDL 3.0 language and applications for practice in differing settings, such as early years, formal school settings, tertiary education, and alternative education contexts, and potential challenges related to cultural and linguistic differences.

Keywords

Universal Design for Learning, inclusive education, curricular design, globalisation

INTRODUCTION

Universal Design for Learning (UDL) is an approach to improve and optimise teaching and learning for all learners by setting clear, rigorous goals, anticipating barriers, and proactively designing to minimise those barriers (CAST, 2024a). Similar to how the principles of universal design in the architecture sector address the varied needs of users as an intentional part of the design process, UDL promotes universal access as a core ingredient in design (Dalton, 2020). In doing so, universal design aims to reduce inefficiencies and costs associated with redesigning to accommodate unanticipated needs (Center for Universal Design, 2008).

The UDL framework provides broad guidance intended to be applicable across educational contexts and disciplines for incorporating strategic flexibility in student engagement, content representation, and student action and expression of their learning (Meyer & Rose, 2005; Rose & Gravel, 2009). UDL has been adopted globally in varied ways, such as part of national and institutional inclusive education policies, teacher training and professional development initiatives, and speech, language, and communication classroom-based activities (Alvarez et al., 2020; Campbell et al., 2016; Flood & Banks, 2021; Galvin & Geron, 2021; Timuș et al., 2024). Though historically operationalized for curriculum development, how UDL addresses instructional methods and situational variables is characteristic of an instructional design theory (Gronseth et al., 2022). Used as part of a theoretical framework, UDL can ground expectations for the likelihood of learner agency in goal attainment.

The framework has evolved during the past three decades, and its spread worldwide is marked by the breadth of ways it is viewed. Bracken and Novak (2019) gathered global perspectives on learning communities, instructional design, transitions, leadership, apprenticeships, and accessibility, showcasing the increasing global interest in UDL across tertiary education. Galkienė and Monkevičienė (2021) also synthesized perspectives from Polish, Lithuanian, Finnish, and Austrian educator-researchers through an action research study. They articulated UDL as a lens for re-examining educational practices and teacher training, a process for developing expert learners, and a driver of transformational attitudinal and systemic change at varying levels.

In preparation for the conversation cafe session that will be described later in this article, we inquired through our professional networks about what UDL means to educators in Ireland, Japan, the United States, and Wales, and their responses similarly illustrate the diversity of perspectives (Gronseth, 2024):

- It is learner-centred.
- It is focused on developing student self-regulation.

- It is about rethinking ways of teaching to cater to diverse student populations.
- It offers practical guidelines to make content more accessible.
- It is flexible and enables educators to consider needs in their contexts.
- It helps educators anticipate and welcome learner differences.
- It honours what students bring to an educational encounter.
- It builds inclusivity in teaching through the expansion of suitable options.
- It supports student decision-making about how to learn.
- It creates learning environments where students and teachers can explore.
- It is about inclusion.

Through the diverse views of UDL, concerns have been raised about how complex UDL is to implement and what distinguishes UDL from other educational frameworks and philosophical approaches. Since its inception, UDL conceptualisation has ebbed and flowed across spans of operalisation to liberalisation as a philosophical "movement" (Howery, 2021, p. 33). Edyburn (2010) advises the field to recognise how universally designed education differs from universal design in architecture, focusing primarily on the interactions among key instructional components (e.g., goals, objectives, instructional strategy, scaffolds). For the impacts of UDL designs to be reliably researched, they should be implemented comprehensively across a curriculum, proactively from the beginning of curricular design, intentionally addressing the range of learner variability, and iteratively through a design-redesign process (Lowrey, 2016). Critics have observed how UDL goes beyond "good teaching" and acknowledged that inclusive learning environments are not likely to happen without concerted effort (Edyburn, 2010; Hollingshead, 2021). There are also unjust dimensions to many educational systems that flexibility and adaptability may be insufficient to fully address (Fritzgerald, 2020; Galvin, 2024).

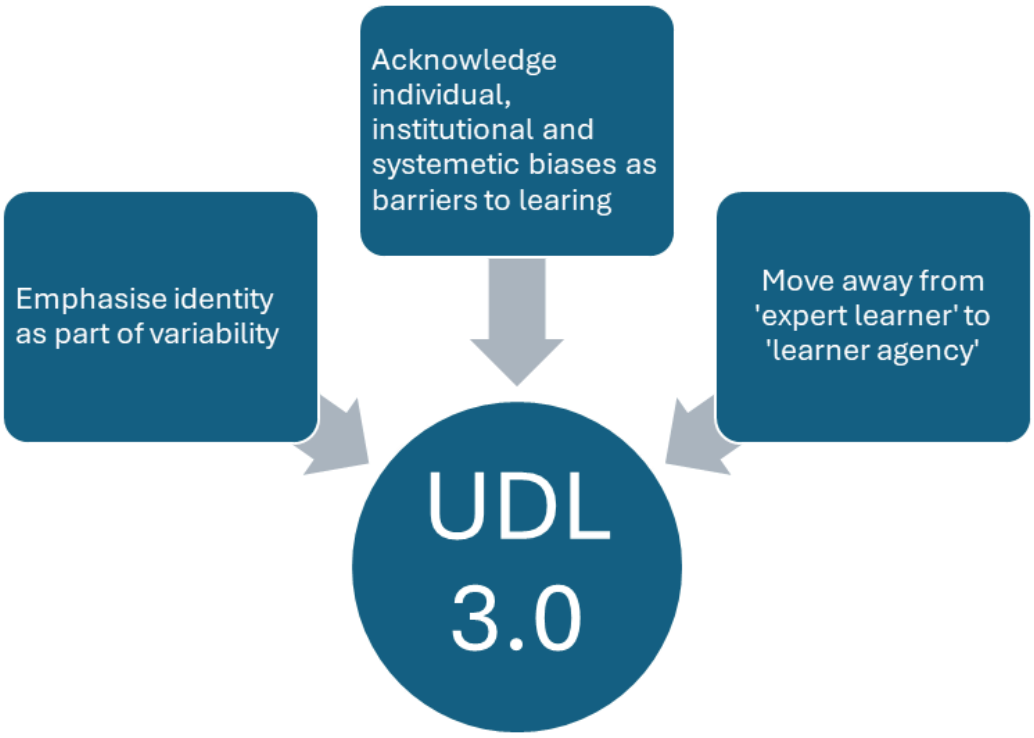
UDL 3.0

In 2020, CAST initiated a four-year review and redesign of the UDL Guidelines, emphasising the importance of addressing biases and exclusion in educational systems and empowering learners (CAST, 2024b). This was a collaborative effort, with CAST establishing an advisory board, a collaborative, and a young adult advisory board to guide, provide feedback, and offer insights into the review and redesign process. The public was also involved, with CAST engaging in a public consultation process that involved surveys and focus groups to understand people's perspectives and lived experiences of applying or learning through the UDL Guidelines 2.2. Informed by this feedback and an examination of the research that grounded Guidelines 2.2 and current equity-oriented research, an initial draft of the 3.0

Guidelines was designed and distributed for public consultation. Feedback was incorporated, and a final version was published in July 2024.

Through the changes to UDL guidelines from 2.2 to 3.0, the priority of addressing learning barriers by changing "the design of the environment rather than to situate the problem as a perceived deficit within the learner" was maintained (CAST, 2024b). Three significant and interdependent changes informed the redesign of UDL's nine guidelines and accompanying considerations in service to this aim (Figure 1). The first change was the explicit acknowledgement of the need to recognise individual, institutional, and systemic biases as barriers to learning (Fritzgerald, 2020). This revision broadened the contextual considerations to acknowledge exclusionary traditions and practices that may be present. Secondly, the revised guideline language expanded the concept of variability from the neurosciences to emphasise the importance of identity within variability (Gade & Forsgren, 2019). Finally, the goal of UDL was modified from developing expert learners to supporting learner agency, which refers to empowering students to set goals and make responsible decisions for their learning success (Organization for Economic Cooperation and Development [OECD], 2019).

Figure 1: *Key changes in UDL 3.0*



These changes have led to more learner-centred language within the guidelines, a focus on *designing with* rather than *providing for*, the threading of identity throughout the three UDL principles, and considerations that explicitly call the educational community to recognise and challenge biases and exclusionary practices. For example, the principal headings were changed from "provide" to "design" multiple means, as "provide" was viewed as teacher-centric and "design" was intended to amplify the co-creating opportunities for engagement, representation, and action and expression with learners. Within each of the three UDL principles, changes have been made to the wording of the associated guidelines and considerations meant to honour the aims of the 3.0 revision of celebrating identity, challenging biases and exclusion, and supporting learner agency (see CAST, 2024c for further details of the specific changes). For example, new considerations were added (previously known as checkpoints) in the Engagement ("Nurture joy and play" and "Cultivate empathy and restorative practices"). In Representation, ("Represent a diversity of perspectives and identities in authentic ways" and "Address biases in the use of language and symbols") were added. Finally, in Action and Expression ("Address biases related to modes of expression and communication" and "Challenge exclusionary practices") were included. Many of the verbs used in the guideline phrasing were updated to honour and empower learners, such as shifting from "Offer alternatives for auditory/visual information" to "Support multiple ways to perceive information" (within Guideline 1 of designing options for perception).

Conversation Cafe Design

Just before the formal release of UDL 3.0, a workshop was conducted at the International Conference on Education Quality, held at the University of Worcester, UK, in June 2024. The workshop followed a conversation cafe-style approach to engage the 18 experienced international UDL practitioners in the space, with their backgrounds differing across educational sectors from early years to higher education and support staff. The purpose of the conversation cafe was to elicit participant feedback on the draft for the revised UDL 3.0 Guidelines. The session was designed to be dialogic, using storytelling and discussion to explore the implications of UDL 3.0 in practice. To achieve this, the session was broken into three sections –

1. *What does UDL mean to me?* The facilitators used storytelling to share what UDL means in their contexts while sharing stories gathered from the UDL community in different contexts. An invitation followed for participants to share what UDL means to them with people in their groups or with the full audience.

2. *Proposals for UDL 3.0.* The facilitators outlined the trajectory of UDL. The proposed key changes and their rationale were discussed. Time for participants to reflect on the changes and ask questions was an important part of this section.
3. *Round table discussions.* Participants ideated on the potential implications of the draft UDL 3.0 Guidelines on their practices. Attendees sat in groups at three roundtables in the conference room, and each table was provided with a printed version of the draft UDL 3.0 Guidelines and flipchart paper with one UDL principle at the top of each page and sections marked for notes on strengths and challenges of that principle. After an introduction to the UDL 3.0 refresh process, three 10-minute rounds of small group discussion ensued. During each round, the table group discussed one principle of focus, considering the updated language and additions and identifying strengths and challenges. Each co-author served as a note-taker for the table groups, sitting with a table group during a round and rotating among the groups to discuss the same principle across the tables. The workshop concluded by synthesising themes across the discussions for each principle.

Conversation Cafe Feedback

The data gathered from participants' verbal feedback and the written artifacts from the conversation cafe were themed using Braun and Clarke's (2006) thematic analysis.

For the Engagement principle, there was collective agreement about introducing the nature of joy and play, with participants looking forward to implementing that into practice. They also appreciated how this addition signalled a recognition of UDL application at the early years level. The interconnectedness of belonging and community was also seen as positive. Discussion around the updates within the Representation principle emphasised the inclusion of addressing bias to cultivate belonging, as it is more outcomes-focused and intentional. Comments relating to the Action and Expression principle revisions primarily focused on how the inclusive language aimed to intentionally and explicitly address biases. Overall, autonomy of context and implementation was seen as a positive across educational levels, and many participants expressed appreciation that the guidelines went deeper in tackling bias by including identity. The introduction of the words *considerations* and *design options* was interpreted as explicitly highlighting the intentionality of planning from the outset rather than resorting to retrofitting.

However, some of the strengths discussed were also seen as challenges. There needed to be more clarity on how to address bias and whose role it would be to monitor that process. Some members expressed uncertainty about how learners were to become more self-aware. There was some reservation with the language shift that now focuses on learner agency rather than learner expertise, but it still carried a central focus on the teachers.

There were reservations about the complexities of concepts such as "empathy" and recommendations for further breaking these concepts down for understanding.

Some tables pondered, "What is the overall vision of the framework now?" since the revision broadened the consideration of learning barriers beyond those connected to disability. For example, the Representation principle no longer seemed to focus on special education explicitly, and the revised terminology (related to maximising transfer and authentically supporting a diversity of perceptions and identities) was not immediately evident for how the guidance could be implemented. Concerns were raised about the need for greater diversity and representation in curricula. Finally, some expressed reservations about the Action and Expression guidance being more theoretical than practical and likely to be contested in contexts with timed state exams, minimal allowances for choice in curriculum design, and limited digital literacy and access to digital technologies.

Implications for Practice

The 3.0 guidelines maintain prioritisation of curriculum and educational programme/instructional design to empower learner agency and foster strategic flexibility through meaningful design considerations depending on the context and learner variability. The updated language incorporates intentional ways educators and instructional designers can counter systemic biases and exclusionary practices. However, broadening the framework to address social justice issues adds further complexity to a curricular design approach that was already difficult to empirically research. With the varied understandings of UDL in prior UDL framework versions and the newly revised 3.0 framework just introduced, it is recommended that implementation efforts begin with space wherein stakeholders can converge on the role of UDL in their school or organisational contexts. Additionally, collaborative discussions should support shared interpretation of new terminology (e.g., "learner agency," "empathy," and "bias") to alleviate confusion and ensure a consistent understanding across teams.

While the framework now considers a more diverse range of learners, there is still space to showcase how practitioners can embed these changes into their practices across different educational contexts. This includes providing concrete examples that link theoretical shifts to practical applications, particularly in areas with rigid assessment structures, constrained curriculum design choices, or limited digital resources. To support the successful application of the revised principles, professional learning should also explicitly address how educators might develop learners' self-awareness and co-create inclusive environments where belonging and identity are actively nurtured. Furthermore, the evolution of the framework's scope—from a disability-centred focus to a broader

conceptualisation of barriers—requires clear articulation of the overall vision and intended outcomes to maintain coherence and purpose in implementation efforts.

The conversation cafe feedback shared in this article offers insights into what the UDL 3.0 refreshed framework meant to a cadre of global UDL advocates and practitioners. Complex concepts embedded in the updated framework of language, such as learner identity, intersectionality, learner-centeredness, and interdependence, had varied interpretations across conversation cafe participants. While incorporating such terms more comprehensively addresses inclusive education considerations, framework adopters will need additional resources to explain the more complex language.

A 2019 report on Diversity, Equity, and Inclusion emphasised that while individual support may sometimes be necessary, eliminating systemic barriers through universal design is more sustainable (EUA, 2019, p.23). Another EUA report on teaching and learning approaches reveals that HEIs often lack institutional support for embedding UDL, despite EU directives requiring accessible digital platforms. The report underscores that "UDL does not advocate a single teaching method for all but rather a variety of methods to offer equitable learning opportunities" (EUA, 2021, p.7).

Incorporating intersectionality (the interconnecting of multiple categorisations) into the UDL framework provides opportunities to disrupt and dismantle inequalities within HE. However, this work is not "one-size-fits-all"; focusing on a single identity or group risks ignoring the richness and complexity of individuals' identities and the systemic barriers they face. An intersectional approach allows practitioners to address these complexities holistically, fostering equity and inclusion in meaningful and transformative ways (Galvin et al., in-press). Further research is needed to extend such conversations in other geographic regions and with teachers, researchers, curriculum designers, educational leaders, and policymakers across a diverse range of educational contexts from early years to tertiary levels.

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Universal Design for Learning and English as an Additional Language for Pre-service Teachers in England

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ABSTRACT

This article explores the application of the Universal Design for Learning (UDL) Guidelines to Initial Teacher Education (ITE) in England, with a particular focus on preparing pre-service primary teachers to teach multilingual pupils learning English as an Additional Language (EAL). Foley et al.'s (2018, 2021) teacher education programme design for EAL is synthesised with the UDL framework to propose a transferable model for embedding EAL pedagogy in ITE. The proposed design emphasises multiple means of engagement, representation, and expression, fostering critical reflection, collaboration, and sociolinguistic awareness among pre-service teachers. By aligning Foley et al.'s approach with UDL principles, this article makes explicit the intersection of inclusive practices and specialised pedagogical knowledge required for teaching multilingual children. The synthesis of Foley et al.'s programme design with the UDL framework may help mitigate gaps in EAL policy and enable disseminating best practices for teacher education. The findings underscore the importance of agency, ethical reflection, and professional knowledge in preparing teachers for diverse and inclusive classrooms, highlighting the potential of UDL to advance equity in teacher education.

Keywords

EAL, initial teacher education, programme design, multilingual

Introduction

This article considers the application of the Universal Design for Learning (UDL) Guidelines 3.0 (CAST, 2024) to an aspect of Initial Teacher Education (ITE) in England concerned with the education of multilingual pupils. The article utilises Foley et al.'s (2018) programme design alongside the principles of UDL to suggest how English as an Additional Language (EAL) pedagogy can be integrated into teacher education programmes. The purpose of the article is to meaningfully advance teacher educators' engagement with programme design concerning EAL, as this is a neglected area of policy, research, and academic debate within the ITE sector.

Context: Teacher Education in England and EAL

In England, the Department for Education (DfE, 2024a) applies the term English as an Additional Language (EAL) to those children "exposed to a language at home that is

known or believed to be other than English." As per government policy, children learning EAL are educated alongside their age-related peers to ensure equality of access to school provision (Leung et al., 2021). Hence, primary school teachers in England are conscripted as teachers of both curriculum and language, and the process of professional qualification asserts that pre-service teachers should learn to "use and evaluate distinctive teaching approaches to engage and support" children learning EAL (DfE, 2021, p. 12). However, among new teachers, there is doubt regarding the efficacy of their teacher education programmes in preparing them to do this (Foley et al., 2018; Starbuck, 2018), and across England there is considerable variability in how teachers are educated to make provision for children learning EAL (Flynn & Curdt-Christiansen, 2018). The lack of certainty regarding professional knowledge development for EAL has led Leung et al. (2021, p. 297) to argue that there is an under-specification of policy and guidance directly concerned with EAL in both schools and ITE.

By contrast, the production of policy for other aspects of teacher education programme design is prolific, ideologically informed, and highly regulated (Beckett & Nuttall, 2017; Helgetun & Menter, 2020). Due to the constraints of tight regulation, teacher education providers focus the design, content, and experiences of their programmes on those aspects that demonstrate government-policy compliance (to the neglect of aspects of professional development absent in policy, e.g., EAL) (Murtagh et al., 2023).

Where EAL is briefly mentioned in government guidance for teacher education content, it is aligned with ideas about deficits in children's readiness to learn and the impact from poverty of experience (DfE, 2024b). More broadly, the DfE (2019, p. 6) endorses the application of principles of inclusive practice through "quality first teaching" rather than specific pedagogies for the acquisition of English in the context of immersive curriculum teaching. As per DfE (2024b) reasoning, the latest guidance for teacher education, the Initial Teacher Training Early Career Framework adopts a general principles of practice approach to teaching that is adaptable to any child. This dispenses with the idea that the education of teachers needs to be concerned with developing specialised, critical knowledge concerning individual learners and the contexts of their lived reality (Burn, 2024; Shulman, 1986). Galguera (2011), Lucas et al. (2018), and Mahalingappa (2023) have argued that preparing teachers to teach on the basis of broad principles of inclusion is problematic as this neglects the specialised social, cultural, and linguistic knowledge required by teachers to educate multilingual children effectively.

Research on Preparing Teachers for EAL

Engaging with productive thinking about the design of initial teacher education programmes for the education of multilingual children is appropriate and urgent at this time, as almost one-fourth of primary school pupils in England do not speak English as their first language (DfE, 2024a). This ascending trend in multilingual pupil numbers signals an increasing likelihood that new teachers will encounter children learning EAL in their careers and, therefore, need to be suitably prepared to teach these pupils effectively. Teacher preparation for the education of multilingual pupils is not an extensively researched aspect of ITE in England (Perumal et al., 2020), and few empirical studies consider the design of programme content and experiences regarding new teachers learning about EAL (Foley et al., 2018, 2021). Indeed, Flockton and Cunningham (2021) found differences between teacher educators' and their students' perceptions of the effectiveness of EAL provision on their teacher preparation programmes and, consequently, question the capacity of teacher educators to meaningfully engage pre-service teachers with effective EAL pedagogy.

Notwithstanding this, Foley et al. (2018) suggest a series of resources that could be used to inform teacher educators' programme design for EAL. These resources include the presentation of concepts, pedagogical strategies, and best practices that introduce new teachers to EAL. They contend that pre-service teachers should be actively engaged in the practical application of and reflection on EAL strategies so that, through collaboration and dialogue with their tutors and peers, shared understanding is gained. Foley et al.'s (2018) programme design also includes language tasks and consideration of data aimed at disclosing potential barriers to learning that pupils may face, so that teachers are supported to empathise with the children learning EAL. Building upon this, Foley et al.'s (2021) study highlights the importance of responding to the diversity of pre-service teachers' linguistic backgrounds and knowledge and recognising the contextual challenges that new teachers face when learning to teach in multilingual classrooms.

Universal Design for Learning and EAL in ITE

While the basis for Foley et al.'s (2018, 2021) programme design for meaningfully engaging pre-service teachers with EAL in ITE does not explicitly mention UDL, it does align with key principles and practices of UDL (CAST, 2024). The programme design foundations are drawn from Foley et al.'s (2018) analysis of theoretical and pedagogical themes that teacher educators and student teachers participating in their study used to conceptualise the educative requirements of multilingual children. The programme design also attends to teachers perceived professional responsibilities and the specialist knowledge required for educating pupils learning EAL in mainstream classrooms. At the forefront of Foley et al.'s programme design is an investment in ethical teaching practices that highlight the need for teacher educators

and student teachers to engage in reflective thinking about understanding and meeting the needs of EAL learners through the provision of an equitable education.

Foley et al.'s programme design for educating new teachers about EAL also includes multiple means of engagement, representation, and action and expression. There is a focus on recognising and engaging with new teachers' diverse backgrounds and experiences, and critical reflection on practice. Furthermore, promoting interaction and critically reflective discussion between educators and peers fosters a community of learners who can meaningfully engage with the linguistic, social, and cultural complexities of EAL pedagogy. The researchers demonstrate a commitment to continuous improvement in their learning design for EAL as they engage in an iterative process of developing and refining programme content and experiences that are responsive to teacher educators' and pre-service teachers' feedback.

As noted, the ethical, critical, and reflective tenets of Foley et al.'s programme design for EAL in ITE illustrate an underlying universality to an equitable and inclusive education. However, in the context of EAL in ITE in England, there remains an under-specification of policy, great variability in the experiences of pre-service teachers, and a difference in the perceptions of effective provision among teacher educators and their student teachers. UDL may, therefore, offer some advantages in transferring Foley et al.'s EAL programme design to other contexts for teacher education, as it enables the underpinning tenets of the approach to be made more explicit and mobile (CAST, 2024). Setting Foley et al.'s approach within the UDL Guidelines (CAST, 2024) could serve to elucidate best practices for EAL during ITE; this has the added advantage of facilitating dissemination and collaboration through the adoption of UDL's shared language and recognisable framework for teaching higher education students.

The outline in Table 1 presents a suggested synthesis of Foley et al (2018, 2021) research with the CAST (2024) UDL guidelines so that the programme design might be made more visible and open to critical engagement and hence, transferable to other teacher education providers.

TABLE 1: *A synthesis of Foley et al.'s (2018, 2021) teacher education programme design for EAL with the CAST (2024) guidelines for UDL.*

	Engagement	***Representation***	***Action & Expression***
Access	*Welcoming Interests & Identities* -Build teacher interest with the provision of resources and authentic practical examples of EAL challenges and successes. -Connect teachers emotionally and foster their curiosity. -Recognise teachers' emotional vulnerabilities when they lack knowledge, skill, or resources for multilingual classrooms.	*Perception* -Use varied modalities for learning about EAL teaching, including visual aids, videos, and multilingual resources. -Clarify critical theoretical vocabulary (e.g., "BICS" vs "CALP" and "silent period"). -Model effective use of pupils' home languages.	*Interaction* -Provide multiple tools for teachers to express learning (e.g., lesson planning, reflective journaling, oral presentations). -Model the use of and provide assistive technologies (e.g., translation tools).
Support	*Sustaining Effort & Persistence* -Engage in collaborative learning activities and peer discussion focused on building pedagogical knowledge of EAL -Reflect upon tensions between institutional "English-only" polices and inclusive practices.	*Language & Symbols* -Highlight the practical application of theory to practice using tools like graphic organisers. -Highlight socio-cultural connections to engage teachers in the complexities of cultural and multilingual identities.	*Expression & Communication* -Promote interactive feedback through modelling pedagogical approaches to English-teaching, and simulating classroom activities that respond to diverse language needs.
Executive Function	*Emotional Capacity* -Reflect on personal, social, cultural, and linguistic awareness about language learners. -Promote empathetic and restorative approaches through deliberate practice and role-play scenarios involving EAL learners. -Promote critical agency by enabling teachers to question and adapt existing policies to better support linguistic diversity and cultural inclusion.	*Building Knowledge* -Encourage teachers to link new information to their growing knowledge of language acquisition. -Support teachers in developing and integrating cultural and linguistic awareness in their planning and practice across subjects and contexts.	*Strategy Development* -Foster criticality regarding knowledge development for EAL and inclusive practice by encouraging teachers to set and reflect on goals for their practice with EAL pupils. -Guide teachers to personalise their practice and interventions for EAL pupils' learning and engagement.

At the intersection of Engagement and Executive Function, the suggested programme design usefully attends to critically engaging with the complexities of education policy in England, where compliance and regulation shape discussion and practice in schools and ITE programmes (Murtagh et al., 2023). Doyle (2025) suggests that the

under-specification of policy for EAL in ITE influences pre-service teachers' construction of knowledge of EAL pedagogy. He argues that the EAL policy vacuum becomes filled by more powerful, regulated policy discourses for ITE that pre-service teachers find readily available to (inappropriately) apply to their growing knowledge of teaching multilingual children in mainstream classrooms, often in place of effective EAL pedagogy.

Accordingly, UDL concerns itself with learner agency, aiming to empower learners to be purposeful and reflective, adaptable and authentic, as well as strategic and action-driven (CAST, 2024). UDL seeks to honour learners' whole selves by acknowledging and engaging them through their intersecting identities and supporting active student-centred approaches to learning (O'Neill & Maguire, 2019). Similarly, Foley et al. (2021) centralise the role of agency regarding student teachers' learning. They contend that agency "emerges through the interaction of the beliefs, values, and attributes that an individual brings to bear on the possibilities for action in a particular context" (Foley et al., 2021, p.110). The practicalities of programme design considerations that cultivate a sense of partnership in learning with students and fostering awareness of themselves as learners and in learning are supported through the principal approach of "Design Options for" in the UDL Guidelines 3.0 (CAST, 2024). This principal approach facilitates welcoming learners' funds of knowledge (Moll et al., 1992) to learning opportunities, rather than focusing on a pre-determined provision. The explication of the programme design above productively highlights how teacher educators might meaningfully engage with pre-service teachers' beliefs, values, and attributes and, in a metacognitive sense, heighten their own awareness of these with respect to language teaching (Lucas et al., 2018). As such, practices concerning Engagement in Table 1 distinguish pedagogies that involve pre-service teachers' interests and identities, the growth of their professional development concerning inclusive practices and policy regarding EAL, as well as critical reflection on sociolinguistic awareness and pedagogical choices that attend to diverse and inclusive classrooms. Mahalingappa (2023) cites teacher educators' active critical engagement with student teachers' pre-existing knowledge and beliefs about teaching multilingual children as an essential feature of developing linguistically responsive teachers (see Engagement in Table 1). Inviting new teachers to build knowledge and understanding that is critically informed and aligned to effective EAL pedagogy (see Representation in Table 1) opens up possibilities for mobilisation of this knowledge in their own practice (see Action & Expression in Table 1).

The utility of UDL in teacher education is referred to by Almeqdad et al. (2023) in their meta-analysis of the effectiveness of UDL across primary, secondary, and higher education contexts. They highlight the mobilisation of UDL in teacher education

programmes for the purpose of preparing teachers to use inclusive strategies. Mobilising the above synthesis of Foley et al.'s (2018, 2021) teacher education programme design for EAL with the CAST (2024) guidelines for UDL usefully models' approach to various forms of engagement, representation and expression that pre-service teachers could then consider for children learning EAL (Layer, 2019).

Meta-cognitive aspects of learning are brought to the fore in the explicated programme design by scaffolding teachers in coming to know themselves and taking account of this in building and mobilising specific professional knowledge and skill for teaching multilingual children (Mahalingappa, 2023; Novak, 2016). To this effect, Mahalingappa (2023) recommends engaging student teachers in activities that provide opportunities for reflection on the interaction between language and power. Through the critical examination of media and texts, student teachers can reflect upon how the discourse in those texts relates to larger social-level discourses and subject positionings regarding language use in the text, as well as those discourses in their classrooms. Such consciousness-raising activity on ITE programmes fosters Critical Language Awareness – a key tenet of the specific, professional knowledge required for teaching multilingual children. Synthesis of Foley et al.'s (2018, 2021) teacher education programme design for EAL with the CAST (2024) guidelines for UDL does not solely remain at a level of general principles for inclusive practice. Rather, UDL additionally creates spaces for specific and critical pedagogical knowledge to be developed by student teachers regarding EAL.

Making Foley et al.'s programme design explicit with UDL also allows for the potential entanglement of pre-service teachers' knowledge construction of EAL with inappropriate aspects of ITE policy to be made visible (Anderson & Elms, 2022). However, the problematic mismatch in the perception of the effectiveness of teacher education programmes for EAL (Flockton & Cunningham, 2021) suggests that teacher educators may also benefit from collaborating with their student teachers in reflection and critically evaluative discussion and raising their own sociolinguistic awareness. Future research could evaluate the impact of the application of UDL principles to the programme design of the EAL component of teacher education for both teacher educators and their students. The potential challenge that UDL offers for critical engagement with teacher education discourse could also be usefully explored more widely in ITE programme design.

Conclusion

The advantage of thinking with UDL for teaching pre-service teachers regarding EAL has been to illuminate more general pedagogical approaches to inclusive practice. It also provides a means to consider the specific pedagogical knowledge, skills, and awareness teachers require to teach children learning EAL. The explanation of Foley et al (2018, 2021) teacher education programme design for EAL with the CAST (2024) guidelines

for UDL provides a robust framework for addressing the gaps in EAL pedagogy in ITE in England. UDL's emphasis on learner agency and inclusive practices enables teacher educators to effectively address the complexities of multilingual classrooms. This approach not only strengthens teacher preparation but also ensures equitable education for multilingual pupils, advancing the goals of inclusive and ethical teaching.

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The Why, What, and How of Self-regulated Learning and the Universal Design for Learning Framework

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ABSTRACT

Universal Design for Learning (UDL) has emerged as an inclusive pedagogical framework for addressing the limitations of the traditional 'one size fits all' curriculum that exists in many countries. UDL aims to promote student engagement, interaction, and learning for all students through intentional curricula that support learner variability and diversity. A core element of the UDL framework in the affective domain is self-regulation, which supports learner wellbeing, motivation, interest, retention, and progression. In this opinion piece, the connections between self-regulated learning (SRL) and the UDL approach are explored. Community views were collected during two poster sessions to explore the beliefs and understandings of UDL advocates and experts on how SRL can enhance wellbeing and engagement of staff and learners to improve access, retention, and progression. Synthesis of this feedback informs a suggested research agenda and implications for academic practice in international contexts.

Keywords

Universal Design for Learning, self-regulated learning, UDL practitioners

INTRODUCTION

Universal Design for Learning (UDL) has emerged as an inclusive pedagogical framework that seeks to address the limitations of the traditional 'one size fits all' approach to curriculum design that exists in many countries (Meyer et al., 2014). By facilitating the intentional design of curricula in ways that expect learner variability and diversity (Galvin & McParland, 2023), UDL emphasises the design of learning experiences to support student engagement, interaction, and learning, regardless of their profile (Abell et al., 2011). A core element of the UDL framework in the affective domain is self-regulated learning (SRL), as reflected in the Engagement dimension (Guideline 9; CAST, 2024). Self-regulation of learning relates to an individual's ability to plan, monitor, and reflect on their learning (Zimmerman, 2000). Now more than ever, SRL is a core component of UDL in terms of supporting wellbeing, belonging, motivation, and interest, as well as learner retention and progression (Thomas, 2012). In addition to benefits for the learner, self-regulating can also support staff in their professional learning (Milligan et al., 2014; Milligan & Littlejohn, 2016).

In this opinion piece, we position UDL alongside SRL and explore potential directions for further scholarly inquiry. In forming our recommendations, we engaged with educational professionals in two interactive poster sessions at the 2024 INCLUDE International Conference on Educational Quality at the University of Worcester, England, and the 2024 UDL International Symposium at Maynooth University, Ireland. Through these sessions, we listened to insights shared by UDL advocates and experts on their beliefs and understanding of how SRL can enhance the wellbeing and engagement of staff and improve access, retention, and progression of learners.

A summary of the discussions with the UDL community during the sessions is outlined, followed by suggestions for further research and implications for academic practice in international contexts.

Integrating UDL and SRL

UDL was initially developed in the United States, building on concepts from architecture (Universal Design) to provide a framework of principles and strategies for designing learning environments (including both digital and physical settings) that support diverse learner needs (Meyer et al., 2014). UDL has applications in many domains, including primary, secondary, and tertiary education, as well as workplace settings. Fundamentally, UDL approaches to curriculum design aim to support learners in being the best they can be, rather than being limited by aspects of the learning environments in which they find themselves. UDL aims to amplify learner agency, enabling learners to make productive

decisions about their learning and self-regulate how well they are learning and what they have achieved thus far (Blaschke et al., 2021).

The concept of SRL reflects the 'self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals ' (Zimmerman, 2000). Learners who have the skills (and choose) to self-regulate their learning set and monitor learning goals, implement effective learning strategies, establish effective work environments, and maintain a sense of self-efficacy (Handoko et al., 2019; Zimmerman & Schunk, 2011). Several concepts contained within SRL theories are captured explicitly in the UDL 2.2 Guidelines (CAST, 2018). Here, UDL provides options for self-regulation by promoting expectations and beliefs that optimise motivation (9.1), facilitate personal coping skills and strategies (9.2), and develop self-assessment and reflection (9.3). This version of the guidelines notes that UDL should support executive function, including guiding appropriate goal-setting (6.1), supporting planning and strategy development (6.2), and enhancing capacity for monitoring progress (6.4). It articulates a goal of developing expert learners who are strategic and goal-directed.

Interestingly, in the updated 3.0 UDL guidelines launched in the summer of 2024, learner agency is a key goal, with SRL incorporated into the pillar of executive functioning skills. Here, with a slight change in terminology, UDL provides options for self-regulation by recognising expectations, beliefs, and motivations (9.1), to develop awareness of self and other (9.2), and to promote individual and collective reflection (9.3). The 3.0 version also notes that UDL should set meaningful goals (6.1), anticipate and plan for challenges (6.2), organise information and resources (6.3), and enhance capacity for monitoring progress (6.4). Together, these elements can be seen as enabling learner agency and autonomy by removing the term "provide" in the 2.2 version, where practitioners had the power and ownership of the curriculum, to "design considerations" in the 3.0 version by engaging with learners in a more accessible and flexible approach through co-design (CAST, 2024). This shift in power dynamics allows learners to act as powerful agents where all voices, regardless of perceived status, are valued and invited to contribute (Restani, 2021). This showcases that when learners self-regulate and take active roles in their learning, in which they can choose how and when to engage, some of the power dynamics inherent in traditional classrooms can be alleviated.

Integrating SRL and UDL in instructional design requires a thoughtful approach that recognises the interdependence of both frameworks, and well-implemented UDL tends to yield embedded opportunities for learners to self-regulate (Brand et al., 2012; Hays &

Handler, 2020). To illustrate, four strategies for combining these approaches in the classroom are offered.

1. Create a supportive and flexible learning environment.

UDL's emphasis on multiple means of representation and engagement fosters learning environments where SRL thrives. When learners are presented with content in a variety of formats and have options to engage in ways that suit their learning preferences, they are more likely to take ownership of their learning. Instructors can provide online resources, video lectures, interactive modules, and collaborative activities, allowing students to choose how they engage with the materials.

2. Encourage goal-setting and self-reflection.

In a UDL-inspired classroom, students can be encouraged to set personal learning goals, reflecting on their strengths and areas for improvement. This supports the SRL process, as students can evaluate their progress and adjust their strategies as needed. Instructors can help facilitate this by providing regular opportunities for self-assessment and reflection, such as through journaling, reflective discussions, and peer feedback and collaboration (Lock et al., 2020).

3. Foster metacognitive skills.

Both SRL and UDL emphasise the importance of metacognition. Instructors can help students develop metacognitive skills by providing explicit instruction on how to monitor their learning, identify effective strategies, and reflect on their progress (Grant & Pérez, 2022). For example, instructors might model how to break down complex tasks into manageable steps or demonstrate how to adjust one's study habits in response to challenges by identifying barriers and identifying strategies to overcome them (Faith & Prowse, 2024).

4. Provide flexible assessment options.

UDL advocates for flexible means of expression, which supports students' varied strengths and weaknesses. Instructors can provide students with options for demonstrating their knowledge, such as through essays, presentations, videos, or creative projects. This flexibility not only allows students to showcase their learning in ways that feature their strengths, but it also supports self-regulation by giving students more control over how they demonstrate mastery.

UDL Community Feedback

The two conference poster sessions provided a forum for gathering insights from the UDL community about their perceptions of SRL and its applications. A series of stimulus questions addressed how educators who prioritise inclusive education incorporate SRL strategies in their curriculum designs and their professional learning. Engaging with the UDL community in this way provided diverse feedback and conversation with global educators around these three main stimulus questions:

1. What are the key aspects of self-regulated learning for learners and staff in education?
2. Is it important for educators to know about self-regulated learning and why?
3. Can educators who embed self-regulated learning into their practice enhance motivation, engagement, and achievement among learners?

The discussions during these sessions centred on SRL, its importance to UDL, how it can support learners and staff in terms of learner progression and retention, and how to motivate and engage staff to become more aware and confident in embedding SRL into their practices. Conference attendees were invited to add post-it notes to the posters with their thoughts so that they could be reviewed and considered for future research. Ideas continued to build from the first poster session to the second, as attendees in the second session were able to add to the preliminary findings of the first session's post-it notes. Additionally, discussions in the second session delved further into clarification of what the UDL community wanted to see added or what was important for varied contexts. Refined questions emerged through this iterative process, informing suggestions for further research.

Regarding the first stimulus question about key aspects of SRL for learners and educational staff, some comments highlighted the importance of learner agency, especially through learner autonomy, as a key contributor. Several spoke about how SRL is fostered when staff understand the process of learning, as well as their role and responsibility in supporting that process. Learner engagement was an emerging theme, as it enables motivation; however, educators should be aware of the power dynamics that can also be at play. Control shifts from the teacher to the student as learners become more self-directive.

In response to the second question of educators' knowledge of SRL, the discussion focused on where SRL fits within various contexts, including professional development, reflection, instructional design, and curriculum development. Some referred to SRL as a tool that enables more autonomous learning and minimises sole reliance on the staff. There was a perception that SRL prepares learners for the future through self-awareness and promotes deeper understandings for learners to see what does and does not work for them.

For the third question about the projected outcomes of embedding SRL into instructional practice, the importance of reflective practice was evident across many comments. The benefits of SRL-informed activities are often realised when the activities and assessments are authentic. Attendees emphasised the importance of eliminating assumptions about learning styles, as they are debunked and not validated (see, for example, Hattie & O'Leary, 2025), and advocated for integrated and flexible skill development paths within curricula. They provided examples of how educators can leverage UDL to offer choices that enhance learner confidence and foster excitement. Iterative co-design with students and using exit slips, checklists, and formative assessments were suggested as effective methods to support SRL. Although challenges such as time constraints were highlighted, passive learning attitudes were acknowledged.

The conference poster sessions provided valuable insights from the UDL community on SRL and its applications. Through engaging discussions and feedback, global educators explored key aspects of SRL for both learners and staff, emphasising the importance of learner agency and the role of educators in fostering SRL. The discussions at both conferences highlighted SRL's potential to promote autonomous learning and deeper self-awareness among learners. Additionally, the discussions underscored the benefits of embedding SRL into inclusive instructional practices, particularly through reflective and authentic activities that enhance learner motivation, engagement, and achievement. Building on these insights, the next section will outline a potential research agenda for investigating the impacts of SRL in UDL-based education on learner outcomes.

Suggested Next Steps for Research

Future research can explore a deeper and explicit integration of SRL-promoting practices through the lens of UDL at various levels, including early childhood, primary and secondary school, tertiary education, pre-service teacher education, and workplace learning. Interdisciplinary research is needed that combines expertise from education, psychology, organisational behaviour, neuroscience, and technology. Researchers may investigate how UDL-informed SRL strategies impact diverse groups of learners, including students with

disabilities, language learners, and those from differing socio-economic backgrounds. Professional development programs on UDL and SRL strategies may be examined to evaluate the impacts of the training on teacher practices and student outcomes. The role of educational technology in supporting SRL within UDL instructional designs could also be explored, with research focusing on how digital tools and online learning platforms may enhance self-regulation and personalised learning experiences. Some potential research questions that can be pursued include:

- How do educators incorporate SRL in their professional development?
- What specific teaching strategies do educators view as supporting SRL through a UDL approach?
- In what ways do educators with an awareness of UDL support SRL in their students?
- How do educators foster diverse learner engagement through SRL-promoting practices?

Various research designs can be employed to investigate this topic. Surveying educators through international inclusive education professional networks could gather a breadth of experiences and strategies used in differing geographic locations. It could also generate insights into how successful UDL and SRL initiatives could be scaled and sustained across educational settings. Surveys could include validated scales that measure SRL skills and inclusive teaching strategies, as well as perception and open-ended items, such as:

- UDL knowledge level globally and across researchers and practitioners
- Extent of commitment and understanding to UDL implementation
- SRL examples from current teaching practice, including the efficacy of the approach, challenges/barriers, and essential components
- Perceived rationale for the intentional incorporation of SRL
- Connections of SRL techniques to aspects of UDL guidelines

More localised case study methods of specific classrooms or schools implementing UDL could provide deeper inquiry into educator behaviours and decision-making processes when designing and implementing SRL-supportive, inclusive instruction and documenting their effectiveness. Multiple data sources can be utilised, including classroom observations, analysis of curriculum and student work documents, interviews, and focus groups. An action research approach could also provide insights through systematic implementation, reflection, and iterative improvement of UDL principles and SRL strategies in one's teaching. Such an inquiry could delve into educator experiences with SRL in their

professional learning, how SRL is supported in their classrooms, and continuous improvement efforts.

Experimental designs could control for additional variables to focus on differences between instructional implementations with and without intentional incorporation of SRL prompts. The longer-term impacts of SRL strategies in UDL environments could be identified through longitudinal studies that track student performance over multiple semesters or academic years. Analysing the data over time may illuminate trends and changes in academic success and student behaviour.

Conclusion

In an era of increasing learner variability and diversity, as well as the complexities and changing priorities within higher education (Galvin, 2024), it is more important than ever to create learning environments that are flexible, inclusive, and focus on learner agency. SRL and UDL offer complementary frameworks to help educators and learners navigate these challenges and changing priorities. By fostering self-regulation and providing multiple pathways to engagement, representation, and expression, learners can take ownership of their learning and have more equitable opportunities to achieve academic success. Embracing these frameworks as intertwined strategies will likely support instructional designs that attend to the needs of the whole learner and equip learners with the ability to develop their learning expertise. Enabling instructional staff to be better equipped and supported with the necessary tools to embed these frameworks across their practice will likely increase SRL as a key outcome of learning, and one that UDL design fosters. There is evidence that educators who self-regulate are more likely to undertake UDL practices (Griful-Freixinet et al., 2020). Future scholarly efforts can delve more deeply into SRL-inclusive learning design considerations to ensure that learners have the skills to take advantage of the autonomy that UDL-informed designs afford.

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Inclusion in Harmony: Designing Transitions that Work for All

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ABSTRACT

Recognising that career planning now extends beyond the notion of a single, lifelong job for everyone, including learners with disabilities (Gilson et al., 2022), and that merely placing individuals with disabilities in employment is inadequate, there is a distinct imperative for professionals to re-evaluate their practices and develop their capacity for innovative individual and collaborative work methods to foster more sustainable inclusion (Wehman et al., 2017). The changing societal landscape, highlighted by the UN Sustainable Development Goals (SDGs) – notably SDG 04 on Quality Education and SDG 08 on Equitable Work – necessitates a re-examination of inclusive transition processes. This requires a renewed emphasis on career guidance and transition planning, particularly for currently underserved learners, such as those with intellectual disabilities (ID) and intellectual and developmental disabilities (IDD) (Banks, Aston, & Shevlin, 2022), learners who are blind and visually impaired (McCarthy & Shevlin, 2017), and Deaf learners (Phillippe & Auvenshine, 2019). To address this, and drawing upon the principles of Universal Design (UD) (Bianco, 2020; Burgstahler, 2015) and Universal Design for Learning (UDL) (Rose & Meyer, 2006; CAST, 2018), this paper advocates for a fundamental shift in professional practice for all professionals involved in supporting transition planning. Each professional role must evolve beyond traditional, isolated approaches, which can limit perspectives, towards embracing more collaborative methodologies (Talapatra, et al., 2019) in transition planning for all learners with disabilities. Such a transformation demands a shared understanding and appreciation of the opportunities and challenges faced by learners, including the crucial role of digital literacy in accessing information and opportunities (Edyburn, 2010), alongside a clearer recognition of the vital role each professional plays in this process (D'Amour et al., 2005). Ultimately, this necessitates a collaborative evolution that will cultivate more harmonious and authentic learning and transition experiences for our learners, leading to more enduring and effective inclusion.

Keywords

Inclusive Education, UD, UDL, Transitions, Guidance, Digital Transitions, SDG04, SDG08

Increasing Opportunities for Learners with ID and IDD

Learners with disabilities including those with ID and IDD are gaining access to an increasing number of opportunities across education and employment as a consequence of evolving policies, inclusive practices, and partnerships with employers (Kubiak et al. 2021, Quirke & McCarthy, 2018). These changes aim to support independent living, promote social inclusion, and expand career options for learners and consequently offers more choice.

Therefore the preparation of learners for transition is evolving; learning and life choices continue to be influenced by technologies, globalisation, and developments in inclusive education (Mazurek & Winzer, 2024; Scanlon & Doyle, 2021) . Despite ongoing efforts to promote inclusion, many learners continue to lack adequate access to career guidance information (Quirke & McGuckin, 2024; Scanlon & Doyle, 2021) and are often met with low expectations, as attention is frequently placed on their disabilities rather than their strengths and potential (Quirke, 2024; McCarthy & Shevlin, 2017). Learners with intellectual disabilities (ID) and intellectual and developmental disabilities (IDD) are particularly affected, continuing to face high rates of unemployment and underemployment, even though many express a clear desire to work (DuBois, Bradley, & Isvan, 2024).

Effective transition planning and guidance require a deeper understanding of what learners with disabilities need to know in order to make informed decisions, as well as how they should engage with the professionals who support them—such as teachers, occupational therapists, and career guidance counsellors (Banks, Aston & Shevlin, 2022; Abbott & Provident, 2016). Each of these professionals holds a vital role in promoting inclusive education and facilitating successful transitions, both through their specific expertise and through collaborative, interdisciplinary approaches (Davis & Lee, 2023; Banks, Aston & Shevlin, 2022; Abbott & Provident, 2016).

Furthermore, practitioners need to move beyond simply placing individuals with disabilities in jobs. The traditional focus of transitionary planning, once centered on securing a job for life, has evolved for everyone, including learners with disabilities (Gilson et al., 2022). Current practice should adopt a more contemporary approach that prioritises planning for ongoing career development and lifelong learning, encompassing "jobs that facilitate their personal development over time" (De Vos, Van der Heijden, & Akkermans, 2020, p. 6).

This evolving focus necessitates a re-evaluation of transition planning for individuals with disabilities to guarantee its meaningfulness (Cavendish et al., 2019), a reassessment of the potential of digital learning within this context, and a renewed emphasis on robust interprofessional collaborations where each discipline contributes its specialised knowledge to support the disabled learner as they make informed decisions. Contemporary planning requires a democratic methodology wherein all professionals cultivate collaborative working relationships with the learner,

their advocates, and their peers (Quirke, 2024; Talapatra, et al., 2019). There is an increasing imperative to reconsider underlying philosophical perspectives and practical approaches concerning inclusion and transition for all engaged in transitionary planning. This consideration, if using a shared framework such as UDL, would both realign and enable each professional to contribute harmoniously, ultimately empowering learners to plan for their futures whilst benefiting fully from collective expertise.

Designing for Inclusion - UD and UDL

Universal Design (UD) and Universal Design for Learning (UDL) are increasingly shaping how inclusion is understood and embedded within learning environments (Quirke, McGuckin & McCarthy, 2023; Ewe & Galvin, 2023). UD, which originated in architecture, emphasises the creation of environments that accommodate the widest possible range of users (Mace, 1997). Its seven guiding principles—such as equitable use, flexibility, and perceptible information—offer a robust foundation for designing spaces and systems that are inherently inclusive, while still allowing for personalised support where needed. Building on UD, UDL applies these inclusive design principles specifically to education (Burgstahler, 2015). Developed by CAST, UDL focuses on three key areas: engagement and motivation, curriculum and learning design, and assessment (CAST, 2024). It places the learner at the centre of the process, promoting a sense of belonging, meaningful participation, and the achievement of personal goals. As a flexible and values-driven framework, UDL is particularly relevant for professionals working in education, health, and transition to employment contexts (Quirke, 2024). It supports autonomy and long-term inclusion and, notably, is the only framework currently aligned with the Sustainable Development Goals (SDGs), highlighting its importance in promoting sustainable and socially just practice (Galvin, 2024) in both education and employment.

Consequently these frameworks offer valuable guidance for professionals in occupational therapy, psychology, and career guidance or guidance counselling. By rooting inclusion in design thinking, UD and UDL mark a shift away from reactive or medical-model approaches that seek to “fix” the individual. Instead, they promote proactive planning for diversity from the outset, ensuring that systems and experiences are accessible and meaningful for all. This shift calls on professionals to critically examine current methods and adopt a more intentional, learner-centred approach (Gurnet & Fovet, 2024; Quirke, 2024) within the context of their professional theories and practice.

Changing Policy, Changing Practice

A key example of evolving transitions lies in how educational advancements have reshaped conventional learning experiences and methodologies, particularly for learners with intellectual disabilities (ID) and intellectual and developmental disabilities (IDD) (Camedda, Banks & Ringwood, 2024). Education approaches having been guided by the Salamanca Statement which was agreed by representatives of 92 governments and 25 international organisations in June 1994 (UNESCO 1994) with further direction from the UNCRPD (UN, 2006) and UNESCO (2020), and also having to consider the UN SDG's (UN, 2015), have had to react and respond, resulting in new options across education.

One notable outcome is that learners with intellectual disabilities (ID) and intellectual and developmental disabilities (IDD) can now access third-level education and experience university life in Ireland, aligning with the expectations of their peers (Higher Education Authority, 2023). These educational advancements aim to align the learner experience with the objectives outlined in the Salamanca Statement and subsequent national policies and legislation. Although positive, these changes have presented challenges for professionals involved in transition planning. These challenges include the need for professionals to: 1) acquire updated knowledge of the expanding range of available options; 2) consider and develop new expertise in digital learning to support contemporary transition planning and guidance; and 3) gain a clearer understanding of how their roles need to evolve and integrate across all disciplines involved in transition planning and guidance.

New Options

Transition planning can commence as soon as a person engages in learning, in terms of their engagement with curriculum and pedagogical engagement that lends to aspirations and hopes for the future. Emerging opportunities in Ireland, the EU, and other regions, include higher education programmes (Aston et al., 2022; De Souza et al., 2024), increased access to vocational and further education training programmes (Hanson, Robinson, & Codina, 2022), supported apprenticeships, and supported employment initiatives (Riesen & Morgan, 2018). Ireland is now paving the way for many programmes across many different universities to address the need for opportunities for learners with ID (Higher Education Authority, 2023), to realise ambition and move from a past where they were "...excluded from many areas of life, often segregated in specialised systems, including special schools, sheltered work environments, and congregate living facilities." (Plaute, 2022, p. III). While it is a new but developing idea to offer opportunities for learners with ID and IDD in tertiary level education, it promises improved outcomes in relation to employment and social inclusion. It also changes the expectations for this cohort of learners and most importantly, other vulnerable learners while also highlighting the need to develop new learning with a new emphasis on digital skills (Chadwick et al., 2022).

Digital Learning

Digital transitions are also a factor to be considered with particular emphasis placed on this during the covid pandemic (Chadwick et al., 2022; Chadwick et al., 2023). The sudden change in educational and work practices at this time heavily relied on educators, learners and workers having access to digital technology and digital skills to facilitate the ongoing engagement in learning and work that was expected to continue during a difficult period in time for everyone (Chadwick et al., 2023; Chadwick et al., 2022). This shift to digital and hybrid working across the education and employment sector brought significant attention to the barriers faced by learners with a disability including those with IDD with many not having access to digital technology and or armed with the skills or resources to continue alongside their peers (Bond, 2021; Chadwick et al., 2022; Chadwick et al., 2023; Gobec et al., 2022).

Much work has been done in Ireland and across Europe to promote the development of digital literacy and competency within schools, with Ireland's Digital Strategy for Schools 2017, aiming to support schools and learners for the digital world (Krasavina, 2024), and Europe offering tools such as the SELFIE Self-Assessment Tool to support schools with assessing their knowledge and experience with digital technology (Misheva, 2024). Digital competency frameworks, such as DigComp 2.2 have also been developed with the aim of supporting learners of different ages throughout the lifespan (Vuorikari, 2022; Vuorikari & Punie, 2019). Although many structures have been put in place to support the development of digital literacy and competency, there remain questions as to how transition pathways can be supported for learners with a disability hoping to access higher education and employment pathways.

Professional Roles; Single Disciplinary and Multidisciplinary Responsibility

As the post-secondary education and employment landscape changes, so too must the approaches of those professionals engaged with learners (Banks, Aston & Shevlin, 2022). This is not necessarily stating that everything must change - as there must be a regard for the expertise that is and has been employed across the sector (Florian, 2019). While traditional approaches, such as planning for a job for life approaches, may jar with more contemporary thinking, the knowledge in relation to overcoming barriers and mindsets is not to be underestimated. However each professional needs to consider and appreciate their thinking and practice in relation to inclusion; the teacher needs to review pedagogy, the OT their approaches and the guidance counsellor their engagement with learners. Rather than move to adopt a "one size fits all" approach to inclusion, each needs to take responsibility for reframing their approach with regard to inclusion, perhaps by adopting just one small change (Behling & Tobin, 2018). Tobin (2022) promoted the plus one approach, prompting educators to use UDL and adopt just one change in their approach to include and build from that, all professionals can consider how they each will reframe their approaches, just as guidance counsellors can adopt a UD for

Guidance Approach (UDG) (Quirke, 2024). Moreover there is a responsibility to continue to review and rethink inclusive approaches, adopting a UDL attitude, as a more reflexive and sustainable approach to inclusion (Quirke, McGuckin, & McCarthy, 2023). While each professional realigns their inclusive practice with the needs of learners today, a consideration as to how each will consider the other's engagement is also important as this will allow them to work with the learner in a harmonious way.

In conclusion, this paper proposes that by drawing upon the philosophy and practice of Universal Design (UD) (Burgstahler, 2015) and Universal Design for Learning (UDL) (CAST, 2018), each professional role needs to adapt beyond traditional, siloed approaches and embrace more collaborative methodologies when planning transitions for learners with disabilities (Curro, Shooman, & Foo, 2022). This shift necessitates a shared understanding and appreciation of the current opportunities and challenges faced by disabled learners, alongside a recognition of each professional's contribution to the process (Frazier et al., 2020). Only through this harmonised and authentic engagement with our learners can learning and transitions truly progress. Ultimately, the learner is the most knowledgeable about their own experiences of inclusion and exclusion. When inclusion is the central focus of the transition process, all stakeholders, including the learner, actively drive the inclusion agenda forward.

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