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Bridging the Gap: 5 Minutes of Digital Inclusion Empowers Educators in Higher Education for Learner Success

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Abstract

The "5 Minutes of Digital Inclusion" project aimed to bridge a gap in Higher Education (HE) by equipping educators with knowledge and skills to create digitally inclusive learning environments. This need is due to the challenges faced by learners with disabilities in HE. These challenges stem from issues that include lack of awareness in integrating technology effectively into teaching, and the lack of pedagogical training for educators, often caused by time constraints and budget cuts.

The project addressed these issues by providing educators with easily accessible, bite-sized video modules delivered over a five-week period. These modules aimed to equip educators with the tools and strategies to leverage technology for digitally inclusive learning. While the full effectiveness of the programme requires empirical evaluation, this article explores its potential impact on educators, students, and the overall educational system. This impact could include improved skills for educators to integrate the principles of universal design for learning, increased student engagement, and ultimately, better learning outcomes for students with diverse needs, leading to a more inclusive educational system overall.

Keywords: Digital Inclusion, Higher Education, Educators, Learning Environments, Accessibility.

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INTRODUCTION

Universities in Singapore and the UK are increasingly making the shift towards more inclusive learning environments. This move is not simply aspirational, but rather a legal and ethical imperative enshrined in international declarations like the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD) and the Sustainable Development Goals. The UN CRPD emphasises the right to education for all, promoting equitable access and opportunities at every level, including higher education (United Nations, 2006). Whilst point 4.5 of the Sustainable Development Goals for education state:

By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations (United Nations, n.d.).

Looking at specific national frameworks, the UK's Equality Act 2010 safeguards individuals from discrimination based on disability, ensuring all students have a level playing field in education. In 2015, the government cut disability allowance for students in Higher Education Institutions (HEI) and put the onus on universities to provide any non-medical support (Weale, 2015). This led to universities needing to make learning and assessment more accessible. In addition, the Public Sector Bodies (Websites and Mobile Applications) Accessibility Regulations 2018 address digital accessibility within the context of HEIs. Whilst this appears to be a solid legal scaffolding, the UK depends on very inconsistent mechanisms for diagnosis, particularly for specific learning differences (SLDs). If a referral for an assessment has been made by an education provider, the wait to obtain an assessment could be up to four years. Unless the family are able to afford private assessments, children have to go without the necessary support. This makes it all the more important that teachers are prepared to support students and make reasonable adjustments even without official assessments. In the context of a university, where most reasonable adjustment plans have already been established for students, there may also be additional challenges where staff may not fully understand these adjustments.

Singapore's Constitution enshrines the principle of equality before the law, while its Enabling Masterplans outline strategies for building an inclusive society that integrates education (Constitution of the Republic of Singapore, 1965; Ministry of Social and Family Development Singapore, 2007, 2012, 2016, 2022). However, the significance of inclusive education extends beyond legal frameworks. It encourages a just and respectful learning environment, recognising the inherent value of each student. Educators have a moral obligation to ensure all learners have the tools and support they need to flourish.

Translating these intentions into tangible realities presents challenges. Educators may face resource constraints, lacking access to qualified special needs educators, assistive technologies, or learning materials adapted for diverse learning styles. Additionally, a lack of awareness and training in inclusive practices can impede progress. Physical accessibility within universities, scheduling accommodations, and adapting assessments can also pose logistical hurdles. The message from the HEI sector after the 2015 announcement in the UK was that most academics and teachers did not specialise in understanding disabilities and did not see the need to spend time learning about them either. If they did see the need, they did not see how they could fit this into their workload to learn, specialise and practice inclusion. Finally, standardised testing and rigid curriculum structures can create pressure for a one-size-fits-all approach, potentially disadvantaging students with diverse learning needs (Blackall et al., 2013; Carlisle, 2023; George, 2022).

Overcoming the challenges of inclusive education requires ongoing support and collaboration. Equipping educators with proper training, fostering inclusive cultures, and allocating sufficient resources are crucial steps towards building learning environments where every student feels valued and empowered to learn. This was the aim of the "5 Minutes of Digital Inclusion" initiative, a collaborative project between Goldsmiths, University of London, and LASALLE College of the Arts, University of the Arts Singapore.

Arising from the question "How can we equip educators with the tools to support all learners without adding to their workload?", the project highlights a variety of learning differences, explores their potential manifestations, shares lived experiences from students and teachers and examines digital tools that can bolster student success. Our approach was to provide easily digestible, bite-sized modules as daily videos and readings, offering content without adding strain to busy schedules. These resources can be revisited or disseminated at the users' discretion, empowering educators with crucial understanding in a time-efficient manner.

Why Inclusion Matters in Higher Education

As access routes to tertiary education diversify, the number of students with declared disabilities in higher education (HE) is on the rise. In the UK, national figures from 2019 indicate that 17.3% of home students identified as having a disability, reflecting a near 50% increase over the previous five years (Hubble & Bolton, 2021). This trend is echoed at the institutional level. For instance, Goldsmiths, University of London reported a declaration rate of 22.3% in the 2022-2023 academic year. Here, mental health (HESA, 2023) needs were the most frequently reported disability, followed by SLDs which include dyslexia, dyspraxia and ADHD.

In Singapore, the Ministry of Education (MOE) does not currently track the number of students with disabilities in Institutes of Higher Learning (IHLs), which include publicly funded universities, polytechnics and institutes of technical education (ITE). However, when the MOE was questioned in parliament, the response was 3-5% of students entering IHLs between 2019-2023 declared a special educational need (SEN) (Ministry of Education Singapore, 2024). These lower figures are potentially due to factors like limited awareness (Disabled People's Association Singapore, 2016), or stigma (Tyler & Slater, 2018). Regardless of exact figures, the presence of students with diverse needs, whether assessed or not, necessitates a focus on inclusive practices. Frameworks in both Singapore and the UK support this principle.

The UK's Equality Act 2010 safeguards individuals from discrimination based on disability in various aspects of national life, including education. Within the education sector, the Act ensures a level playing field for all students by prohibiting discrimination against students with disabilities by removing barriers. This protection covers all stages of education, from admissions and course selection to teaching practices and assessments. The Act also mandates a duty for educational institutions to make "reasonable adjustments" to cater to the specific needs of students with disabilities. These adjustments can include providing assistive technologies, offering alternative assessment formats, like extended time for exams, or modifying learning materials to ensure equal access to education for all students.

In addition, the Public Sector Bodies (Websites and Mobile Applications) 2018 address digital accessibility by mandating that all websites and mobile applications operated by public sector bodies in the UK must meet specific accessibility standards. These standards ensure that information and resources on these platforms are usable by everyone, including people with disabilities who may need a clear structure for comprehension of text, or rely on assistive technologies like screen readers or text-to-speech software. The regulations outline requirements related to elements like providing alternative text descriptions for images, ensuring proper keyboard navigation for screen reader users, and offering transcripts for audio content. By establishing these accessibility standards, the 2018 Regulations aim to remove digital barriers and promote equal access to information and services for anyone interacting with the UK public sector.

Singapore's approach to inclusive education differs from those that rely heavily on legal frameworks. While its Constitution lacks explicit mention of inclusion, Article 12's guarantee of equality before the law holds weight for many advocates. This article is interpreted to ensure equal access to education for students with disabilities, building a case for inclusive practices in Singaporean universities. However, unlike many countries, legal mandates are not the primary driver. Singapore's commitment to international agreements like the UN CRPD strengthens its focus on inclusion but achieving it likely hinges on a combination of legal interpretation and cultural values. The Enabling

Masterplans, currently in their fourth iteration (Enabling Masterplan 2030 or EMP2030), hold a significant, albeit non-legally binding, influence on governmental support for students with disabilities in Singaporean IHLs. This influence has manifested in several ways. One important impact was the establishment of Disability Support Offices (DSOs) within universities. The Enabling Masterplans have played a vital role in encouraging universities to create these central hubs for students with disabilities (Ministry of Social and Family Development Singapore, 2022). DSOs offer guidance, support services, and facilitate access to reasonable accommodations, ensuring a smoother academic journey for students with diverse needs.

Furthermore, the Masterplans influenced the creation of SEN Funds within IHLs. These funds allocate resources specifically for students with declared disabilities. Financial assistance is provided to aid learning such as acquiring assistive technologies that include screen readers or specialised software. Additionally, SEN Funds can be used to cover the cost of services, including note-taking assistance or sign language interpreters. By promoting the establishment of DSOs and SEN Funds, the Enabling Masterplans have become a driving force in creating a more inclusive HE environment that empowers students with disabilities in Singapore.

While Singapore has implemented policies to support students with disabilities in HE, like the UN CRPD ratification and deployment of support staff, a significant gap still exists. This is because inclusive education is a developing concept, and negative attitudes towards these students often linger among the public (Lien Foundation, 2016), educators and even other students. The current streaming system in secondary schools, focused on academic achievement, might contribute to these negative views. Furthermore, educators in IHLs often lack formal training in supporting students with SEN, leading to feelings of inadequacy and potentially hindering their ability to identify and assist these students (Yap, 2019). These negative attitudes can instil feelings of anxiety and lower self-esteem in students with disabilities (Desombre et al., 2018). Finally, the underuse of support services might occur due to a lack of awareness by students and families, inadequate training for administrative staff, or inherent limitations within current policies.

Challenges in Creating Inclusive Learning Environments

Despite legal mandates and ethical considerations, universities face several challenges in creating inclusive learning environments. Limited time, budgets, and access to trained staff hinder the provision of necessary support services and development of specialised lesson plans. Faculty schedules may be packed, and funding for accessibility services and assistive technologies may be restricted. Staff might not receive adequate training on identifying and catering to various learning differences (Brock, 2010; Everett & Oswald, 2018; Tyler & Slater, 2018; Yap, 2019).

Stigma surrounding disability disclosure can be a significant barrier for students in HE. Fear of judgment or negative perceptions can deter students from seeking the support services and accommodations they require to succeed. This can lead to feelings of isolation and hinder their academic progress. Additionally, faculty members might not be fully aware of the diverse spectrum of learning differences and how they manifest in the learning environment (Burgstahler & Doe, 2006). For example, a student with dyslexia may struggle with written assignments but excel in verbal discussions. Without this awareness, educators may misinterpret these differences as a lack of effort or understanding, leading to missed opportunities to support these students effectively.

Physical accessibility barriers within universities can also create significant challenges for students with mobility impairments. Limited access to elevators, narrow doorways, or a lack of ramps in classrooms and buildings can physically impede participation and limit engagement in the learning environment (Dolmage, 2017). Furthermore, technological integration of assistive tools and converting learning materials into alternative formats like audiobooks or braille can be a time-consuming process. These efforts often require ongoing technical support to ensure students have the necessary resources to access and process information effectively (Burgstahler, 2015; George, 2022).

Large class sizes in higher education can pose another challenge for inclusive practices. With limited individual attention, it can be difficult for educators to personalise instruction and cater to the diverse needs of students with disabilities. Unconscious biases or negative attitudes towards students with disabilities can further exacerbate these challenges (Burgstahler & Doe, 2006). These biases can create a hostile learning environment where students feel unwelcome or unsupported. Moreover, insufficient collaboration between faculty, disability support services, and students with disabilities can hinder the effectiveness of inclusive practices (Carlisle, 2021). Open communication and a coordinated approach are crucial to ensure students receive the appropriate support and accommodations to thrive academically.

These interconnected challenges highlight the need for a multi-pronged approach towards creating a truly inclusive learning environment in HE (Carlisle, 2022, 2023). Applying Universal Design for Learning (UDL) offers a framework to achieve this goal. UDL principles advocate for providing multiple means of engagement, representation, and action to optimise learning for all students (Glass et al., 2013; Meyer et al., 2014). Faculty development programmes that focus on UDL can equip instructors with the knowledge and skills to create learning experiences that cater to diverse learning needs. This might involve using a variety of teaching methods, such as lectures, discussions, simulations, and hands-on activities (Sanger, 2020). Additionally, implementing accessible technologies like screen readers, captioning, and text-to-speech tools can remove barriers for students with disabilities.

METHODOLOGY

Bridging the Gap with "5 Minutes of Digital Inclusion"

This project focused on addressing the complex challenges hindering the creation of digitally inclusive learning environments within universities. These challenges include limited time constraints for educators, budgetary restrictions and even funding cuts in the UK (Everett & Oswald, 2018) that limit resource allocation, a lack of awareness amongst faculty regarding diverse learning needs, difficulties in ensuring the accessibility of course materials for students with disabilities, and the broader issue of digital inclusion (Kluzer & Pujol Priego, 2018). Recognising the limitations on educators' time and resources, Warnes and colleagues (2018) actioned short 5,10- and 15-minute staff development sessions named "5 Minutes of Digital Literacy". This project drew inspiration from its success and adopted the "5 Minutes of Digital Inclusion" initiative. This initiative aimed to overcome these hurdles by delivering bite-sized, accessible learning modules that could be readily integrated into busy schedules. By focusing on short, manageable video segments that promote readily available online resources, the project aimed to ensure that faculty development opportunities were no longer a time-consuming burden but rather an accessible and convenient means of acquiring the knowledge and skills necessary to create digitally inclusive learning environments.

The initiative targeted five key areas. The first was to raise awareness of the most common diverse learning needs. The use of assistive technologies available through commonly used software was highlighted such as text-to-speech and speech-to-text. Time was spent on exploring how to ensure accessible course materials by adding alt text for images, captions for videos and using document headers. Inclusive assessment practices were discussed including alternative assessment methods, reasonable adjustments and the principles of UDL. Finally, accessible learning management systems and accessibility checkers were introduced.

Given the time constraints educators face, the initiative opted for short, easily accessible instructional videos (Beheshti et al., 2018; Mayer, 2021). These videos, each lasting no more than 5 minutes, provided bite-sized learning modules on the chosen topics. By delivering them as daily instalments over 5 weeks, the project ensured participants would not be overwhelmed. The videos were stored on YouTube as unpublished and were curated on a WordPress site for easy access.

Twenty-five video segments were created, covering the most prevalent learning differences encountered in HE, specifically SLDs, ADHD, ASD and sensory disabilities. Mental health conditions, due to their wide spectrum of presentations, were excluded. The videos incorporated explanations of learning differences, assistive technologies, and inclusive practices, practical guidance on using readily available technology to enhance

accessibility as well as the lived experiences of students and staff to further illustrate challenges and solutions.

Each week was loosely focused on a central theme. These were: 1) understanding learning differences and their challenges, 2) assistive technologies for students, 3) creating accessible materials, 4) implementing inclusive assessments, 5) principles of UDL to create a digitally inclusive learning environment. A student or staff member with relevant lived experiences provided video reflections.

To maximise accessibility and encourage reuse, the videos were licensed under Creative Commons, allowing viewers to freely share and adapt the content. Given the unpublished status on YouTube, access was controlled through shared links, ensuring the videos reached only intended audiences. This two-phased dissemination strategy balanced openness with control: the Creative Commons license allowed for broad engagement, while shared links prevented unintended public exposure.

Opt-In vs. Direct Email

Selecting the most appropriate communication channel for awareness raising campaigns significantly impacts audience reach. Opt-in communication channels offer a targeted approach, reaching a pre-qualified audience who has demonstrably expressed interest in the product or service. Whilst this allows for focused messaging, the approach is “preaching to the converted”, in other words, there is a strong likelihood that those that sign up are educators with an ongoing interest in the topic. Additionally, this targeted approach can limit initial reach compared to direct email (Junghans et al., 2005).

Direct email offers a broader reach, potentially reaching those who may not be actively searching for information. Unlike targeted email marketing, direct email sends messages to a compiled list of email addresses, in this case HE email directories, regardless of prior consent. While this can be advantageous for raising awareness, it can also be perceived as intrusive, where competition within crowded inboxes can further challenge message visibility.

For this study, the videos and resources were shared during two different time periods:

Phase 1 (Opt-in, September 2023)

The initial release targeted staff at LASALLE and Goldsmiths. During this phase the collaborators had hoped that both IHLs would allow for direct email options to all academic staff. However, relying on an opt-in approach proved to be a limitation, with participation restricted to those who actively signed up for daily email notifications with links to the videos.

Phase 2 (Direct Email, January 2024)

The second phase addressed the limitations of the opt-in approach. Here, the videos were directly emailed to all administrative staff, full-time faculty, and part-time faculty at LASALLE. This ensured wider dissemination and increased accessibility of the resources.

FINDINGS

Viewership Data and Programme Evaluation

"5 Minutes of Digital Inclusion" aimed to be accessible and user-friendly to promote engagement. Data collected between September 2023 and March 2024 revealed promising results. Over 3,000 unique visitors accessed the programme, generating nearly 6,000 total visits. This suggests repeat engagement, with visitors returning for additional content. Furthermore, over 25% of visits exceeded two minutes, indicating user engagement and potentially absorbing valuable content. The most popular videos during this period (detailed in Table 1) were those released in the first two weeks.

Table 1: Data ranging from September 2023 – March 2024

Statistics	Top five most viewed videos
No. Unique Visitors = 3006	Day 7: Student's Lived Experience - Dyslexia
No. Visits = 5815	Day 2: Let's talk about Specific Learning Differences
Visit Duration 2 minutes or more <ul style="list-style-type: none"> ◆ 1504 ◆ 25.67% of visits 	Day 3: Let's Talk About ASD
Countries include:	Day 4 Let's Talk About ADHD
UK, Singapore, Finland, Netherlands, France, Austria, USA, India, Australia, Malaysia, Sri Lanka	Day 6: Text-to-Speech

LASALLE Data

A separate analysis focused on LASALLE educators who received the resources via email between January to February 2024. This targeted approach yielded interesting results. Emails targeted 553 staff members, whilst 1,191 unique individuals visited the resources, generating 2,235 visits between January and March 2024. This suggests information sharing or return visits. Similar to the overall data, over 25% of these visits exceeded two minutes, indicating engagement. While popular videos mirrored broader trends (focusing on specific learning differences and lived experiences), the video on "reasonable adjustments" was particularly popular among LASALLE educators. This warrants further investigation to determine if it reflects a specific need at LASALLE or a broader trend.

Measuring Awareness

Directly measuring the project's impact on student learning outcomes from these resources is a complex undertaking that requires further investigation using methodologies beyond website analytics. While the high viewership numbers indicate a positive reach among educators, this reach alone does not equate to a demonstrated impact on classroom practices. However, this initial engagement has the potential to serve as a foundation for future research exploring areas where educators might require further support in implementing digitally inclusive practices. To definitively understand these needs and the programme's effectiveness in fostering digitally inclusive classrooms, in-depth studies employing a mixed-methods approach that combines quantitative data with qualitative data collection techniques like educator interviews or focus groups would be necessary.

Sustainable Resource

The "5 Minutes of Digital Inclusion" project addresses a need in education by offering educators a reusable resource specifically designed for seamless integration into existing curricula or professional development programmes. The project's core strength lies in its concise format as each module requires only five minutes, making it ideal for busy educators with limited time for additional training materials.

Further enhancing its reusability, the programme provides educators with pre-selected, high-quality videos and readings on digital inclusion. This eliminates the need for educators to invest valuable time searching for and vetting relevant content, allowing them to focus on effective lesson planning and delivery. Additionally, the Creative Commons licensing of the programme materials empowers educators with the flexibility to adapt and integrate the content into their unique teaching contexts and learning objectives. This flexibility ensures the video content remains relevant and impactful across diverse educational settings.

Expansion and Collaboration

Institutional Buy-In

While the project did not use a mandatory direct email approach, alternative communication strategies, such as direct email campaigns, could be explored in future iterations to potentially increase viewership numbers. Implementing a structured framework alongside direct email campaigns, with potential institutional buy-in, could further enhance programme visibility and prioritisation by educators within their busy schedules. This approach could potentially strike a balance between accessibility and encouraging a stronger sense of educational commitment compared to the solely voluntary approach employed in this initial programme offering. However, it is important to acknowledge that mandatory participation, while ensuring engagement, can engender feelings of reduced motivation. Future research could explore the effectiveness of various communication strategies, including a well-structured direct email approach, in balancing accessibility with engagement while minimising feelings of obligation among educators.

Ultimately, widespread programme implementation would undoubtedly facilitate the goals of "5 Minutes of Digital Inclusion". However, the project design acknowledges the reality that individual faculty buy-in might be necessary in some contexts. Gaining such buy-in can be strategically achieved by emphasising the key benefits for educators. Firstly, the concise format, requiring only five minutes per module, minimises the time commitment for busy faculty members. Secondly, the pre-curated, high-quality resources ensure educators can immediately integrate digital inclusion into their existing teaching or professional development activities. This eliminates the need for time-consuming searches for suitable materials. More importantly, the programme can help to raise faculty awareness of best practices in digital accessibility. By highlighting these advantages, "5 Minutes of Digital Inclusion" offers a compelling case for individual faculty members to champion its adoption within their own spheres of influence.

Partnership Opportunities

The programme's adaptability is a significant strength. Exploring the possibility of sharing the programme with Goldsmiths' civic engagement partners, such as a local college in London, can further amplify the programme's reach and impact within the educational community. Offering to run pilot programmes with potential partners demonstrates its possible effectiveness and gathers valuable data to support wider institutional adoption.

DISCUSSION

Impact and Potential of "5 Minutes of Digital Inclusion"

These interconnected challenges highlight the need for a multi-pronged approach towards creating inclusive learning environments in HE (Carlisle, 2022, 2023). Applying UDL offers a framework to achieve this goal. UDL principles advocate for providing multiple means of engagement, representation, and action to optimise learning for all students (Sanger, 2020). However, technology is often underused in HE and educators frequently lack the pedagogical training to effectively integrate it into their teaching (Sahin Izmirlı & Kirmacı, 2017). This is where initiatives like "5 Minutes of Digital Inclusion" address a critical need within HE. This type of project can equip educators with the knowledge and skills to create digitally inclusive learning environments, even if the current initiative's full effectiveness requires further empirical evaluation. This section explores the potential impact of "5 Minutes of Digital Inclusion" on educators, students, and the overall educational system.

Traditional faculty development programmes often demand significant time commitments, a substantial hurdle for busy academics. The "5 Minutes of Digital Inclusion" videos overcome this barrier by delivering its content in concise, manageable video modules. This "bite-sized" approach offers several advantages. Firstly, it breaks down complex topics like learning differences and assistive technologies into smaller, less intimidating segments. This facilitates better information absorption compared to lengthy training sessions. Secondly, the 5-minute format allows for easy integration into existing workloads, eliminating the need for large time blocks. Finally, the programme's flexibility allows educators to learn at their own pace, revisiting previous content or focusing on specific areas of interest for a personalised learning experience. These features have the potential to empower educators with the necessary knowledge and skills without adding strain to their demanding schedules.

The knowledge gained from "5 Minutes of Digital Inclusion" can be readily applied in the learning environment. Educators can start incorporating digitally inclusive practices such as using screen reader compatible documents or offering alternative assessment options. These changes can lead to improved student engagement. By understanding learning differences and employing appropriate tools, educators can create a more digitally inclusive and engaging learning environment for all students. This aids active participation and a sense of belonging in the classroom (Bellman et al., 2018). When digitally inclusive practices are implemented, students with diverse learning needs are better equipped to achieve their academic goals, thriving in the classroom environment without facing undue barriers to learning.

The programme's influence may extend beyond individual classrooms, potentially contributing to a more digitally inclusive learning environment for all students in higher education. "5 Minutes of Digital Inclusion" may not only equip individual educators, but also have the potential to create a ripple effect that could lead to systemic change within universities. As more educators participate in such programmes, a broader institutional knowledge base on digital inclusive practices can be built. This, in turn, might nurture a shift in pedagogy towards a more digitally inclusive teaching approach across the institution. Furthermore, educators empowered by the programme could potentially become champions for inclusivity, inspiring colleagues and collaborating with support services to identify and address ongoing challenges. This collaborative approach, if fostered, could lead to lasting systemic changes that extend beyond the learning and teaching culture, potentially impacting areas like curriculum design, resource allocation, and overall institutional policies towards digital inclusion.

LIMITATIONS AND FUTURE RESEARCH

While the "5 Minutes of Digital Inclusion" programme offers a compelling solution to time and budget constraints, there are potential limitations to consider. The concise format might leave educators wanting more depth on complex topics like SLDs or advanced assistive technologies. Additionally, the programme relies on individual faculty members to champion its use, which could limit its long-term impact without broader institutional support.

Furthermore, the primary focus is on equipping educators. For a truly digitally inclusive environment, including resources or training modules for students and support staff would be beneficial. The reliance on shared links for accessing videos might also pose a barrier for users unfamiliar with navigating permission-protected online content.

Finally, the collaborators acknowledge that the funding received for this project was seed funding, which did not extend to greater in-depth analysis or a longitudinal approach. The project has had some secondary interest and usage, however, there is a need for a formal evaluation to assess the programme's true effectiveness. Without such data, it is difficult to measure the impact on educators and student learning outcomes. Additionally, the programme might not be equally adaptable across all disciplines or educational contexts. Certain fields might require more specialised knowledge of accessibility considerations.

These limitations suggest areas for improvement. Developing supplemental resources that provide more comprehensive coverage of specific topics could address the need for greater depth. Advocating for wider institutional adoption could ensure a more lasting impact. Creating resources for students and support staff, and exploring alternative access methods for the videos, could create a more digitally inclusive environment.

Finally, implementing mechanisms to gather feedback and conduct a formal evaluation would provide valuable data on the programme's effectiveness, whilst developing discipline-specific versions could better address the needs of different fields.

CONCLUSION

The "5 Minutes of Digital Inclusion" project presents a practical approach to creating digitally inclusive learning environments within HE. Recognising the time constraints faced by educators, the programme delivers bite-sized, accessible learning modules that have the potential to galvanise faculty with knowledge and skills to create digital inclusive classrooms. This not only benefits students with diverse needs by removing barriers to learning, but also encourages a more engaged and equitable learning experience for all.

The programme's impact extends beyond individual classrooms. By equipping educators with a shared understanding of best practices and fostering collaboration with support services, "5 Minutes of Digital Inclusion" has the capacity to create a ripple effect leading to systemic change within universities. Increased awareness of digital inclusion practices can inspire a shift in pedagogy across the institution, resulting in a more digitally inclusive learning environment for all students. Furthermore, educators can become champions for inclusivity, inspiring colleagues and collaborating with support services to identify and address ongoing challenges. This collaborative approach ensures a sustainable and effective approach to galvanising inclusive digital practices within the university. It is our aim that by empowering educators with accessible knowledge and fostering a collaborative environment, the project paves the way for a more inclusive learning experience for all students.

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REFERENCES

- Beheshti, M., Taspolat, A., Kaya, S. O., & Sapanca, F. H. (2018). Characteristics of instructional videos. *World Journal on Educational Technology: Current Issues*, 10(1), 61–069. www.wj-et.eu
- Bellman, S., Burgstahler, S., & Chudler, E. H. (2018). Broadening participation by including more individuals with disabilities in STEM: Promising practices from an engineering research center. *American Behavioral Scientist*, 62(5), 645–656. <https://doi.org/10.1177/0002764218768864>
- Blackall, H.-L., Peterson, P., Hollowell, J., Shah, N., Selvakumaran, M., Baily, L., Baker, N., Talsania, K., Ibin, M., Kadir, E., Khan, S., Pandya, K., Prokofiev, R., Rees, M., Shah, R., Virdee, M., Vyas, T., Bean, C., Gallacher, J., ... West, L. (2013). University challenge 2013: *The Trailblazers' higher education report* (Issue October). <http://www.muscular dystrophyuk.org/wp-content/uploads/2015/01/University-challenge-2013-updated.pdf>
- Brock, T. (2010). Young adults and higher education: Barriers and breakthroughs to success. *The Future of Children*, 20(1), 109–132. <https://doi.org/10.1353/foc.0.0040>
- Burgstahler, S. (2015). Opening doors or slamming them shut? Online learning practices and students with disabilities. *Social Inclusion*, 3(6), 69–79. <https://doi.org/10.17645/si.v3i6.420>
- Burgstahler, S., & Doe, T. (2006). Improving postsecondary outcomes for students with disabilities: Designing professional development for faculty. *Journal of Postsecondary Education & Disability*, 18(2), 135–147. <http://www.rrtc.hawaii.edu>
- Carlisle, D. D. E. (2021). *Learners with special educational needs reflecting on their first year at university: A study of the historical background, recent developments, and issues of concern for students in Singapore* [Doctoral Thesis, University of Western Australia]. <https://doi.org/https://doi.org/10.26182/kwsd-a320>
- Carlisle, D. D. E. (2022). See me, hear me: Successes and challenges of students with invisible disabilities at university in Singapore. *Asia Pacific Journal of Developmental Differences*, 9(1), 119–142. <https://doi.org/10.3850/S2345734122000142>
- Carlisle, D. D. E. (2023). Oh! She's doing fine: Realities and Concerns of Learners with Disabilities at University in Singapore. In K. V. Zhuang, M. E. Wong, & D. Goodley (Eds.), *Not Without Us: Perspectives on Disability and Inclusion in Singapore* (pp. 295–314). Ethos Books. <https://www.ethosbooks.com.sg/products/not-without-us-perspectives-on-disability-and-inclusion-in-singapore>
- Constitution of the Republic of Singapore (1965).
- Desombre, C., Aneymar, S., & Delelis, G. (2018). Stereotype threat among students with disabilities: the importance of the evaluative context on their cognitive performance. *European Journal of Psychology of Education*, 33(2), 201–214. <https://doi.org/10.1007/s10212-016-0327-4>
- Disabled People's Association Singapore. (2016). Achieving *inclusion in education: Understanding the needs of students with disabilities*. <https://www.dpa.org.sg/wp-content/uploads/2018/08/Inclusion-in-Education2.pdf>
- Dolmage, J. T. (2017). The Retrofit. In *Academic Ableism: Disability in Higher Education* (pp. 67–98). University of Michigan Press. <http://www.jstor.org/stable/j.ctvr33d50.5>
- Equality Act (2010). c. 15. <https://www.legislation.gov.uk/ukpga/2010/15/contents>
- Everett, S., & Oswald, G. (2018). Engaging and training students in the development of inclusive learning materials for their peers. *Teaching in Higher Education*, 23(7), 802–817. <https://doi.org/10.1080/13562517.2017.1421631>

- George, J. (2022). A Strategic Approach to a Disability Inclusive Academic Department. *ACM International Conference Proceeding Series*, 122–128. <https://doi.org/10.1145/3563137.3563156>
- Glass, D., Meyer, A., & Rose, D. H. (2013). Universal design for learning and the arts. *Harvard Educational Review*, 83(1), 98–119. <https://doi.org/10.17763/haer.83.1.33102p26478p54pw>
- HESA. (2023, January 31). *Who's studying in HE*. Higher Education Student Statistics: UK, 2022/23. <https://www.hesa.ac.uk/data-and-analysis/students/whos-in-he>
- Hubble, S., & Bolton, P. (2021). *Support for Disabled Students in Higher Education: Briefing Paper Number 8716*. House of Commons Library. <https://doi.org/10.4018/978-1-61350-183-2.ch010>
- Junghans, C., Feder, G., Hemingway, H., Timmis, A., & Jones, M. (2005). Recruiting patients to medical research: Double blind randomised trial of "opt-in" versus "opt-out" strategies. *British Medical Journal*, 331(7522), 940–942. <https://doi.org/10.1136/bmj.38583.625613.AE>
- Kluzer, Stefano., & Pujol Priego, L. (2018). DigComp into action - Get inspired make it happen (S. Carretero, Y. Punie, R. Vuorikari, M. Cabrera, & W. O'Keeffe, (Eds.). *European Commission*. <https://doi.org/10.2760/112945>
- Lien Foundation. (2016). *Inclusive attitudes survey part 1: Views of the general public* (Issue May). http://www.lienfoundation.org/sites/default/files/FINAL - Inclusive Attitudes Survey Part 1_30May16.pdf
- Mayer, R. E. (2021). Evidence-Based Principles for How to Design Effective Instructional Videos. *Journal of Applied Research in Memory and Cognition*, 10(2), 229–240. <https://doi.org/10.1016/J.JARMAC.2021.03.007>
- Meyer, A., Rose, D. H., & Gordon, D. (2014). *Universal design for learning: theory and practice*. CAST Professional Publishing.
- Ministry of Education Singapore. (2024). *Students with disabilities admitted to IHLs*. News, Parliamentary Replies.
- Ministry of Social and Family Development Singapore. (2007). *Enabling Masterplan 2007-2011*. <https://www.msf.gov.sg/policies/Disabilities-and-Special-Needs/Pages/default.aspx>
- Ministry of Social and Family Development Singapore. (2012). *Enabling Masterplan 2012-2016*. <https://www.msf.gov.sg/policies/Disabilities-and-Special-Needs/Pages/default.aspx>
- Ministry of Social and Family Development Singapore. (2016). *3rd Enabling masterplan 2017-2021*. <https://doi.org/10.15713/ins.mmj.3>
- Ministry of Social and Family Development Singapore. (2022). *Enabling Masterplan 2030*. [https://www.msf.gov.sg/docs/default-source/enabling-masterplan/emp2030-report-\(final2\).pdf](https://www.msf.gov.sg/docs/default-source/enabling-masterplan/emp2030-report-(final2).pdf)
- Sahin Izmirlı, O., & Kirmaci, O. (2017). New barriers to technology integration. *Eurasian Journal of Educational Research*, 72(2017), 147–166. <https://doi.org/10.14689/ejer.2017.72.8>
- Sanger, C. S. (2020). Inclusive pedagogy and Universal Design approaches for diverse learning environments. In C. S., Sanger & N. W., Gleason (Eds.), *Diversity and inclusion in global higher education: Lessons from across Asia* (pp. 31–71). Palgrave Macmillan. <https://doi.org/10.4324/9781315797885>
- The Public Sector Bodies (Websites and Mobile Applications) Accessibility Regulations 2018 (2018). <https://www.legislation.gov.uk/uksi/2018/852/contents/made>
- Tyler, I., & Slater, T. (2018). Rethinking the sociology of stigma. *Sociological Review*, 66(4), 721–743. <https://doi.org/10.1177/0038026118777425>
- United Nations. (n.d.). Education - *United Nations Sustainable Development. Sustainable Development Goals*. Retrieved February 4, 2019, from <https://www.un.org/sustainabledevelopment/education/>

- United Nations. (2006, December 13). *United Nations Convention on the Rights of Persons with Disabilities*. https://treaties.un.org/doc/Publication/CTC/Ch_IV_15.pdf
- Warnes, M., & Williams, J. (2018). Reflections on delivering online digital media courses: Learning from the learners. *Conference: 10th International Conference on Education and New Learning Technologies*, 154–162. <https://doi.org/10.21125/edulearn.2018.0093>
- Weale, S. (2015, December 3). Government to cut funding for disabled university students. *The Guardian*. <https://www.theguardian.com/education/2015/dec/02/government-to-cut-funding-disabled-university-students-jo-johnson>
- Yap, A. (Ed). (2019). *Perspectives on disability support at institutes of higher learning in Singapore*. Singapore Management University.