Inclusive by Design

Case Studies @ IADT in
Universal Design for Learning
Funded through Strand 1, Path 4

Institute of
Art, Design +
Technology
Dún Laoghaire

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Forward
Dara Ryder

I often get asked to write forwards like these, but I rarely get excited about doing it. This volume however is different.

I could yak on for pages with technical definitions of universal design (UD) and universal design for learning (UDL) that would of course be entirely correct but leave you cold as a tenting holiday in the arctic. Ultimately, what both frameworks are about in education are allowing learners to bring more of themselves into classroom and bring more of their talent and personality to bear in their learning. When the vast complexity of our learners lives and identities clash with the huge bureaucracies of higher education institutions, with their traditionally rigid structures and inflexible cultures, many learners must jump an awful lot of hurdles, just to get to the starting line. Some fall needlessly before they get there, others along the way.

UD and UDL mindsets enable us to reduce this kind of unproductive struggle for our learners and allow them more freely and openly engage in the truly glorious struggle of grappling with new ideas and skills. And regardless of your discipline, your background, or your ability profile, that is what higher education should be about.

This volume is a great testament to the magical things that can happen when you give academics and professional staff the permission and space to reflect on the barriers to learning their learners experience, and how their practice can be shaped to empower them.

The result? More flexibility, more accessibility, more voice and more choice for our students. Bravo!

Dara Ryder, CEO of AHEAD

Introduction
Rebecca Roper

This collection of Universal Design for Learning (UDL) case studies represents a vibrant cross-section of innovative educational practices designed to enhance accessibility and inclusivity across various learning environments in Dún Laoghaire Institute of Art, Design and Technology (IADT). Through the dedicated efforts of educators and researchers who have applied UDL principles, this volume showcases strategies that significantly improve student engagement and success.

Each case study in this compilation offers a detailed account of the challenges, methodologies, and outcomes associated with implementing UDL. From improving the academic experience of students with ADHD to redefining the delivery of complex subjects like statistics, the practical applications illustrated here highlight how UDL can be effectively utilised to meet the diverse needs of all learners.

As you explore these case studies, you will gain insights into the transformative potential of UDL within the unique educational settings here in IADT. You can also access the IADT LibGuide, with great resources for Universal Design here: **https://iadt.libguides.com/UDLguide**. These narratives not only demonstrate the impact of innovative teaching strategies but also serve as a practical guide for educators and researchers looking to implement similar approaches in their own contexts.

This introduction sets the stage for a deeper understanding of how UDL principles contribute to educational equity and excellence. I hope that these examples inspire you to consider how such inclusive practices can be adapted and integrated into your teaching to benefit every student.

This project would not be possible without Path 4 Funding. With thanks to Dara Ryder from AHEAD, Denise McMorrow, Director of Student Experience IADT for her support, Mary Murphy, Fiona Logan from the Library in IADT and the UD Champions: Emma Balfe, Louise Glynn, Dr. Christine Horn, Louisa Keogh, and Marian McDonnell with Jennifer Gallagher, whose inspirational work is captured here.

Rebecca Roper, Head of Teaching and Learning, IADT
Teaching and Learning Expert, HEA
Project Lead and Editor - UD Champions @IADT Inclusive by Design

Universal Design Champions Case Studies

Case Study 1
Marian McDonnell

Case Study 2
Louise Glynn

Case Study 3
Emma Balfe

Case Study 4
Louisa Keogh

Case Study 5
Dr. Christine Horn

Case Study 1
Marian McDonnell

Title

JournalMate: designing an academic reading tool for third-level students with ADHD using Universal design principles.

Area

This project affects all third level students and researchers as it addressed the question “How can academic journal websites be made more user-friendly to third level students with ADHD, through customization”? The results suggest that the project impacts all students. This question was answered by applying Universal Design principles to a reading tool prototype. In the user interviews, participants discussed a number of strategies and tactics they have adopted to be able to complete their academic reading. These tactics included reformatting the document by changing the font size and line spacing, colour coding, using visuals, note-taking and using alternative methods of consuming information, for example, through listening and watching videos. These strategies helped to inform the design and focus on the features that mattered most to the target users, as per the user-centred design process.

The results indicate that JournalMate provides improved usability, ease of use and user satisfaction. This case study warrants further investigation. Next steps would be to carry out further testing with a wider range of neurotypical participants.

Keywords/theme

UD, assistive tech, ADHD, Accessibility User centered design, academic reading, student empowerment, engagement.

Who are the learners/ sector being targeted in this project?

All third level students reading academic journals.

Solution classification

Research states that college students with ADHD experience less academic success and greater psychological and emotional difficulties than other students. Reading is a struggle for adults and children with ADHD. Both adults and children with ADHD are likely to become disinterested or distracted, miss details and lose track of where they are on the page. Adults with ADHD obtained significantly worse results than the neurotypical adults on reading speed and responses to literal questions. Additionally, Reaser, Prevatt, Petscher, & Proctor (2007) found that college students with ADHD detailed greater levels of difficulty than their neurotypical peers in outlining, note taking and summarising information.

Interestingly, Lewandowski, Gathje, Lovett & Gordon (2013) found that students with ADHD performed similarly to neurotypical students when it comes to timed reading tests, but they think they perform badly and experience more anxiety than other students without ADHD. This indicates lower self-perception, which leaves students at a disadvantage and with an expectation that they will perform badly before any task is carried out.

There have been limited qualitative studies, providing in-depth insight into individuals' with ADHD's own experience, particularly in a third-level educational setting.

It is known that many adults with ADHD learn to depend on external resources, such as apps to help support their organisational skills. If students with ADHD are dependent on resources, it is imperative that these resources are designed with the user at the core of the design process.

Methodology

This research project was conducted in three phases, using a User Centred design (UCD) approach.

1. The initial research phases explored cognitive processing difficulties related to reading habits and user needs that are associated with ADHD.
2. A series of interviews with 3 subject matter experts and 8 students with ADHD aimed to identify pain points and problems hindering users from carrying out academic reading efficiently and confidently.
3. Phase two involved ideating solutions based on data collected in the first phase and applying universal design principles while focusing on developing an electronic reading tool.
4. After the ideation activity, the resulting prototyped solution was evaluated by 10 users.
5. The data gathered during this evaluation provides insight into the performance of the application and will aid in any subsequent design iteration.
6. The output of the study is an accessible academic prototype reading tool for third-level students with ADHD, using a user-centred design process.

The solution

Prototype academic reading tool for third-level students for further testing.

Academic publication with M.Sc. in UX student Jennifer Gallagher at *IOS Press Ebooks - JournalMate: An Accessible Academic Reading Tool for Third-Level Students with ADHD*
(See QR Code or find the linked document here)

Conference presentation at iHCI Nov 17th 2023 in Dundalk IT. Presentation by Jennifer Gallagher at the 17th International Conference of the Association for the Advancement of Assistive Technology in Europe (AAATE) - Paris, Aug 2023.

Challenges

Due to the ethical challenges of the case study, participant recruitment had to be completed via personal networks and social media. This resulted in the sample size being relatively small, so it may not be generalisable to all students with ADHD. Further research with a larger sample size is needed.

Statistically, more males are diagnosed with ADHD than females, therefore the inclusion of more males with ADHD in the interview stage of the research may have offered different perspectives. Additionally, the majority of participants had already graduated from their studies. It would be useful to test the prototypes with more students who are currently attending a third-level institution and potentially conducting a longitudinal study with these students.

Strengths and potential

This case study contributes to existing but limited research on ADHD and third-level education, specifically in the context of academic reading. The strength of this case study is the exploration of the difficulties students with ADHD experience with the process of academic reading and writing. The research data in this study was from Ireland specifically. Although this may be considered a limitation, it provides a useful baseline for more localised research in the area of academic reading in third-level education in Ireland as a student with ADHD.

As the design process is iterative, the JournalMate prototype can benefit from further design changes in accordance with the user feedback. The functionality of JournalMate can continue to be expanded and tested with a wider cohort of users, as mentioned in the limitations of the study. For example, the prototypes could be tested with students with dyslexia, to gain an insight into the impact of customisation on their academic reading experience.

This study focused on measuring the usability of the prototype. Future testing could measure memory retention or concentration. Problems with memory retention and concentration are prevalent amongst individuals with ADHD, therefore these topics warrant further research.

Avenues for further research include conducting a more longitudinal study, for example using a diary study. A diary study would provide more in depth qualitative data on habits and usage scenarios.

Diary studies can answer questions about what capacity users have to engage with a product and the workflows for completing longer-term tasks.

Key outcomes

- Data was collected from students with ADHD about their struggles with reading at third level. This will be published at a future date.
- Prototype academic reading tool for third-level students for further testing
- Academic publication at *IOS Press Ebooks - JournalMate: An Accessible Academic Reading Tool for Third-Level Students with ADHD (See QR Code or find the linked document here)*
- Conference presentation at iHCI Nov 17th 2023 in Dundalk IT.

Critical success factors/Impact of project

The 4 key outcomes listed above highlight the case study's critical success factors and its impact.

The participants were asked a number of questions to delve deeper into their thoughts on the Journal Mate prototype. Participants were asked the following questions:

1. Did you have any thoughts on the prototype?
2. How did you feel when using this prototype?
3. Was there anything you were expecting to see that wasn't there?

One participant remarked that JournalMate "just would have made things a lot easier".

Another participant discussed their finite ability to focus, "when you only have a certain amount of ability to focus or a certain amount of brain power, reading the whole thing, finding out it's not relevant is just like, well, I'm never doing that again. And then you don't read articles for like a month and all of your essays are a pain."

This illustrates the demotivating nature of academic reading as a student. In addition to the demotivation, it encapsulates the time overload. One participant remarked, "I would have loved to have had that in college, it just would have made things a lot easier."

Another participant mentioned how they felt more in control, "I felt far more in control and easier to access than ordinary papers. I could use this to create ease of information gathering for college projects."

The reason customisation is popular is because of its' ability to restore power and control to the user, by allowing them to choose options and set preferences within a system. Likewise, the ease of use was specifically mentioned by four participants.

One stated, "It was clean and easy to use. It wasn't really distracting."

Distraction was mentioned in almost all of the user interviews that were conducted in the research phase of the project.

Therefore, keeping the design of JournalMate as clutter-free as possible was an important aspect of the design process.

How did the training you received on the project your subsequent intervention impact on you? What are your main takeaways?

The training opened my eyes to how inaccessible a lot of our educational resources are.

The main takeaway for me was to apply Universal design principles, when preparing educational materials for students.

Please supply links to the intervention/ revision of content created :

See 2 videos for demo of prototype *via the QR code or find the linked document here.*

- Start with B Prototype Home Screen Flow.
- Then watch B Prototype Article Flow.

UD Champion – name and contact details

Marian McDonnell (marian.mcdonnell@iadt.ie) with M.Sc. in UX graduate Jennifer Gallagher (jengallagher94@gmail.com).

References

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(See QR Code or find the linked document here)

Case Study 2
Louise Glynn

Title

Co-redesign of a 1st-year cross-faculty module with UDL principles and the Students' Voice.

Area

This cross-faculty "Connect module" impacts all 1st-year students in the Faculty of Film, Art & Creative Technologies (c400 students). Students from 2nd and 3rd years who took iterations of this module were also surveyed for their opinions on the co-redesign. Ten students were recruited (One from each programme in the faculty) to partake in a focus group and undertake eLearning in various themes including UDL.

Keywords/theme

UDL, EDI (Equality Diversity & Inclusion), Digital Transformation in Teaching & Learning, Education for Sustainability, Employability, Academic Integrity. Student Empowerment and Engagement.

Who are the learners/ sector being targeted in this project?

Undergraduate Students.

Solution classification

Students were surveyed on their experience after they completed the Connect module in 2022/23. Based on the feedback, I could see there was room for improvement in the delivery of this module, which was delivered in an asynchronous format via IADT's Virtual Learning Environment, Blackboard.

The aim was to improve the student experience of this module; the aims of this module are:

- Support the transition to level 8 study.
- Give students an overview of their chosen discipline.
- Enable students to collaborate with and gain knowledge of the other disciplines in the Faculty and their place within it.
- Enhance students' Critical and Creative Thinking and their communication skills.
- Focus on the First Year Experience and help students to get to know each other and the Institute.

Methodology

1. Surveyed the students from the 2022/23 cohort and analysed the results.
2. Recruited ten students, one from each programme in the faculty.
3. Got the recruited students to participate in eLearning courses for Digital Badges and provide feedback via Slido and Trello over summer 2023.
4. Got students to create reusable learning objects to meet the 2nd and 3rd aims of the module: “give students an overview of their chosen discipline”….”gain knowledge of the other disciplines in the Faculty and their place within it”.
5. Included an Introduction the FFACT Connect Module during 1st year Induction week.
6. Exported the Slido results of student feedback as excel spreadsheets and imported them into Miro to create Affinity Diagrams used for the planning of presentations with the student voice in mind. New features of Miro such as “clusterise” and “summarise” helped greatly with the UDL presentation compilation.
7. Invited IADT N-TUTORR (National Technological University Transformation for Resilience and Recovery) student champions to give feedback on my presentations and speak at the sessions.
8. Students of this iteration of the module will be surveyed after the completion to see whether the interventions effect better results in relation to the module aims being met.

The solution

Produced a series of presentations with the student voice on the topics of Academic Integrity, Universal Design for Learning, Employability and Sustainability.

The Affinity Diagrams on the topics could also be useful for staff training in the areas.

Challenges

Before:

- I knew via the survey results that some students felt that some module aims were met more than others.
- Some students attend other core classes during the scheduled time for this module.
- Students might not watch the recordings.
- Not all students use Blackboard Hub.
- Not all students read their emails.

During:

- It was difficult to get the recruited focus group students in the same place at the same time.
- Some students weren’t allocated to the module in the VLE which results in confusion for the students.

- Only a quarter of the students attend the live sessions.
- Students complain that they find Blackboard Hub confusing.
- Students get confused about the two modules I co-ordinate.
- The Epigeum Quiz on Academic Integrity had an 80% mark to pass (which is extremely high).
- There were UDL issues with the way that the Quiz was presented to students, it wasn't tested enough by IADT before giving to students.

Strengths and potential

The inclusion of the FFACT Connect module is a unique opportunity for 1st year students to experience topics and ideas that they may not experience in their core classes. It is great to have a space for sessions on EDI also especially in the current climate. This module has potential to have a great impact since it is being delivered to a massive cohort of students. It's already impacted a small cohort of the recruited students to allow them to increase their knowledge and obtain Digital Badges. A large group of students who attended the module have now obtained Digital Badges in Academic Integrity from Epigeum. The students get to meet other colleagues such as Head of Teaching & Learning for the Academic Integrity session, Emma Balfe in the EDI office runs weekly sessions on EDI, Alex Mc Donald our Disability Officer did a session on Disability Awareness and Colm Olwill our Assistive Technologist did a session on Productivity Tools and Assistive Technology, Carly Salter our Student Counsellor did a session on Minding your mental health, Dawn O'Connor our Careers officer did a session on Employability, Loreto Meagher did a session on Neurodiversity, Pat McAuliffe did a session on the Library and I did a session on Sustainability.

The student voice has been included in every step.

The expansion of this module to all 1st year students may be considered in light of these outcomes. Perhaps those students could be surveyed about the content of this module and whether they think it would be a good idea to have it included in their faculty.

Key outcomes

- Improved Content
- Improved Assessment
- Improved Delivery
- Improved Engagement/Feedback will be evaluated pending next iteration.

Critical success factors/Impact of project

C400 students impacted. Students learning about subject areas that are important for them as students and human beings!

How did the training you received on the project and your subsequent intervention impact on you? What are your main takeaways?

It raised my awareness of the different ways I can improve my modules using the student voice. I don't just have to survey students, I can engage students in different ways. I reached out to N-TUTORR fellowship and Student Champions to help me improve the content before delivery. For example, I got the IADT Student Champion for Academic Integrity to input to that session. I also got the Student Champion for UDL to review my PowerPoint presentation for UDL. The Student Champion for Employability will present a new session on using LinkedIn as part of the 24/25 roll out of the initiative. By utilising the principles of UDL, engagement and accessibility are positively impacted.

Please link any assets you would like to share:

FFACT Connect Schedule.docx
Universal Design.pptx
Academic Integrity.pptx
(See QR Code or find the linked documents here)

UD Champion – name and contact details

Louise Glynn (louise.glynn@iadt.ie)

Case Study 3
Emma Balfe

Title

Designing a Staff Mental Health Policy through the lens of Universal Design

Area

This project impacts all staff within the Institute of Art, Design & Technology, Dún Laoghaire. Whilst primarily an administrative project, the implications of this intervention are far-reaching. This project impacts administrative functions, all staff, and their mental health.

Keywords/theme

Staff empowerment / mental health

Who are the learners/ sector being targeted in this project?

Staff in IADT

Solution classification

This project aimed to enhance the accessibility of IADT's new Staff Mental Health Policy. Whilst no Staff Mental Health Policy existed before the onset of this project, a draft template was in circulation. This draft template was used as the basis for this project. In line with the Institute's commitments to See Change, any policy development in the area of mental health needed to be advanced with accessibility at the fore. This presented the need for such an intervention.

Methodology

1. Complete the IADT UDL training online.
   (See QR Code or find the linked document here)
2. Review current draft policy and identify areas in need of expansion and improvement.
3. Review current policies in IADT to identify existing policies are in alignment with universal design best practice guidance.
4. Review literature and sectoral best-practice guidance in regards to universal design, universal design for learning, whole-institution approaches to culture change, mental health policy development and advancing mental health in HEI settings.
5. Develop Staff Mental Health policy in full.
6. Identify jargon-heavy language that could be excluded without diminishing the content of the policy.
7. Develop Staff Mental Health Policy – Plain English version.
8. Complete accessibility checks on Staff Mental Health Policy – Plain English version to ensure highest standard of accessibility.

9. Identify aspects of Staff Mental Health Policy – Plain English version which presented opportunities for further accessibility enhancement.
10. Set out plan for enacting these additional enhancements.

The solution

The development of IADT's new Staff Mental Health Policy attempted to place accessibility at the fore. In line with IADT's commitment to advancing and destigmatizing mental health across the Institute, this policy aimed to fulfil some of the Institute's commitment to the See Change Workplace Pledge. See Change is a national organisation dedicated to ending mental health stigma. IADT has committed to the Workplace Pledge to tackle mental health stigma in our community. This Workplace Pledge includes the successful fulfilment of an action plan. Action 2 of this plan refers to policy development. One stipulation of this action is that policy development must include 'Decide[ing] how the policy will be made accessible' (See Change, 2018).

With this in mind, the development of the Staff Mental Health Policy included the development of two assets; the original policy in full, and the plain English version. The plain English version of the policy is a condensed version of the original, which intentionally excludes legal jargon. The plain English version promotes the third principle of universal design – Simple and Intuitive Use. This version aims to cater to a wide range of literacy and language skills, organizes information in relation to importance, and eliminates unnecessary complexity.

The result is a document which is 9 pages in total (8 pages less than the original), inclusive of a contents page, appendices, references, and supports. The policy content is easily navigated and is contained across 3 pages.

Challenges

One issue which was faced during this project was that this policy had not existed in IADT prior to the intervention. While this provided an exciting opportunity to develop a universal design project from the ground up, it also meant that there was no baseline to benchmark progress against. However, the learning gained from completing the Path 4 Universal Design training online meant that the project lead could integrate universal design principles from the outset in line with sectoral best practice guidance.

Perhaps the most difficult challenge faced during this intervention, however, was the reliance on bureaucratic administrative processes which were slow. Policy development exists within bureaucratic processes within HEIs, and rely on agents external to those working on policy development to review, pass and enact the policy in question. While these processes are legitimate and necessary, they were frustrating to engage with due to the time restrictions imposed by this project. Therefore, while further interventions were planned, they were not achieved within this timeframe.

Strengths and potential

One of the key strengths of this project is that it is, within the project lead's knowledge, the first staff policy in IADT that has been developed in line with universal design principles and guidelines. No such policy existed within the Institute prior to this intervention which offered a condensed, plain English version. As the nature of this policy is sensitive, the project lead was mindful of the fact that staff who may be engaging with the policy could be experiencing mental health challenges or periods of immense distress. Adhering to the universal design principle of *Simple and Intuitive Use* is therefore a means to allay further distress caused to the intended user, who may be seeking support through this policy. The information included in this plain English version seeks to be assistive, helpful and empathetic towards its users.

Furthermore, this intervention highlighted how easily universal design principles could be implemented into all policies within the Institute. This approach could certainly be replicated in all future areas of policy development or revision.

One such area of future potential of this project that is currently underway and was delayed due to bureaucratic processes, is the translation of this policy in to a video version. This intervention would adhere to the universal design principle of *Flexibility in Use*, which promotes choice in methods of use. This video, therefore, would provide the same information as the plain English version, whilst also providing intended users with the choice in how they wish to access this important information.

Key outcomes

1. Positively impactful to all staff within IADT.
2. Advance the Institute's commitment to de-stigmatization of mental health.
3. Development of plain English version of policy has established precedence for further policy development and revision to align with universal design principles and guidelines.

Critical success factors/Impact of project

The most significant outcome of this intervention is in itself the plain English policy that was developed. As international research has found, one in eight people live with a 'mental disorder' (Institute of Health Metrics & Evaluation, 2019), whilst one in four adults will experience at least one diagnosable mental health problem in any given year (NHS, 2023). Many of these people will be employed during these periods. The development of a Staff Mental Health Policy in plain English, therefore, may likely directly impact one quarter of IADT staff, and potentially impact many other colleagues and friends who support those in distress. This plain English version of the policy aims to mitigate any potential barriers that staff who are experiencing mental health challenges or periods of distress may face when accessing support services.

Research shows that during a depressive episode, for example, an individual's cognitive processing speed – or ability to take in information quickly and efficiently, is impaired (Zaremba, D. et al., 2019). In fact, it is estimated that 25–70% of the patients will suffer from cognitive deficits from mental ill-health (Hammar, Å., Ronold, E. H., & Rekkedal, G. Å., 2022). Navigating complex policies, therefore, may prove to be a substantial barrier to those experiencing mental health distress. The universal design principle of Simple and Intuitive Use, which was applied to this intervention, attempts to allay these barriers by requiring a lesser mental load.

How did the training you received on the project and your subsequent intervention impact on you? What are your main takeaways?

The training that I undertook, as well as the subsequent intervention that I made, had extremely positive impacts on me, both professionally and personally. As someone who is relatively new to the field of policy development within a HEI setting, prior to this intervention I felt that policy development rarely yielded tangible and impactful results on the intended-users of policies. Despite having a strong orientation towards social justice, equity and accessibility for all, I found it difficult to implement these perspectives within policy development. However, the training I undertook for this project enabled me to gain the knowledge and skills required to implement such perspectives into my professional work. The resulting intervention, though frustrating at times, was deeply rewarding and has inspired me to advocate for further similar interventions within the Institute. The main take-aways I found were that implementing universal design principles into professional contexts are rarely as difficult as anticipated, and the rewards far outweigh the challenges faced.

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- See Change (2018) Action Plan Worksheet

- Zaremba, D., Schulze Kalthoff, I., Förster, K., Redlich, R., Grotegerd, D., Leehr, E. J., Meinert, S., Dohm, K., Bürger, C., Enneking, V., Böhnlein, J., Repple, J., Opel, N., Jörgens, S., Yüksel, D., Schmitt, S., Stein, F., Kircher, T., Krug, A., Nenadic, I., … Dannlowski, U. (2019). 'The effects of processing speed on memory impairment in patients with major depressive disorder', Progress in neuro-psychopharmacology & biological psychiatry, 92, pp. 494–500. Available at: *https://doi.org/10.1016/j.pnpbp.2019.02.015 (See QR Code or find the linked document here)*, accessed 02 November 2023).

UD Champion – name and contact details

Emma Balfe (emma.balfe@iadt.ie)

Case Study 4
Louisa Keogh

Title

Go-To Guides for all: Multimedia Learning

Area

Penultimate and final year undergraduate students. Pathways after graduation.

Keywords/theme

UDL, Assistive Tech, Student Engagement.

Who are the learners/ sector being targeted in this project?

The target audience for this project is students in their penultimate and final year, although it is relevant to all students.

Solution classification

As the creator of content and resources for students, I produce infographics and upload recorded video content for students in their penultimate and final years of college. Thus far, there has not been adequate attention paid to the accessibility of the content provided by me. There has been a poster, or a video or a pdf – but never all three, or two. I felt that it would be remiss not to consider broadening the means of those resources to all students in multiple forms. Considering the complex range of issues and questions that penultimate and final year students have regarding the realities of life after graduation, the inclusion of multiple means of learning is arguably the most important.

It was with this consideration in mind that I wanted to learn more about UDL interventions and how I could work to enhance the quality of the content provided and make it more UDL-friendly.

Methodology

1. I first completed AHEAD's ARK Universal Design for Learning as well as the curated IADT UD Champions LinkedIn Learning Pathway regarding making multiple ways to learn and provide learning content.
2. I planned the topics I would cover in this series of videos based on topics that are commonly popular with new graduates and began my research on each topic.
3. For each topic, I created a Word document to collate all the material and put it together under headings in preparation to turn it into a PowerPoint format.
4. I then put together a PowerPoint for each of the 3 topics: Budgeting, Post-Grad Applications and Career Goal Setting.

5. Throughout this work, I used the guidance of AHEAD's *'Creating Accessible Documents' (See QR Code or find the linked document here)* videos. I made use of Microsoft's Accessibility Checker throughout.
6. Using 'Loom', I recorded voice-over videos alongside the slides I prepared. During the recording I ensured that I spoke in a clear measured way, as I understand that generated subtitles can often be unclear when the speaker is going too fast.
7. I uploaded these videos to the FYMMO website and YouTube channel. Underneath the video, in the description box, I included the PowerPoint slides and the Word Document of the content explained in the video.

Solution

I produced 3 Go-To Guides videos for students in their penultimate and final year of studies. These videos are uploaded to the FYMMO YouTube page where there are generated subtitles, and alongside the videos would be links to the Word Document version of the 'script' and the PowerPoint slides. These videos will be advertised to all penultimate and final year students and remain on the Programmes YouTube Channel going forward.

Challenges

I was a late entrant to this initiative, so time was the first challenge I encountered. However, Rebecca Roper was supportive and attentive with her guidance throughout the process. As I had not received any training in the UDL space, my first challenge that was easily overcome was that of training. The LinkedIn Learning Pathway, ARK course and resources provided by the Head of Teaching + Learning proved invaluable, alongside my own research.

When it comes to students accessing resources and helpful information, various barriers can stand in their way. Unclear language, poor colour choice on interfaces and only one method of access is just some of these challenges faced. By creating a video and providing written and visual aid, it is my hope that these challenges can be overcome.

Student engagement is a consistent challenge in my field of work as the current Programme Coordinator for FYMMO. It can be difficult to persuade students to engage with events and content as their studies and social lives get busier all the time. To get their feedback on this content, it may be necessary to ask individuals I have previously worked with to view the content. As these methods are expanded to each new Guide made, it will require consistent effort to ensure that students truly benefit from the UDL measures put into place.

Strengths and potential

This project has the potential to be rolled out in further resources made for students going ahead. As it fulfils the principles of UDL in that it is easy to produce and does not require hours and hours of time to put together, the implementation of these 3 methods of receiving the information (video, document, and slideshow) are a good example of UDL principle in producing multiple forms of learning.

The strongest aspect of this project is how sustainable it will be to continue doing. While putting together Word Documents going forward, it will be standard practice to use the relevant processes of ensuring it is UDL-friendly and use the accessibility checker with all software programmes used. When I am finished in this post, it will be part of my handover to outline the importance of providing multiple means of understanding the information and learning.

The design and implementation of these videos and alternative materials break down the digital barriers of learning. In their eBook 'Universal Design: Creating Inclusive Environments', Edward Steinfeld and Jordana Maisel posit that 'Breaking down barriers can allow people who are disadvantaged or oppressed, in a literal sense, to gain access to resources'. In this instance, they are discussing physical barriers in our everyday lives, like prison systems. However, this statement is pertinent to the digital barriers faced by leaners. By implementing UDL practices into providing these resources, Go-To Guides can dismantle these barriers.

Key outcomes

- Students find the information easy to understand and engaging.
- Viewers and learners find the multiple methods of learning useful and interesting, therefore engagement with the videos increases.
- Feedback given from students stated that they found the videos 'very helpful' and easy to navigate. The multiple modes of access to the content made students feel comfortable and confident with the information given.
- On feedback, one student suggested uploading the content to the 'Hub', which is a content platform for staff and students. I plan to work with the Educational Technologist to see if this would be possible going forward.

Critical success factors/Impact of project

I gathered feedback from a couple of students who consumed the content. These students stated that the multiple means of access to the content were helpful in their experience. One suggestion from a student in 2nd year Animation was 'I think if you had a link to these videos on the IADT Hub that would make them even easier to access'. This is something that can be worked on going forward.

By potentially uploading this content to the hub, they will have a broader reach of students that can utilise them.

How did the training you received on the project and your subsequent intervention impact on you? What are your main takeaways?

I thoroughly enjoyed learning about UDL. I had previously never engaged with the principles, however I found that the practice of implementing them was not intimidating or strenuous. As someone who works in a student-facing role, I believe that it is of paramount importance to strive to engage with accessible practices and make life better for learners. Going forward in my work, I will continue to seek out further UDL training to further enhance my knowledge and apply it to every aspect of my work.

Please supply links to the intervention/ revision of content created :

- Post-Grad Go-To Guide
  (See QR Code or find the linked document here)
- Career Goal Setting Go-To Guide
  (See QR Code or find the linked document here)
- Budgeting Go-To Guide:
  (See QR Code or find the linked document here)

Key references:

- AHEAD, Creating Accessible Documents (2023)
  (See QR Code or find the linked document here)
- Edward Steinfeld, Jordana Maisel, Universal Design: Creating Inclusive Environments, Illustrated edn. (USA: John Wiley & Sons, 2012), in Google Books
  (See QR Code or find the linked document here)

- AHEAD – Digital Accessibility Short Courses
  (See QR Code or find the linked document here)

- AHEAD, Word Document Accessibility Guidelines (2023)
  (See QR Code or find the linked document here)

UD Champion – name and contact details

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Resources from the training for this project are available through
(See QR Code or find the linked document here)

Case Study 5
Dr. Christine Horn

Title

Designing Statistics 101 – A student-centred Introduction to Data Analysis using Excel

Area

This project aims to design an online learning course, Statistics 101, covering basic statistical concepts, including data summaries and visualisation. It aims to equip students with practical skills for conducting simple data analysis, offering a variety of learning materials.

Statistics 101 emphasises understanding over rote learning, focussing on practical skills and using Excel for data summary and visualisation to make statistical analysis more accessible and engaging.

The module will benefit students who struggle with data analysis or need to catch up, allowing them to achieve competency at their own pace.

The course design employs Universal Design for Learning (UDL) principles to accommodate the diversity of learners and foster student engagement and empowerment.

Keywords/theme

Key themes include Universal Design (UD), Universal Design for Learning (UDL), Student Empowerment, Digital Transformation, Sustainable Teaching Practices, Numeracy, Data Analysis, Statistics, and Data Literacy.

Who are the learners/ sector being targeted in this project?

The target audience for the course is 1st and 2nd-year undergraduate students. It may also be relevant to postgraduate students returning to education.

Solution classification

Our students often find maths and statistics particularly challenging, fall behind and struggle to catch up. This is frequently related to math anxiety, which results in avoiding maths. (Pizzy & Kramer, 2017).

While there are many statistics courses out there, this one aims to be a very gentle introduction. It will help students understand basic statistics and do simple data recording and data analysis in Excel using graphs and data summaries.

The course design builds on my statistics courses and uses student feedback and Google Sites. The design aims to achieve a balance between the variety of material (e.g. text, slides, videos, show-and-tell examples, data sets or quizzes for practice) to be more inclusive and facilitate remote learning while maintaining easy navigation throughout the material.

Methodology

The research and design included the following activities:

1. Completing the Universal Design Training online.
2. Gathering student feedback from psychology and business students on the current courses. The main input related to the importance of easy and clear navigation (easier on Google Sites than on Blackboard), the option to quickly preview and skim through the material (supported on Google Sites) and the addition of more video presentations and “Show and Tell” videos for revision.
3. Reviewing the literature relating to best practices for designing online statistics courses (Roski, Walkowitz & Nehring, 2021; Pacansky-Brock, Smedshammer & Vincent-Layton,202) and comparing Blackboard and Goggle Sites design features.
4. Redesigning my RMS3 Google Site to pilot Statistics 101 elements (incl. restructuring of material, adding more guided exercises and quizzes)
5. Designing Statistics 101 sample pages. This was an iterative process involving feedback from students and colleagues. The feedback on the RMS3 Google Site was that regular class attendance makes catching up with course material easy, but those missing classes find it more challenging. To make the online material more accessible for remote learners, additional motivational material and more “Show and Tell” videos would be helpful.

The solution

I developed two elements:

- A redesigned Statistics with Excel and SPSS Google Site - This is primarily a site for Applied Psychology Year 2 students and part of the RMS3 module. It also serves as a pilot project for Statistics 101.
- A design template for Statistics 101. The purpose of Statistics 101 is to provide extra support for understanding the basic principles of statistics and to enable learners to do simple data analysis using Excel. The main focus is on the provision of learning material in multimodal form. The course will be developed next term.

Challenges

General Challenges

- General challenges in learning statistics: Learning maths and statistics is like learning a foreign language (Wakefield, 2000). Both require an open mind, continued practice and repetition. Usually, learning units strongly build on what has been learned in previous units. If you miss the basics and don’t understand words or mathematical terms, it is challenging to progress and apply the language or statistics.

- Diversity and attention span: All students should come with basic knowledge of statistics learned in school, but the reality is different. While some come with good statistics knowledge, some do not have this basic understanding and come with negative experiences and, therefore, find it difficult to apply statistics. This leads to very different learning needs requiring different learning paths. This is mixed with varying learning styles and shorter attention spans.

UDL Approach

- One key to managing these challenges lies in the universal design for learning. Learning about universal design made me especially aware of the importance of multimodal presentations and emphasised the importance of the overall design. The design template includes a recommended structure for all learning parts.
- Introduction with objectives and motivation,
- Content with bite-sized presentations in text, visual and/or audio format, including summaries. The presentations can be previewed (scrolled through),
- Show and Tell videos demonstrating the application of statistics,
- Excel worksheets and quizzes, and
- Additional resources ranging from additional learning material (like LinkedIn Learning path) to stories related to the unit.

Blackboard versus Google Sites

- The recommended LMS is Blackboard, but it presents its challenges. I especially found the maximal navigation depth (two levels) and the preview and comment options for course elements (like slides, PDF files or data sets) limiting. Therefore, I'm using Google Sites for the content presentation, making it much easier to structure the material, integrate colour coding and summary comments into the design and use element containers for more complex tasks. Positive student feedback reinforced the decision to use Google Sites. Students find it easier to find material. They also commented on the ease of previewing files (scrolling through pages or slides), an option available on Google Sites but not on Blackboard.
- All links to the Google Sites are included on Blackboard.

Organisation of the course material

- Presenting material in different formats means adding material, potentially making it more challenging to find information. The design process was iterative. I experimented with various designs; the current design template is based on student feedback.

Strengths and potential

Once implemented, Statistics 101 provides students an additional opportunity to understand and apply fundamental data analysis and fosters their critical thinking and problem-solving skills.

Looking at the design process, the most important aspect for me was communicating with students about the design of the statistics

courses, which in itself increased students' engagement with the course material.

The course design is sustainable and can be easily expanded and adapted to more advanced statistics, using SPSS or Tableau, or, looking ahead, even to a course using ChatGPT for data analysis. Using Google Sites makes it easy to adapt the design in an iterative process.

Key outcomes

Key outcomes include

- Redesigned Google Site for Hands-on Statistics with Excel and SPSS with improved module content,
- Positive feedback on the redesign and increased student engagement
- Increased appreciation for multimodal learning approaches
- Once implemented, Statistics 101 should help students catch up on understanding statistics in their own time and space.

Critical success factors/Impact of project

Critical for the project's progress were

- Student and peer feedback, which has been vital to the design process
- Incorporation of UDL principles, improving content accessibility and engagement.
- The use of Google Sites to support multimodal delivery of the learning material.

How did the training you received on the project and your subsequent intervention impact on you? What are your main takeaways?

It helped me see the importance of universal design and it also helped me apply UD in the training material (multimodal presentation with slides, examples and videos with sample solutions).

Key references:

- Pizzie, R.G. and Kraemer, D.J.M., 2017. Avoiding math on a rapid timescale: Emotional responsivity and anxious attention in math anxiety. Brain and Cognition, 118, pp.100-107.
- Pacansky-Brock, M., Smedshammer, M. and Vincent-Layton, K., 2020. Humanizing online teaching to equitize higher education. Current Issues in Education, 21.
- Wakefield, D.V., 2000. Math as a Second Language. The Educational Forum, 64(3), pp.272-279.
- Roski, M., Walkowiak, M. and Nehring, A., 2021. Universal design for learning: The more, the better? Education Sciences, 11(4), 164.

Please link any assets you would like to share

- RMS3 Statistics with Excel and SPSS Google Site
  (See QR Code or find the linked document here)

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