Improving the Employee Experience: do Digital Services’ tools meet the needs of our staff?

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## **Abstract**

The global economy’s rapid movement towards embracing digitalisation has encouraged the integration of information technology with human capital for organisation to succeed in a competitive market. Simultaneously, the increase of the neurodivergent population within the workforce has catalysed a conversation around bridging the digital divide by adopting digitally inclusive initiatives at an organisational level. This research study correlates digital inclusivity to the employee experience and overall engagement with the organisation. It explores the accessibility of digital tools and their supplementary services at a local university. The research will draw upon phenomenological data analysis from neurodivergent participants to develop recommendations to improve the accessibility of digital tools and their supportive services.

*Keywords: Digital Divide, Digital Inclusivity, Assistive Technology, Neurodiversity, Employee Engagement, Employee Experience*

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## **Chapter 1: Introduction**

### **1.1 Background of the Study**

Information Technology (IT) connects people, organisations and social systems (Katz & Kahn, 1978). Within an organisation, it drives organisational communication/development (OD) and standard human resource processes (Church et al., 2002). With underlying organizational change efforts remaining the same today as they were 40 years ago, approach and delivery methods differ in the way they encompass technological advancement (Church et al., 2002). Having entered the digital age, the role of IT can be described as ‘vital signs’ in both driving and evaluating initiatives related to organisational and human resource development (Hronec, 1993). To ensure organisations effectively utilise technological resources, digital tools need to be accessible to all types of users. With 20% of the UK working age (16-64) population reporting they were disabled in October-December 2020 (Powell, 2021), digital content and tools need to be developed to fulfil an accessibility criteria to be inclusive of all users. Society’s movement from associating disability with a negative stigma draws upon the notion of using inclusive terminology like ‘neurodiversity’ or ‘neurodiverse’ in lieu of ‘disability’ or ‘disabled’. Digital accessibility for individuals with neurodiverse or physical conditions promotes digital inclusion, achievable through the adoption of inclusive digital practices of compliance to the Web Content Accessibility Guidelines (WCAG) and access to assistive technology in the workplace. The absence of inclusive digital strategies means organisations forfeit opportunities to foster business performances, productivity and innovation (Brownlee, 2019). Furthermore, it can negatively contribute to the employee experience, directly affecting the employees’ engagement with the organisation. To minimise the impact of this issue, organisations need to review the accessibility of their digital tools, the availability of assistive technology offered and identify the areas of improvement in supplementary services provided.

### **1.2 Research Problem**

Initially, organisations were primarily focused on employee engagement which has now evolved into the employee experience, creating a direct correlation between the two notions. In a globally competitive economy, individual talent have a variety of options regarding the workplace they choose to build and develop their careers (Chandwani, et al., 2021). With financial compensation no longer being the sole motivating factor for employees, organisations need to evaluate whether they have a strong company culture, a flexible work environment and offer employees opportunities for career progression. Alongside these factors, HR need to consider technology as an enabler for shaping their employees’ experience (Chandwani, et al., 2021). Industries are beginning to adopt more holistic business models and digital transformation focuses on increasing productivity, value, creation and social welfare within an organisation (Ebert & Duarte, 2018). The economy’s growing reliance on technology support employees in their role-specific tasks, improves their collaboration with colleagues and provides them with a secure environment (Chandwani, et al., 2021). In order to access talent from a wide selection pool and utilise the advantages from digital transformation, organisations need to create a digitally inclusive environment which can contribute to improving the employee experience. Research has shown achieving digital inclusion and participation requires appropriate design and readily available ICT support (Gilbertson, 2015), which is difficult for university institutions due to resource and financial constraints. The theme of accessibility and digital inclusion was considered to be one of the Greatest Challenges of Human-Computer Interaction (HCI) community in 2012 (Ferreira, 2017) and an exploration of these challenges will have OD benefits on the local university and will help to improve the employees’ experience and ultimately, their engagement.

### **1.3 Research Question**

How can a local university improve the digital tools to better meet the needs of neurodivergent employees?

### **1.4 Aims and Objectives**

The focal aim of this study is to identify areas of improvement of the accessibility of digital tools used by employees with neurodivergent conditions at a local university. Additionally, the study intends to outline recommendations to improve the overall accessibility and usability of these explored digital tools. To accomplish the proposed aims of the study, the following research objectives have been formulated and explored in this research study:

1. Research and discover the different neurodivergent conditions of staff across the local university and general knowledge using both primary data and secondary research.
2. Understand and analyse the current IT/digital tools and how they meet industry and legal requirements.
3. Identify areas of improvement with the software and supplementary services chiefly used by staff with these needs.
4. Provide recommendations for the local university on how particular digital tools and services can be improved to better accommodate staff with different needs.

### **1.5 Significance of the Study**

The fundamental significance of the research study is that it will provide in-depth information to the local university on the importance of creating a digitally inclusive environment for its employees. It will provide ways for the local university to effectively support neurodiverse staff, meet inclusivity initiatives on a digital scale and improve the supplementary services offered. The study contributes to literature as previous research studies have not comprehensively explored usability of assistive technology, accessibility of digital tools and effectiveness of supplementary services in the context of a local university. Alongside organisational benefits, employees will benefit from the awareness of the impact of effective digital accessibility in the workplace, engaging them in a digitally inclusive environment. Furthermore, recommendations can be extended to support the local university’s neurodiverse student population which can increase its ranking in national accessibility criteria. Overall, this research is beneficial for academics, local universities, employees and those who engage with the local university.

### **1.6 Motivations for this Study**

The chief motivation for this study derives from the importance of a digitally inclusive workplace. The digital divide refers to an inequality in the access to, use, and impact of digital information and communication technology (ICT) among social agents (Hilbert, 2015). The exclusion of people with disabilities from the online world has been referred to as a key contributor to the ‘digital divide’ (Chadwick & Wesson in Attrill, et al., 2016). As both a technological and social challenge, closing the digital divide at an organisational level requires institutions to implement inclusion strategies in digital spheres.

According to Accenture’s 2018 study, organisations that adopted a digitally inclusive work environment through embracing best practices for employability and supporting people with disabilities, outperformed their peers with higher revenue (28%) and profit margin (30%). Other organisational benefits extend to reduced staff turnover rates, improved staff morale and the ability to draw upon talent from the widest talent-pool for innovation (Stern, 2020). The advantageous impact of digital inclusivity and accessibility improvement for both neurodiverse employees and organisations has been the motivation to conduct extensive research on this area.

### **1.7 Limitations of this Study**

The use of the qualitative research method leads to several discrepancies in interpreting findings of the research study (Basias & Pollalis, 2018). These discrepancies have affected the validity and reliability of the study’s conclusions, contributing to the study’s limitations.

Both primary data and secondary sources were used to collate research for this study. However, the limited time, resources and participation engagement constraints adversely affected the quality of the data collection. Subsequently, the use of both primary and secondary data collection entails limitations to the study.

### **1.8 Structure of this Study**

* **Chapter 1: Introduction**

In this chapter, the researcher has presented a background to the study and the research problem. The chapter continues discussing the research question, aims and objectives, relevance and motivation of the research. Additionally, the researcher has provided the limitations of the study.

* **Chapter 2: Literature Review**

The researcher has reviewed all aspects of the study in light of existing relevant studies to give a detailed explanation of the research question and objectives. Relevant studies have provided insight into identifying the research gap and how this study contributes to filling the gap in the study.

* **Chapter 3: Methodology**

The methodology outlines the chosen techniques, methods and rationale for adopting primary and secondary data collection techniques for the purpose of this study.

* **Chapter 4: Finding and Analysis**

Using the collected data, the researcher has presented the findings in both subjective and objective ways. The discussion has been made to effectively answer each research objective and question involved in the study.

* **Chapter 5: Conclusion and Recommendations**

In the conclusive chapter, the research study has been briefly summarised. Both recommendations to improve digital inclusion and accessibility and for future research studies have been made at the end of the conclusion section.

## **Chapter 2: Literature Review**

### **2.1 Background**

The Fourth Industrial Revolution describes a world characterised by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres (Xu & David et al. 2018, p. 90). The digital tsunami (Bhaduri, 2016) has encouraged organisations to implement and rely on technology and redefine ergonomic structures to streamline their business models in a globally competitive market. Both in education institutions and business environments, digitisation has seen an increased movement between digital domains and offline reality with the use of connected technology to enable and manage individuals’ lives (Miller, 2016). The recent rise of flexible learning and hybrid-working opportunities has meant an increased need for access to internet connectivity, hardware, software and supplementary resources. Organisations’ have made providing employees with access to these tools a mainstream focus however, fulfilling accessibility criteria and effective training and navigation of particular digital tools has remained a secondary consideration (European Agency for Special Needs and Inclusive Education, 2015). By overlooking aspects of accessibility and effective navigation, organisations forfeits a level of digital inclusion, preventing neurodiverse employees to independently participate in all aspects of their work (European Agency for Special Needs and Inclusive Education, 2015).

Disability is a complex, dynamic, multidimensional and contested notion (WHO, 2011, p.3) which within its community is being phased out in favour for inclusive language like ‘neurodiverse’. Neurodiversity/neurodiverse is multifaceted, subjective terminology used to describe the neurological differences in the brain function and behaviour traits (CIPD, 2018). The term’s emergence stemmed from Singer (1999) and Blume’s (1998) research associating it with an ‘ecological society’, defining the term as minority minds being valued irrespective of their niche. Whereas in contrast for Walker (2014), it distinguishes between neurological diversity (genetic diversity) and the neurodiversity paradigm (politicising neurodiversity). Most variations define neurodiversity as a politic replacement for the umbrella term ‘disability’, alternate interpretations suggest that it deviates from medical models and its encompassment of ‘impairments’ and ‘functional ability’ makes it a conformity of social models (Chapman, 2019). According to the Labour Force Survey (2021), the disability employment rate increased by 9.0% from 43.6% [Q2, 2013] to 52.7% [Q2, 2021], indicating the disability employment gap has decreased by 4.8 percentage points in the last 8 years [Figure 1]. The data indicates that not only are more neurodiverse individuals being employed, but more are disclosing to their organisation whether they identify as being neurodiverse. Disability disclosure prompts employers and human resource teams to offer the individual reasonable adjustments or access to assistive technology to support them in their role. Although reasonable adjustments are implemented as a response to disability disclosure, the increase in disability awareness for non-visible impairments should encourage a level of proactivity from employers. The concept of accessible design encompasses the direct access (i.e. unassisted) in the form of reasonable adjustments and indirect access (i.e. assistive technology) within an organisation (Eustice & Felton et al., 2020). As increased accessibility can be beneficial for diagnosed and undiagnosed employees, organisations should take responsibility to provide access to AT and implement reasonable adjustments as an act of anticipatory duty (Eustice & Felton, et al., 2020). Anticipatory duty ensures all aspects of the onboarding process and the working environment are catered in anticipation for the needs of a neurodiverse or physically disabled person (The Equality Act, 2010). Furthermore, it promotes and standardises digital inclusion within the workplace. Digital inclusion is widely defined as being the ability of individuals and groups, to access and use information and communication technologies (Ragnedda and Mutsvario, 2018). It primarily encompasses the idea of the internet, software and hardware being accessible irrespective of the individual’s personal background (i.e. social class, disability, education status or even location). However, the relevant content and services; training and digital literacy (Ragnedda and Mutsvario, 2018) to help navigate digital tools are also vital in achieving digital inclusion. On a national or local level, digital inclusion can be achieved through social outreach programmes, free access to technology in public libraries and funding for students from low-income households. On a global scale, international organisations can help raise awareness through marketing and contributions to public events. Local and global scales ensure that communities have access to technology but in organisations where all employees are provided with basic access to internet, hardware and software, it is the navigation and supplementary tools are needed to achieve digital inclusion.

On an organisational level, the three main components of having digitally inclusive values are:

1. Access to assistive technology
2. A process for implementing reasonable adjustments
3. Tools to help navigate technology and software

(Resta, Laferriere, McLaughlin et al., 2018 in Campbell and Willems, 2019)

Without these three components, organisations are unable to guarantee that the use of digital tools are beneficial for all employees as a deficiency of one of these components means digital tools are not inclusive for neurodiverse individuals compared to neurotypical ones.

### **2.2 Legal Requirements**

Digital inclusivity is a concept derived from a moral duty but there are legal requirements and industry standards that exist to ensure organisations are creating applications, web content and digital tools that are accessible and inclusive.

The Equality Act 2010, protects individuals from being discriminated against based on any of their protected characteristics, including having a disability. Disclosing a disability to an employer’s remains optional in the UK, disclosure enables employers to provide individuals with reasonable adjustments. Equality Law recognises reasonable adjustments as being action of duty to remove, reduce or prevent the obstacles a disabled worker or job applicant may face, where it is reasonable to do so (Equality and Human Rights Commission, 2019). It stipulates that employers only have to make adjustments where they are reasonably aware of the person’s disability and the adjustments made are dependent on the size of the organisation as ‘reasonable’ is subjective terminology (Equality and Human Rights Commission, 2019). The unspoken stigma associated with requesting reasonable adjustments in the workplace can deter individuals from disclosing a disability and receiving adjustment which in turn can make it difficult for them to perform in their role. To combat this issue, employers should action providing reasonable adjustments as an anticipatory duty; by ensuring all processes and aspects of the work environment are created in anticipation to accommodate people with neurodiverse or physical conditions. Individuals are encouraged to disclose their disability to an employer at any point during their employment, but are more likely to disclose a disability during the onboarding process or if they receive a later diagnosis during their employment. At the recruitment stage, employers are expected to make reasonable adjustments for job applicants ranging from physical changes, environmental and provision of additional resources. Physical or structural changes include providing a ramp or moving furniture to accommodate a wheelchair user (Equality and Human Rights Commission, 2019) or changing the interview location to a ground floor room. Environmental changes could extend to dimming lights to better suit someone with epilepsy or reduce sensory overload for people with autism and ADHD. Employers can provide additional resources during the interview or assessment centre process that can support individuals with additional needs. One example is providing alternative formats of assessment test papers and task information in audio, braille or large print versions to allow candidates to present their answers using an alternative method (Simpson, 2014). Another example is bringing an interpreter into interviews to translate questions and answers in sign language for people with hearing impairments. By adopting these inclusive adjustments for candidates during the recruitment process, employers widen the recruitment scope to ensure applicants are provided with equal opportunities to perform without being significantly disadvantaged. Post-recruitment, employers have a continued duty to provide reasonable adjustments throughout the individual’s employment. Some of the adjustments made during the recruitment process can be replicated as a long-term modification in the workplace. One adjustment can include relocating employees from inaccessible buildings to working on ground floors or transferring the individual into a new role or department if no suitable adjustments can be made (Equality and Human Rights Commission, 2019). Adjustments can also come in the form of flexibility within the role, line managers can approve employees having additional time off to enable them to have rehabilitation. Further flexibility can be demonstrated through differing training opportunities, exemplary through longer training sessions for employees with mobility conditions or providing more comprehensive guides to help navigate processes or software. These adjustments can be provided at various stages throughout employment and regular 1-2-1 meetings between line managers and neurodiverse staff help to ensure adjustments evolve with the individuals’ needs.

Human Resource/People Teams have a duty to ensure the recruitment process and employment experience is accessible for people with different needs to ensure a level of equity between all candidates and employees. Whilst some adjustments are specific to the individual, employers should ensure all possible blanket adjustments are in place to minimise the employee’s need to disclose a disability or request adjustments. In addition to providing physical and environmental adjustments, organisations have a responsibility to ensure their digital content is accessible in line with the Web Content Accessibility Guidelines (WCAG). The guidelines outline a single shared standard for web content accessibility that meets the needs of individuals, organisations and governments internationally (WC3 Web Accessibility Initiative, 2022). The WCAG is primarily intended for web content developers, web authoring tool developers, web accessibility evaluation tool developers (WC3 Web Accessibility Initiative, 2022) and are organised under the 4 key principles; perceivable, operable, understandable and robust. Each guideline is categorised under a testable success criteria at three levels A, AA and AAA which determine the web content’s ‘conformance’ to the guidelines (WC2 Web Accessibility Initiative, 2022). The guidelines include several resources that different stakeholders within the scope of web developing use and adhere to. Web content developers use a 2.1 and 2.0 technique list to help develop accessible web content using specific examples of what are sufficient, advisory techniques and failures to match with the content. Web accessibility evaluation tool developers use the test rules documents to help evaluate digital tools accessibility during test runs before the tools are launched to users. Using these checklists ensures that developers can target and resolve any accessibility issues in the software, prior to real-user testing phases. These test rules checklists are useful during quarterly or annual software audits to ensure that the implementation of new features does not impact existing features and their functionality within the realm of accessibility.

### **2.3 Assistive Technology and Accessibility Features**

The first adaption of assistive technology and universal design is dated back to the design of effective weaponry for World War II, initiating studies of how humans interact with technology -the birth of ergonomics (Mueller, 1998, p38.). Ergonomics moved from designing products manufactured during post-World War II America, specifically suited for soldiers (i.e. young, fit men). Instead ergonomics had developed into a universal design movement that strives to fit the general population, being mindfully inclusive of elderly and neurodiverse people. Assistive technology (AT) categorises any tool, equipment, system or service that has been primarily designed to help develop, maintain or improve a person with a disability, to better function in all aspects of their life (Encarnação, Azevado et al. 2013). Additional support from AT can be required in learning, employment and social inclusion to supplement individuals functionality. A WIPO report identified the patent filings in assistive technology surge with 17% per year, a threefold of the yearly surge of all technologies (2021) highlighting the demand for developing new AT is rapidly increasing. The growth of exploration in the field of AT normalises its use and promotes inclusivity of AT users in the educational, professional and social environments. By outsourcing and integrating AT in these environments, it supports users in overcoming barriers related to stigma, prejudice and relationships with new technologies whilst simultaneously demonstrating a need for AT users’ abilities. The appropriateness of an assistive device is measured by the of functional limitation is overcomes in relation to the user’s needs (WIPO, 2021). As a form of universal design, it supplements existing structures and technology to help elderly, physically disabled and neurodiverse people without hindering neurotypical people from using the resources and technologies. AT is a type of reasonable adjustment as organisations can purchase additional software or hardware to help support individuals who disclose a diagnosed condition. However, in fulfilling an anticipatory duty, larger organisations particularly universities, are providing all students and staff with access to basic assistive software, regardless of disclosure. In order to develop recommendations to improve existing software, an exploration of the contemporary software available, is imperative to understand the level of development assistive technology has reached. Currently, there is a wide range of contemporary assistive software tailored to meet the needs of specific neurodiverse conditions, which can be used alongside work-related software or programmes.

Dyslexia is a common learning difficulty that mainly causes problems with reading, writing and spelling and it is ‘estimated that every 1 in 10 people in the UK has some degree of dyslexia’ (NHS, 2022). ‘Dragon NaturallySpeaking’ is a speech recognition software that transcribes the user’s dictation instantly (Nuance Communications, 2022) and is considered supportive for dyslexia. As well as allowing the user to dictate into documents, the software also lets the user control their device with their voice. Enabling Dragon removes the process of writing and spelling replacing it with the action of dictation and transcription and reduces the need for reading back over texts by narrating the text back. It functions over administration systems (i.e. Salesforce, GFS etc), course specific software (i.e. engineering applications) and built in computer programmes, making it an versatile programme suitable for different users in a single organisation. Whilst Dragon software is a leading speech-text programmes for professional environments, ‘Texthelp’ is recommended for dyslexic students to use. It contains features that supplement the learning process by creating vocabulary lists with images to make revision materials more visual. Another feature is the audio maker that converts selected text into an audio file and automatically downloads creating an additional learning material that eliminates the process of reading and writing (Texthelp, 2022). ‘OpenDyslexic Font’ is a typeface designed against some common symptoms of dyslexia. The typeface includes regular, bold, italic and bold-italic styles and is free to download and use across a device (OpenDyslexic, 2022). The letters have heavy weighted bottoms to indicate direction and help users with dyslexia to quickly recognise the letter and prevent their brain from rotating them around. Typeface programmes work well paired with screen changers that help change the contrast of the screen’s colours making text more visible against certain backgrounds. Simultaneous to being assistive to people with dyslexia, screen changers are also assistive to people with autism. Whilst the traits of a neurodivergence can differ between people, one of the common symptoms of autism is sensory overload stemmed from bright lights or loud noises (NHS, 2022). The ability to use screen changers or change the typeface allows the user to reduce the light intensity from the screen and focus on the text that is in an easy-to-read font.

Another common trait of autism is finding difficulty in interpreting meaning from what people say and do. This makes it hard to understand how people think or feel which means individuals need more clarity or time to help understand information better (NHS, 2022). In a role where time-sensitive tasks require a fast turnover, assistive software like ‘Claroread Pro’ is useful to support readability and understanding. Similar to and supportive of Dragon software it enables the user to dictate but its specialist echo back feature automatically narrates the text back to you to allow the user to check that it has been recognised correctly (Claro Software, 2022). The echo back feature ensures that the user is receiving and sending clear information whilst minimising AI error in the dictation. Another key feature of Claro supportive of autism is the pictures in prediction option whereby smaller picture icons are included next to the word in the predictive text bar to help the user visual the meaning of the word (Claro Software, 2022) helping them to understanding the way in which the word choice will be perceived by recipients in the context of the work. Similar to autism are the traits of attention-deficit/hyperactivity disorder (ADHD), a behavioural condition that makes people with ADHD seem restless, act on impulse and make it difficult to concentrate (NHS, 2022). Assistive technology to help manage ADHD traits in the workplace extend to both hardware and software, which can be used as complimentary to each other. In office spaces that encourage hot-desking or have no designated quiet zone, people with ADHD or autism can experience sensory overload or become restless and easily distracted. One assistive technology implementation is the use of noise-cancelling headphones paired with software like ‘Headspace’ (2022), that use science-backed meditation and mindfulness tools to help manage mental health. Headspace has proven to reduce stress by 14% in 10 days (Headspace, 2022) helping the user to relax, ground themselves and refocus. ‘Headspace Business’ offers brown noise and focus playlists to help users whilst working as well as access to meditation, sleep sounds and movement motivation. The pairing of both Headspace and noise-cancelling headphones helps the user to disconnect from the environment distractions and help manage their attention onto a task. Alternatively, reliance on software like Headspace can result in the user becoming hyper focused on one task which can result into losing track of time and imbalance of workload. Organisations overlook the accessibility features and applications pre-installed in Windows and iOS devices that can be adopted and used as assistive technology. Both Windows and iOS include timer applications, to-do checklists and sticky notes which are useful for users who need to micromanage their time for specific tasks, or need one contained place to list their tasks and upcoming deadlines. Utilising these tools and raising awareness of their functionality within organisations can minimise the financial and temporal cost associated with outsourcing external assistive technology.

As well as accommodating individuals with neurodiverse learning differences, organisations have a responsibility to accommodate individuals with physical conditions. ‘Zoom Text’ and ‘Jaws Pro’ are designed primarily to support people with visual impairments but can also be beneficial to older users with deteriorating eyesight or for users who prefer reading from larger text (i.e. to focus on the line they are reading). Despite both pieces of software’s fundamental purpose being to increase text size, Zoom Text is a magnification programme which offers enlargement levels up to 60x, typically used by people with low vision. Whereas Jaws Pro allows users to navigate through digital content through a speech or braille output making it suitable for people with almost no vision. Irrespective of the differences, Zoom Text and Jaws Pro have recently been adopted into a new package; ‘Fusion’ (2019), enabling the user to run the two separately or together at the same time creating customised accessibility to browse digital content (Zoom Text, 2022). The merging of the two programmes is widely beneficial for large organisations, whose users have varying levels of visual impairments, as it offers a range of choice and minimises the need to purchase multiple software.

Although software has been developed to support specific needs, overarching assistive technology is useful for individuals with differing or multiple neurodivergent needs. Applications like ‘XMind’, ‘Mindview 6’ and ‘Trello’ are platforms that provide a digital space for users to mind-map ideas in individual or collaborative spaces. XMind is a visual mind-mapping tool which is best suited for collaborative idea forming. The collaboration aspect is prominent in the way it supports different design layout and structures in a single brainstorming page to fit different users that work in one team. This flexibility encourages digital inclusivity by ensuring all users are able to easily access the information discussed. Furthermore it forms an auto-generated slideshow layout of the user’s ideas to help manage and view the ideas in a professional format (XMind, 2022). Trello focuses more on supporting the user’s organisation of ideas by creating boards to help manage ideas, useful for users with ADHD that need to clearly define different task objectives, isolate the ideas and view them separately. Trello further organises the ideas by categorising boards and offering suggestive layouts depending on the type of task. Adopting a software like Trello within an organisation or an ever-expanding team ensures that a default format is used by all users helping individuals with ADHD or autism feel well-equipped to repeatedly navigate the content.

Professional organisations purchase and utilise various software to help support their employees and whilst higher education institutions are part of that body, universities use education specific platforms for communication between students and staff. Digital platforms like Aula, Moodle, Canva etc are used to upload educational content from lecturers, and administrative updates from the university and enable students to take online assessments and upload assignments. These platforms are one of the initial contact points students have with universities and later they serve as one of the primary digital hubs staff use to communicate changes and course information to students. As a prominent digital platform, institutions need to ensure that as these platforms develop, they continue to remain accessible in both their new and pre-existing features. One contemporary digital tool where the goals of inclusivity and accessibility are at its forefront is ‘Blackboard Ally’. Blackboard is a product that is designed to integrate seamlessly into the existing learning management system (i.e. Aula, Moodle and Canva) to focus on making digital course content more accessible (Blackboard, 2022). Over 800 institutions use Blackboard globally to target and resolve the common user experience (UX) issues of learner engagement, academic effectiveness and education insight, found in learning management systems. Within the umbrella of Blackboard, it has multiple subsidiaries each designed to target a specific function of a learning platform. Blackboard Learn is a fully responsive interface (Blackboard, 2022) with built in accessibility features and plagiarism checkers. As a fully responsive tool it allows individuals to successfully access the course materials from different devices and use zoom features to help with visibility. Whilst other platforms are still developing into central ecosystem systems, Blackboard Ally is a widely used contemporary system that already functions as a central learning management system. Furthermore, its internal accessibility checker measures the content being uploaded to ensure that it meets the Web Content Accessibility Guidelines, prioritising digital inclusivity. The adoption of Blackboard Ally enables digital inclusivity to be constantly monitored and encourages the institution to fulfil their anticipatory duty of ensuring software accessibility.

Outsourcing assistive programmes promotes digital inclusivity for different users but it can be financially ineffective for smaller organisations or organisations with a marginally low number of disclosed users. In organisations like universities where internal development of software is common, engineers should strive to develop and enable accessibility features within these applications. In the Microsoft products, different accessibility features are offered to ensure the software meets the needs of different neurodiverse conditions and physical disabilities. Microsoft Word has built-in dictation, spell-check and word replacement features to help dyslexic users with writing and spelling difficulties. It also has a ‘find’ function where users can type the beginning of keywords to locate them easily in the document, saving time with reading through the text. Expanding to Windows software, the visual icons in Windows settings eliminates the need to recognise letters in favour of icon association. Windows also includes colour-changing screen options, customisation of text size and focus assist applications that blocks alerts and notifications to minimise distractions for people with ADHD. Alongside accommodating for neurodiverse conditions it has accessibility features designed to support physical disabilities. The narrator feature that provides simple navigation and audio descriptions (Microsoft Windows Accessibility, 2022) to easily interact with everything on the screen with either a keyboard or preferred braille device supporting visually impaired users. Additionally, using ‘eye tracking enabled cameras’ Microsoft allow people with dyspraxia or arthritis to ‘control the launch pad with their eye movement’ to reduce the clicking action of using a mouse (Microsoft Accessibility, 2022). Microsoft is the leading frontrunner in software and cloud and it maintain the backbone of IT operations globally, making it a technological staple in most organisations. The variety of built-in accessibility features and resources to help navigate these features makes Microsoft exemplary tool of digital inclusion.

Digital inclusion is achievable through a combination of implementing external assistive software and internally developed applications including accessibility features. Whilst it is considerably easier to purchase external software, developing accessibility features within internal applications is a more cost-effective and inclusive option for larger organisations to develop. Accessibility features are a mandatory provision developers need to consider when creating and managing applications as it there are digital accessibility guidelines that software and web content need to legally adhere to.

### **2.4 HR Involvement in Achieving Digital Inclusion**

The practice of Human Resource Management (HRM) has developed since the earliest roles of Personnel Management in the 1970s whose job was to negotiate employee relations with unions (Osibanjo and Adeniji, 2012). Trade Unions are external organisations formed by workers, that work for the common interest of workers, targeting issues like pay, working conditions, environments and benefits (The Economic Times, 2022). With Personnel Management focusing heavily on negotiating against unions, barriers between management and employees formed impacting productivity levels resulting in the organisation goals becoming unachievable (Osibanjo and Adeniji, 2012). The new concept of HRM moves away from solely being negotiators but having ‘tasks majorly concerned with the administrative activities’ of the organisation [i.e. recruitment, reward system, payroll, promotion, disciplinaries etc] (Guest, 1987 in Osibanjo and Adeniji, 2012). Unlike Personnel Management, HRM is a distinctive approach to employment management (Storey, 1995 in Osibanjo and Adeniji, 2012) which encompasses Guests’ (1987) four key dimensions:

1. Commitment- employees achieving organisation’s goals
2. Flexibility- employees being willing to adapt within the organisation’s structure
3. Quality- high level of employee performance to maintain organisation standards
4. Integration- matching HR strategies to the needs of the business strategy

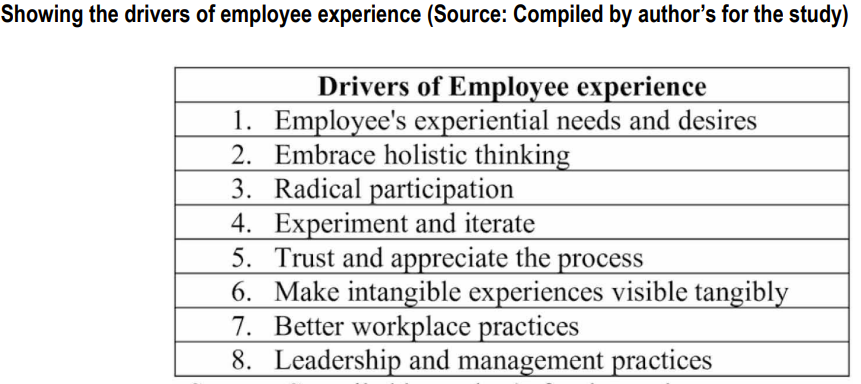
Boxall and Purcell’s (2000) overarching definition of HRM defines it as including *anything* and *everything* associated with the management of employment relationships in the firm, encompassing a wider range of issues comprising of policies, processes and employee relations. Ultimately, HR teams work with employees by managing their roles and productivity to ensure the organisation’s business goals are met.

A crucial role within HR is managing employee engagement (EE) as it is known to help ensure the individual’s well-being, performance and in turn, a firm’s competitive advantage (Kim and Kolb et al, 2013). Kahn (1990) defined personal engagement as the ‘harnessing of an organisations’ members’ selves to their work roles’ suggesting that engagement is demonstrated through a physical, psychological, cognitive and emotional expression towards their professional roles. Kahn’s variation of engagement hones in on the theory of psychological safety in the workplace; a notion that describes people’s perceptions of the consequences of taking interpersonal risks in particular contexts [i.e. the workplace] (Edmondson, 1999 in Edmondson and Lei, 2014). Psychological safety evaluates that individuals are more likely to engage emotionally and psychologically with their professional role, depending on the level of positive psychological association they have with various factors within the workplace. Varying between employees, some factors that contribute to psychological safety extend but are not limited to:

* Sense of fulfilment within their role (i.e. career progression, meaningful work)
* Managerial actions and availability (i.e. treatment, support and training resources)
* Safety within the workplace (i.e. physical structure, environment and protection)
* Organisation structure (i.e. success of firm, climate of trust, dynamic work environment)

(Edmondson and Lei, 2014)

Initiating a positive psychological association with these different factors enables the individual to feel safe within the workplace, consequently bettering their engagement with their role. As a result of increased employee engagement, organisation productivity increases improving the rate at which business goals are achieved. Employee engagement is considered one of the most important talent development initiatives in the knowledge-based economy (Kwon and Park, 2019) as its study on affecting factors interlinks with drivers of the employee experience (EX). The employee experience is a sum of all interactions occurring between employees and the organisation which are influenced by the physical space used by employees, organisation culture and the tools and technology provided by the employer (Morgan, 2017). According to Itam and Ghosh’s (2020) study, the drivers of employee experience are:



[Figure 2: Showing the drivers of employee experience (Itam and Ghosh, 2020)]

The overlapping driving factors of EE and EX primarily focus on the physical experiences of better working conditions or a positive work environment in creating a sense of psychological safety for the individual. Other coinciding factors extend to the human experiences of positive leadership/management practices, sense of fulfilment within the role and the tangibility of experiences to encourage the individual to develop meaningful interpersonal connections to their work. Researchers have concluded that ‘engagement’ and ‘employee experience’ can be used interchangeably but practitioners argue the two terms differ with the idea that the employee experience creates an engaged workforce (Itam and Ghosh, 2020). To centralise employee engagement is to prioritise the value placed on improving the employee experience. Having acknowledged the factors of EE as being directly related to developing the employee experience, the use of the Employment Life Cycle (ELC) model is critical in identifying the key stages at which an employee engages with a company but also to measure the effectiveness of the employee experience.

[Figure 3: The Employment Life Cycle]

These 6 distinct stages indicate the most important stages that an employee engages with their employer. The ‘attraction’ stage highlights how the employee views the company before associating with it, if the employee has a positive perception they are likely to further engage and apply for a job position. At this stage, employers have a duty to ensure their organisation is professional appealing through the layout of job descriptions, online and media presence. The ‘recruitment’ and ‘onboarding’ stages include the first interactions between the employee and the organisation. During recruitment, employers have a duty to ensure employees have equal opportunities to successfully progress the recruitment stage. Similarly, employees should receive all the necessary resources and information to navigate their employment at the company, whether a particular process or piece of information is immediately required or not. The ‘development’ stage is critical to ensure that the employee feels as though these equal opportunities experience during the recruitment stage are replicated during their employment period. HR are primarily responsible for ensuring the employee is efficiently achieving business goals, they should also manage the employees’ engagement to guarantee their human investment. This is crucial for reaching the ‘retention’ stage, if an employee is having a negative employment experience, they are likely to ‘separate’ from the organisation to seek a better experience elsewhere. With these being the key stages an individual measures their experience with a company, it is vital employers evaluate the way they engage with their employees, using inclusive methods and processes to meet their needs.

### **2.5 Theories**

There are various theories that link to employee engagement and the digital divide, including:

##### **2.5.1 The Social Exchange Theory**

The Social Exchange Theory (SET) was initially used to illustrate humans’ interactive relationships in attitudes and behaviours (Twenge et al., 2008). This concept was later extended to suggest the theory could be regarded as the foundation of the relationship between the organisation and its members (Kataria et al., 2013). The theory is primarily driven by self-interest with a social exchange only occurring if participants conclude the interaction as being self-beneficial. On the basis of this theory, Blau (1964) explains employees will try to achieve a balance in the exchange relationships in a mutually beneficial way and maintain a positive long-term social exchange relationship at work. In relation to the present study, organisations that provide promise rewards, resources and justice, have employees who generate a high level of trust, increasing their willingness to work and engagement towards the job and organisation as a whole (Masterson and Taylor, 2000).

##### **2.5.2 Van Dijk’s Theory**

The core of Van Dijk’s theory posits that inequalities of personal position and background result in inequalities in resources for the individual, which in turn lead to inequalities of access. Consequently, these inequalities result in disparities in participation by the individual in society (Pick & Sarkar, 2016). The positional characteristics of age, gender, intelligence and health are viewed as indicators that influence technology access and use within the scope of the digital divide. The Van Dijk theory considers these characteristic as contributors to the inequalities found in digitally-related resources for persons. The present study recognises these inequalities as being an organisation issue impacting those with differing needs rather than an issue caused by these differing needs. Whilst there are contradictions between the theory and the present study, both highlight detriments of digital inequality and emphasise the need for digital resources to become more inclusive in order to close the digital divide.

### **2.6 Gaps in the Literature**

The new paradigm of human resource management addresses the three dimensions of employee experience as being the physical, human and digital experiences (Itam and Ghosh, 2020). With the rise of and reliance on digitalisation, organisations are beginning to increase the effort placed on recognising the role of technology in automating workload but also enhancing employee experience. A University Group is an umbrella term for a university and all of its owned and governed locations. A local university’s 2030 Group Strategy aims to engage its employees by reviewing and sharing their experiences, providing its people with the opportunity to use their voice to inform and influence the Group. Within the scope of its working practices and digital capabilities, their People Strategy embraces the adoption of immersive and experiential technologies, the automation of business processes and the utility of data analytics to ensure technology meets external regulatory and legislative requirements. As digital opportunities continue to expand, neurodivergent individuals are often ‘lost in conversation about broadening participation’ (Wille and Sajous-Brady, 2018) in digitalisation, making the need to provide accessible technology an overlooked aspect of the digital experience. Having examined the literature, it is evident that educational institutions and organisations are beginning to place significance on creating digitally accessible environments. However, there is a focus deficit on ensuring the current level of accessibility of existing software and its supplementary tools actually meets the needs of neurodivergent employees. Currently, there is a gap in the literature when studying the need for organisations to adopt an anticipatory duty of providing assistive technology and tailoring training and supplementary guides to better support neurodiverse individuals. Therefore, this present study explores these areas to minimise the gap found in the literature.

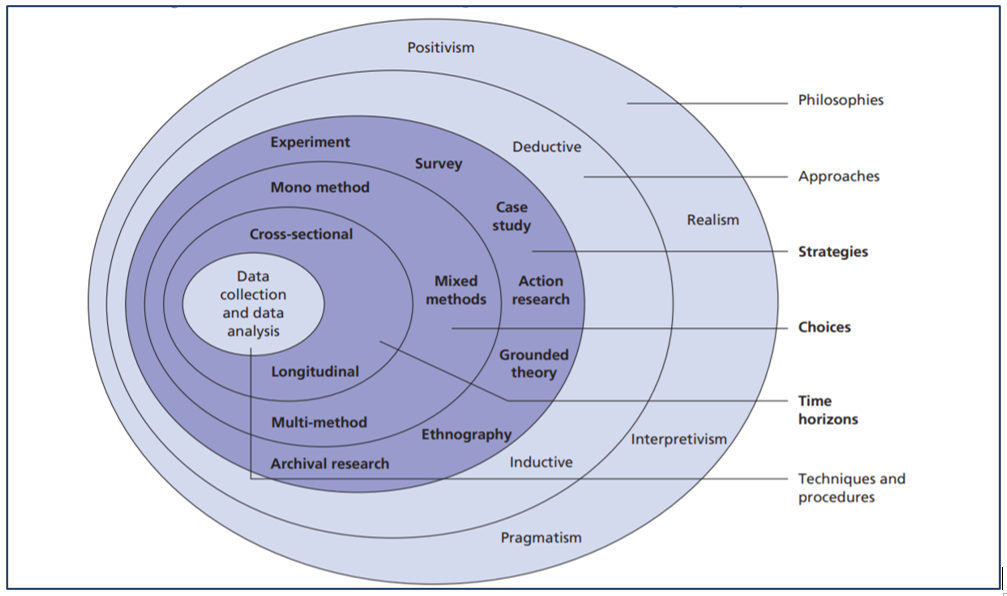
### **2.7 Summary**

Whilst there is a plethora of literature that explores accessibility to achieve digital inclusion in universities, the literature’s focus is primarily focused on improving the students’ experience. Therefore, this study will use case studies based around the employee experience of a local University Group.

## **Chapter 3: Research Methodology**

### **3.1 Overview**

This study aims to investigate and provide recommendations on how to make existing digital tools more accessible at a local university. This chapter covers the research techniques of philosophy, approach and design to assess the practices of accessibility and digital inclusion. Furthermore, it presents the data collection technique, tools and an inclusion and exclusion criteria used to gather the research data. Finally, it covers the ethical considerations needed to conduct this study. Research is the systematic gathering and analysing of facts to better out understanding of a particular issue of interest (Rojon and Saunders, 2012). The research onion serves as a guide for the structural organisation of this chapter:



[Figure 4: The Research Onion (Thornhill, Saunders and Lewis, 2009)]

### **3.2 Philosophy**

Research philosophy describes the development of knowledge in a particular field (Saunders et al, 2019). To ensure all research is both valuable and thorough an exploration of the Ontological and Epistemological perceptions of research are vital. Ontology encompasses the realities you encounter in your research whereas epistemology studies human knowledge (Saunders et al, 2019). Research studies can be conducted using either a positivist or interpretivist philosophical approach (Coy, 2019). Positivist philosophy takes the view that knowledge exists external of what is being studied and requires an objective perspective. Whereas an interpretivist philosophy emphasises the influence social and cultural factors can have on an individual. The adoption of one philosophy in preference to another can inevitably shape and influence a researcher’s approach to different stages of the research process and how they interpret their findings (Crotty, 1998), whether they are consciously aware of it or not (Burrell and Morgan, 2016). One advantage of an interpretivism is the focus on ‘differentiating humans from physical phenomena because they create meanings’ (Saunders et al, 2019). The objectivity of positivism makes it difficult to analyse a study based on human experiences and therefore using the interpretivist strand of phenomenology is more appropriate. Phenomenology based research takes both the researcher’s and the participants’ interpretations into account during the analysis process (Pietkiewicz, 2014). This study focuses on developing recommendations to improve existing digital tools to make them more accessible for the needs of neurodivergent and physically disables individuals. Within this scope, analysing neurodivergent participant’s lived experiences and their recollection and interpretation of those experiences is vital (Saunders et al, 2019) in developing improvements to the digital tools.

### **3.3 Research Approach**

According to Ketokivi and Mantere (2010) the two approaches to research are; deductive and inductive. An inductive approach uses research questions to narrow the scope of the study with a focus on exploring new phenomena or new perspective of existing theories, typically in qualitative research. Whereas, a deductive approach begins with a hypothesis aiming to test theory, typically in quantitative research (Gabrielle, 2013). The study intends to draw conclusions on ways to increase accessibility of digital tools by observing patterns across the recounts of participants’ experiences with using the technology. Furthermore it requires an analysis on human behaviour during these recollections. Since this research focuses on analysing human patterns and behaviours, an inductive approach enables the data to be investigated and used as a basis to form a theory (Kumar, 2018). Using the inductive approach to fulfil the research objectives ensures that new perspectives on existing theory are developed.

### **3.4 Research Design**

Qualitative and Quantitative are the two types of research designs used by researchers in any given study. Qualitative research refers to research about different social, cultural and environmental factors that influence an individual’s experience, behaviour or emotions (Strauss and Corbin, 1990). Researchers lean more towards defining it as an umbrella term covering an array of multi-method interpretive research techniques (Van Maanen, 1979). The opposing design of quantitative research emphasises quantification in the collection and analysis of data (Bryman, 2012) reliant upon measuring empirical variables existing in the social world. Unlike quantitative research, qualitative research has a flexible structure encouraging participants to determine what is consistent for them, resulting in complex issues being easily understood (Flick, 2011). In the case of this study, participants will unfold and divulge into their personal experience with digital tools as a result of their neurological conditions and determining the sufficiency of the accessibility tools requires subjective freedom. Therefore, a qualitative approach is suitable to ensure an in-depth analysis of participants’ experiences can be made to increase technical accessibility in the workplace.

### **3.5 Data Collection Mode**

Data collection plays a crucial role in the analysis and the different methods used to gather information fall into either primary or secondary data (Douglas, 2015 in Ajayi, 2017). Primary data is collected for the first time by the researcher whereas secondary data refers to already produced contribution of authors and scholars in the literature (Ajayi, 2017). Secondary data can be accessed through peer-reviewed journal publications, scholarly articles, books, newspapers and governmental reports. The act of directly gathering new information from individuals is considered a form of primary data collection. Secondary data is easily accessible to the researcher through online research databases and libraries making their retrieval time and cost efficient (Coy, 2019). Furthermore, secondary data allows researchers to develop new insights on existing analysis without going through the process of sourcing and interacting with participants. However, some research studies use a combination of primary and secondary data to gain dual insights on a study (i.e. understanding the existing literature contribution in line with new data for the study). To understand how to improve existing technologies, there needs to be an understanding of contemporary technology that is available in the industry, therefore, this study will employ both primary and secondary data collection techniques.

### **3.6 Data Collection Tools and Sampling**

In this study, the primary data collection method of qualitative interviews was used to directly obtain information from participants. Qualitative interviews allow for in-depth analysis of a research area and are useful in developing insights which can be generalised into patterns (Silverman, 2020). According to Ajayi (2017), interviewing is primarily used to gain an understanding of the underlying reasons and motivations for people’s attitudes, preferences or behaviours. In this present study the researcher conducted a structured interview, using eight questions based on various themes relevant to the research interest, among neurodivergent employees across a local university. Questions were devised specifically to gain insight on their experience using digital tools and whether the tools meet their additional needs:

*Sample Question 1: Can you tell me about any issues you face with the digital tools you use, specifying particular software?*

Other questions were devised to encourage discussion around supplementary services offered and how they currently accommodate their additional needs:

*Sample Question 2: Are you currently aware of the supportive resources and software available (i.e. AppsAnywhere software)?*

*Sample Question 3 Are you familiar with the process of accessing reasonable adjustments here at the university?*

These insights would be used to formulate recommendations on how to improve the accessibility of these digital tools. The data for the interview was collected from a total of 7 participants, including 2 faculty staff, 2 administrative staff members and 3 employability coaches. In regards to secondary data, the study has relied on peer-reviewed publications, books, local government and company reports and information from product websites of contemporary technology. Ultimately, a combination of both primary and secondary data techniques was used to analyse the existing digital tools in an education-service industry workplace and formulate recommendations based on interpreting human behaviour and experience.

### **3.7 Data Analysis**

Thematic analysis is a data analysis strategy, a commonly used approach across all qualitative designs (Castleberry and Nolen, 2018). As a method of identifying, analysing and reporting the patterns (themes) found within data, it affords the researcher flexibility and interpretation of open-ended responses (Castleberry and Nolen, 2018). Across the secondary research, the same themes and research areas are explored and the analysis is based on the qualitative techniques of observations and interpretations. The present study uses this thematic analysis technique to address the research aims and fulfil the objectives. This analysis technique is also employed to explore the existing digital tools and accessibility features across the university group.

### **3.8 Search Strategy**

In gathering data for the secondary research for this study, online databases such as Google Scholar, Coventry Locate and Coventry University Group Staff Portal as the chief search engines for publications. Within these engines, keyword searches of “disability in the workplace”, “neurodiversity”, “assistive technology”, “reasonable adjustments” and “digital accessibility” were used to obtain relevant sources.

### **3.9 Limitations of the Data Collection**

The scope of this study’s research extends to both primary and secondary research and there limitations with both research methods. Limitations of primary data collection extends to being a very involved process (Ajayi, 2017) that can be time consuming especially when outsourcing participants. One key limitation with the primary data is the small sample size of interviewed participants. A smaller sample size makes it difficult to justify the suggested recommendations as being apt for all neurodivergent employees across the university group. However, unlike primary data, secondary data collection is used for purposes other than the explored research problem. A limitation for secondary data within the field of digital accessibility is the limited peer-reviewed resources and extensive publications available in databases. Despite these limitations, secondary data will be used to support the understanding of existing contemporary digital tools and the primary data will act as a microcosmic representation for neurodivergent individuals across the university group.

### **3.10 Inclusion Criteria**

This study has used a range of secondary sources that were published between 1964-2022. The secondary data was collected through reliable sources such as; web accessibility reports and workplace policies of the Coventry University Group, legislative guidelines of the WCAG and UK government, assistive technology reports and product launches and scholarly articles and journal publications available to access on authentic websites such as ResearchGate, Sage Journals, Ebook Central. Moreover, this study has only used data that was published in the English Language and was specific to digital accessibility and neurodiversity.

### **3.11 Exclusion Criteria**

The present study excluded any study that was not published in the English Language and had concerns with reliability and authentication. It excluded any study that was not focused on disability and neurodiversity in the workplace or accessing assistive technology. Furthermore, it also excluded publications that provided quantitative insights into the present research.

### **3.12 Ethical Considerations**

Every research study has to abide by ethical principles to avoid unwanted researcher dilemmas (Cacciattolo, 2015), particularly in phenomenological research where participants are recounting their personal experiences. For the primary research design, the researcher included an ethical note in their call for participants announcement [Figure 5]. All interested participants were provided with participant information documents outlining details of the research, how their data was being handled and any risks or harms which may impact their employment. Additionally, all active participants signed consent documents, agreeing to take part in the study and the researcher continuously reminded participants of their right to withdraw from the study. All participants were diagnosed with neurodivergent conditions therefore the researcher provided participants advance access to the interview questions and the option for the interview to be conducted online or in-person to help them feel equipped to provide informative contributions. Unethical research that is carried out usually leaves participants feeling vulnerable and exposed in negative ways (Cacciattolo, 2012). As the interview explored the participants’ experience using digital tools in relation to how it met their additional needs, it was recognised that sensitive topics were likely to be discussed. To minimise any negative exposure felt, the researcher verbally reminded participants of their ability to withdraw and data anonymity and ensured all verbal and written communication consisted of using inclusive terminology when describing their neurodiversity. With secondary data research, the researcher ensured all the data collected is properly cited with references provided for the information used in the study. Furthermore, the researcher ensured that both research design sources were only used for the purpose of this particular research study. Overall, the researcher has carefully considered all the necessary ethical principles needed for both primary and secondary research.

### **3.13 Summary**

This research study has used a qualitative research design based on the interpretivism philosophy and inductive approach. The study is comprised of structured interviews and secondary data collected from academically and professionally reliable publications between a time period of 1961-2022. To analyse and develop recommendations on improving the accessibility of digital tools across the CU group, the study used a thematic analysis technique to explore emerging patterns. To ensure the validity and reliability of the results, the researcher has considered both the limitations of primary and secondary research and the ethical implications of participant anonymity, confidentiality of data and transparency of the cited work.

## **Chapter 4: Findings and Analysis**

### **4.1 Overview**

This chapter intends to present the data collected from the interviews conducted with the 7 employees of the local university group and the relevant secondary sources. Based on the research, the data is presented through three key themes. The first theme explores the staff’s awareness of assistive technology available. The second theme explores usability and accessibility of the explored digital tools. The final theme explores other supplementary issues which impact the individual’s ability to utilise the existing digital tools. The study’s scope was extended to neurodiverse employees across the university group and to both formally diagnosed and undiagnosed employees.

### **4.2 Awareness of Assistive Technology**

The university’s strategy recognised the lived experiences of its people as being central to the Group’s success, defining these experience by the employee’s observations, perceptions and sense of belonging. Despite being diagnosed with the same neurodiversity, people can show different traits of the same condition, resulting in their lifestyle being impacted in different ways. The study includes a mixture of participants who had a long-term diagnosis, were newly-diagnosed or were awaiting a referral as well as a mixture of employees who had recently joined the organisation or were veteran staff [Figure 6]. Regardless of the factors of employment length and diagnosis point, organisations should ensure all employees are aware of the assistive technology available and how to access it as part of the notion to fulfil their anticipatory duty (Eustice & Felton, et al., 2020). Participants who were either newly-diagnosed or undergoing diagnosis as well as being new the organisation, were unaware of the assistive technology (AT) available to use:

*I’m Autistic and I’ve actually only just been diagnosed actually last Tuesday […] I was on the waiting list for four years to get the diagnosis […] I’m, relatively new here too, I’ve only started at the end of May […] No, I wasn’t aware of that [assistive software]. I didn’t know that was a thing […] No one mentioned it to me, this is the first I’m hearing of it […] (Participant B)*

*I’m fairly new in post […] No, nothing, would really welcome that […] and about AppsAnywhere, I’ll be interested to look at that definitely […] and I think that to me is part of the difficulty. There’s a problem with communication because the platforms that they have are all separate […] (Participant D)*

Employees becoming recently aware of their own neurodiverse conditions are possibly unaware of how the use of AT can aid the impact their neurodiversity has on their workplace. However, having newly entered the organisation, these employees are unaware of the AT available, which signals gaps in the onboarding process. One participant signalled to having a poor onboarding and training experience whereby their request for reasonable adjustments to the technology being distributed was dismissed:

*So we were issued with 14-inch notebooks on induction and I immediately went to the team leader and said I’m gonna struggle with this because of tracking and everything we were viewing, and even Deloitte said Salesforce was never intended to be run on 14-inch laptops […] the team leader said, well, that’s what the whole team have been issued with and that’s what you have. (Participant F)*

*When I had my induction instead of kind of doing the steps, it did step-step blur, which for me was no good (Participant D)*

The onboarding process is an opportunity for an organisation to welcome new recruits and ensure they have the knowledge and support they need to perform in their role (CIPD, 2021). Employers that convey an unwillingness towards providing reasonable adjustments during the onboarding signal to new recruits this attitude as being a reflection of the organisation’s employment style (Churchill, 2022). Employees associate a negative stigma with asking for reasonable adjustments or access to assistive technology which can deter them from requesting adjustments later in their employment. This is particularly difficult if employees receive a diagnosis post-recruitment:

*I don’t think I have current access to the tools for me to do my job at the best of my ability because of my learning requirements […] the infrastructure could be supported slightly differently […] I don’t want to be a burden on people (Participant G)*

*I think my boss was trying to get me a better laptop so that read & write would work better […] but that kind of just fizzled out (Participant E)*

*I don’t feel that I could appropriately ask for any adjustments at the moment (Participant D)*

Despite the clear indication of an unawareness of the AT available, there were some participants who were aware of the tools accessible on AppsAnywhere. Participants who knew of the platform’s existence, indicated they unintentionally discovered the software during their employment. Yet, despite being aware of the software’s existence, participants were still unaware of how to use the AT available:

*So, I’ve had a look on AppsAnywhere and I’ve not found any particular software that helps my ADHD […] I think I know about it [AppsAnywhere] because the Adobe software is so important to my job that that’s where I assumed it would be first (Participant G)*

*I have learning disabilities in the family and I suspected it when I got to university […] I know about some of the things on AppsAnywhere, so some of the things that we’ve had to use for our jobs […] But I haven’t explored it […] I just don’t feel like I have the time to learn how to help myself. I’m so busy doing the job and trying to get that done.(Participant F)*

The study indicates that unless an employee’s job role requires them to access software on AppsAnywhere, the likelihood of them being aware of and using the AT on the platform is low. Thus suggesting that there is a direct correlation between the participant’s length of employment and/or their length of diagnosis and their awareness of assistive tools available.

### **4.3 Usability and Accessibility of Digital Tools**

Along with their awareness to access to assistive technology, participants were asked to divulge their experience with using digital software relevant to their job role, and comment on the software’s accessibility. All employees across the university group, regularly access the Staff Portal, a jump-off platform for the Group’s digital ecosystem and whilst it aims to serve as a centralised point, neurodivergent employees find it difficult to navigate.

*I’m overwhelmed by how many different platforms there is for students as a member of staff […] everybody here is institutionalised is I would use the term […] they know exactly what they’re doing because they’ve been here forever. And so I’m coming from a new member of staff perspective (Participant D)*

*The only thing I can think of is actually the site itself […] Staff Portal trying to find an answer to a question, so yeah it’s really hard. […] if you went on Staff Portal and type in the search box, how do I connect remotely? It’s not gonna be the first result […] the results are not resulted by relevance (Participant A)*

*The Staff Portal […] it’s really difficult to find specific things […] I searched for the newer neurodiversity network and I couldn’t find it […] search for an eye test form, couldn’t find it (Participant E)*

Most people with neurodiverse conditions, irrespective of the differing traits, require even greater clarity of communication and information to be provided in multiple formats (CIPD, 2018). The study suggests the Group’s Staff Portal is difficult to navigate due to inefficient filtering for search result features. Furthermore, different tasks require the use of a separate software and without prior-awareness and training, neurodivergent employees become overwhelmed with lack of direction caused by the required use of multiple software:

*[I would like] one piece of software to rule them all […] like one kind of overarching software that let me interchangeably move between different platforms (Participant G)*

Participants further commented on the accessibility of individual software stemmed from the Staff Portal site. The repeatedly mentioned software included; Salesforce, Universe, and Aula.

*I use Salesforce for instance […] it doesn’t connect with the outlook calendar, so I’m having to do like duplication of work all the time […] I don’t like that sort of inefficiency […] but because I’m already kind of working sort of harder to keep up with the reading and the working memory and accuracy […] I guess they have a bigger impact on me […] it’s all kind of added weight on someone whose like neurodivergent. (Participant E)*

*Universe is a nightmare […] Everything is really square and weird little pixilated icons and stuff (Participant A)*

*So you can email out of Salesforce […] It’s chronically bad […] the formatting is very poor […] There’s lots of clicking going on, I’ve got RSI really badly (Participant F)*

Salesforce and Universe are locally-based applications, hold data on the university’s incoming students and the key accessibility issues identified primarily link to the software(s)’ inefficiency. Salesforce requires staff to send out emails to, arrange appointments with and hold updated notes on students. Participants have commented on Salesforce resulting in repetitive actions as the software cannot be synchronised with the Outlook Calendar and Microsoft Teams Calls. This repetitive action causes a duplication of physical clicking which is strenuous for those with physical disabilities, like RSI (NHS, 2022). Manually inputting data into Salesforce and a master Excel spreadsheet, is considered time-consuming and inefficient, especially for individuals with Dyslexia who take longer to read and write (NHS, 2022). Overall, this makes it difficult for equity to be felt between neurodivergent and neurotypical employees.

*It [Salesforce] doesn’t link to Outlook or Teams […] I just find the whole thing so difficult to use and none of us have had any real formal training (Participant F)*

However, an exploration of Salesforce with the Senior Delivery Manager using insight from the software’s latest accessibility statement (Figure 7) suggests although plugins to synchronise the Outlook and Salesforce calendar are available, they are not being used. This analysis links back to the notion that employees are unaware of how to navigate the software they use due to a lack of training or supplementary guidance for the software. Unlike Salesforce and Universe, Aula is a web-based application that is used by university staff and students to upload academic content and communicate between the two parties. Evaluation of the application shows that it is forecasted to become the central platform as part of the redevelopment of the university’s digital ecosystem. Initially a start-up, Aula undergoes regular automated testing (AXE) to ensure new features comply with WCAG. Whilst some aspects of the programme fail to meet these guidelines (Figure 8), users are more concerned with the programmes language as not being user-friendly.

*Aula is another software […] different course leaders, modules leaders file things in different areas and heading just don’t’ make any logical sense […] I think a lot of neurodivergent people like things to be quite logical (Participant E)*

The participant’s response alludes to the ambiguity in Aula’s pre-determined headings encourages illogical filing of course content, subjective to the interpretation of the headings by different course leaders. Within the context of accessibility it raises issues on the applications clarity but more prominently suggests the need for user-training to ensure all course leaders have a unified interpretation of the language and follow a singular filing technique.

### **4.4 Supplementary Issues to Digital Tools**

Subtle difficulties of semantics and pragmatic language experienced by people with Autism and Dyslexia poise an increased difficulty in interpreting meanings from lexical items in verbal and written discussions (Eigisti et al,. 2007 in Sturrock et al., 2022).

*And universities, have a lot of acronyms […] so I just need things like that to be a little clearer (Participant B)*

*I don’t work with Phonics at all but it does mean when people use acronyms, I can’t understand them at all […] I don’t recognise letters, I recognise words […] I find the use of acronyms in the workplace really terrible and, everyone uses them for everything (Participant G)*

Gaps in the inclusivity of the industry language extend to both the digital and communicative aspects of the participants employment, making it a supplementary issue to using digital tools. For both Autistic and Dyslexic individuals the university’s standardised use of abbreviations i.e. FAH (Faculty of Arts and Humanities) or FBL (Faculty of Business and Law) contributes to word-finding difficulties with specific recollection of lexical items which can result in slower conversational reciprocity (Kamino et al., 2007) and higher incidence of idiosyncratic word choices (Eigisti et al., 2007). The impact of these difficulties can have an overall effect on social-interactions and relationship-building between colleagues and line managers (Adams et al., 2002 in Sturrock et al., 2022). Newly-recruited Autistic or Dyslexic staff who enter an organisation with exclusionary industry jargon have a reduced sense of belonging. A sense of belonging factors into the employee experience measured by the fulfilment from their role and psychological safety within the workplace (Edmondson and Lei, 2014). A reduce sense of belonging impacts an employee’s willingness to ask for reasonable adjustment further along in their employment.

*They know what they’re doing because they’ve been here forever. And so I’m coming from a new member of staff perspective (Participant D)*

Participants have signalled the deficiencies in the language and communication specifically noting a significant gap in the software training and guidance materials needed to navigate role-specific software. Developing specific changes to individual pieces of software has temporal and financial constraints and ineffective as applying a one-size fits all approach may miss the differing needs, views and capabilities of staff (Willems & Bossu, 2012). Participants admitted to having gaps in their personal knowledge of the built-in accessibility features in most job-related software and that identifying and improving the shortcomings in supplementary resources can enhance the utilisation of software as being more neurodivergent friendly. One aspect is the increased need for regular, neuro-friendly training to use the assistive technology, accessibility features and the job-specific software more efficiently:

*If there were additional parts of word or excel that I’ve not found that were really useful […] I would love to be trained in those, that would be great (Participant G)*

*There’s no easily accessible guidance for using software (Participant A)*

*What I think would really help would be maybe to have a day with somebody to look at this sort of software and introduce it to us (Participant F)*

Alongside the need for better software training and guidance resources, the study revealed the need for increased people management training to support line managers and colleagues in the way they interact with and support neurodiverse members of staff in honing their skills (Turner & Andrew, 2018). In the workplace, neurodiverse people, benefit from their colleagues being mindful of the way they process information and tailor their actions to help support their needs.

*I’ve asked my line manager to make sure she emails me any actions, but the thing is, they don’t stick to it because they just revert (Participant E)*

*My line manager here doesn’t seem to be too mindful […] We were sent a big document on a Friday for Monday training. And I thought, how am I gonna get through all of this? (Participant F)*

Implementing interactive training for line managers increases their knowledge on how to best manage neurodiverse employees. It provides the opportunity to impart an equity-based approach to building the professional development of all staff by adopting empathy when purveying the differing staff values, abilities and needs (Willems & Bossu, 2012). Consequently, it encourages inclusive methods of management providing neurodiverse individuals with an overall sense of belonging.

*It’s more about the staff training as opposed to the kind of AI I think allows me to offer support I’ve used for different things (Participant D)*

*The university needs to do more sessions just to educate people like more training sessions […] just how to be more neuro-friendly with colleagues (Participant B)*

### **4.5 Summary**

Organisations should ensure the work environment curated for their employees is accessible and inclusive to an extent that suggests the employer has fulfilled their anticipatory duty. The different needs, views and capabilities of staff should be considered as anticipatory rather than on a basis of disclosure and employers should inform and provide access to assistive technology to all employees (Willems & Bossu, 2012). With the study and notion of best HRM practice and the understanding of the correlation between employee experience and engagement, in-depth software training should be provided for all job-related software. Additionally, neurodiversity management training is crucial to ensure line managers are conscious of how to interact with neurodiverse staff and to remove language difficulties. Without implementing appropriate support, communication, training and awareness of tools there is a detrimental impact on the employee experience, the university’s strategy to creating a digitally inclusive environment and signals the employer’s inability to fulfil its anticipatory duty.

## **Chapter 5: Conclusion and Recommendations**

### **5.1 Discussion**

Kulkarni (2019) defines accessibility referring to the extent to which a product, device, service or environment is available navigable for individuals with disabilities, special needs or functional limitations. On an organisational level, digital accessibility implies the removal of barriers on technology products and services. Organisations provide employees with access to assistive technology, develop accessibility features in job-specific software and provide supplementary services to support the use of digital tools. Effective digital accessibility, factors into creating a digitally inclusive environment but limitations posed by institutional context result in deficiencies in the organisation’s overall contributions to digital accessibility. The WCAG stipulate digital tools need to adhere to a base-level of accessibility. However, the absence of unambiguous government regulations result in organisations being unaware of the extent to which accessibility needs to implemented (Lazar et al., 2015). This was evident from the research study as participants indicated that whilst most software was accessible, the supplementary guidance and practices across the local university group deviated from inclusive strategies and considerations of neurodiversity.

Another limitation is based on institutional actors invertedly slowing down the process to provide accessibility on a universal scale. With industries moving to adopt more holistic business models to succeed in globally competitive markets (Ebert & Duarte, 2018), developing streamline and advanced technology takes precedence on a product backlog. Consequently, efforts to supply accessible supplementary services like software training and advanced built-in accessibility features encounter dualism of ‘profit v human rights, market share v accessibility and competition v inclusion’ (Stienstra et al., 2007). In the research study, the findings outlined a severe deficiency in the delivery of software and management training, communication and awareness of assistive technology available. Prioritising the development of a digitally inclusive and accessible environment will directly contribute to the employee experience, increasing engagement and productivity output as outlined in the social exchange theory (Masterson and Taylor, 2000). Furthermore, digital inclusion strategies developed for employees can be transferred and applicable to the user experience of neurodiverse students.

### **5.2 Conclusion and Recommendations**

##### **5.2.1 Conclusion**

In order to succeed in a competitive economy, organisational development goals need to focus on improving the employee experience by fulfilling an anticipatory duty and creating a psychologically safe workplace. The growing reliance on digital transformation has placed importance on creating a digitally inclusive environment through implementing accessibility on a digital scale, highlighted throughout this study. Furthermore, it explores the value of extending accessibility to the supplementary services of software and management training, awareness of assistive technology and improved communication to help support neurodivergent users’ experience with these digital tools. The primary goal of this research study was to explore how accessible digital tools were for neurodivergent staff of a local university. The main research objectives explored were to:

1. Understand and analyse the current IT/digital tools and how they meet industry and legal requirements.
2. Identify areas of improvement with the software and supplementary services chiefly used by staff with these needs.
3. Provide recommendations for the local university on how particular digital tools and services can be improved to better accommodate staff with different needs.

Since prior research studies have not explored these objectives on a local university scale using employee engagement and experience framework and theories, this study contributes to the gaps in existing literature. Whilst there are benefits for creating a digitally inclusive environment, institutional limitations means not enough attention is devoted to improving the supplementary services that help neurodivergent users navigate the software. Applying Van Dijk’s theory indicates this research contributes to wider literature focusing on understanding the digital divide and digital transformation in educational institutions and professional organisations. Overall, the issues raised with the software and supplementary services highlight gaps in various stages of the employment life cycle and without addressing these concerns, the local university forfeits becoming a digitally inclusive organisation, and is unable to achieve its corporate strategy goals.

##### **5.2.2 Recommendations**

The research study’s findings highlighted minor accessibility concerns with the applications of Salesforce, Aula and the Staff Portal which led into discussions surrounding the deficiencies in the supplementary services of; lack of awareness of available assistive technology, inadequate software support and management training leading to a subsequent lack of support for neurodivergent staff and an increase of poor communication and use of inclusive language. Recommendations have been outlined to target these accessibility issues:

1. **Improving the onboarding process to increase awareness**

The university’s People Team are responsible for fulfilling the anticipatory duty of providing new recruits with information to access assistive technology prior to entering their role (CIPD, 2021). Refinement of the onboarding process can extend to signposting who employees should contact if they later need to request reasonable adjustments and how to join staff support organisations like the Neurodiversity Network or the Disability Staff Network. Simultaneous to targeting the issues of awareness around assistive technology, tightening the gaps in the onboarding process, strengthens organisational communication at an entry level.

1. **Implementing training workshops for software troubleshooting and managers**

The supplementary issue of training directly influenced the usability of the mentioned software, platforms and line manager’s ability to support neurodiverse teams. Implementing recurring in-person software training workshops whereby staff members from different departments across the university can access troubleshooting sessions to help navigate the different software used. In addition to software training, in-person training to help line managers better support neurodivergent colleagues and team members, exploring best practices and approaches to communication. Research shows adopting in-person training improves job-performance and increases employees’ acquisition of new skills (Aguinis & Kraiger, 2009). By offering training workshops for both software troubleshooting and neurodiversity management training, the local university can offer a level of consistency in performance which in turn can enhance employees’ self-efficacy and self-management skills (Frayne & Geringer, 2000) improving their overall experience and engagement with the organization.

1. **Creation of informative supplementary resources**

Training workshops for software troubleshooting and neurodiversity understanding are long-term business goals which require financial and temporal considerations within the organisation’s capacity. A short-term recommendation would be to utilise digital platforms and marketing strategies to create both interactive and informative resources to help neurodiverse employees better navigate the software used. Audio-visual tutorials on using the software provide further clarity and understanding of how to approach the software and can be accessed flexibly and remove the need for reading making it inclusive for those with Dyslexia or visual impairments (Bhattacharyya & Agarwal, 2020). These tutorials can also highlight how to navigate the Staff Portal and signpost where to find related documents or active links. Additionally, these resources can be redesigned to assist neurodivergent students (consumers) at the local university as they will have similar additional needs to staff, making it an economically beneficial business investment.

Overall, the local university’s digital tools are meeting a base-level of accessibility in accordance to WCAG. However, the supplementary issues of awareness, communication and training need to be addressed in order for the university to become a digitally inclusive organisation.

### **5.3. Limitations of the Study**

The researcher adopted a qualitative research method and disagreements in interpreting the outcomes of the study have occurred. These inconsistencies have impacted the validity and reliability of the conclusions, contributing to the study’s limitations. The use of primary and secondary data, time constraints and limited participant engagement has impacted the data collection quality. Future studies exploring the accessibility of local university software should adopt a qualitative longitudinal study with mono-design research framework.

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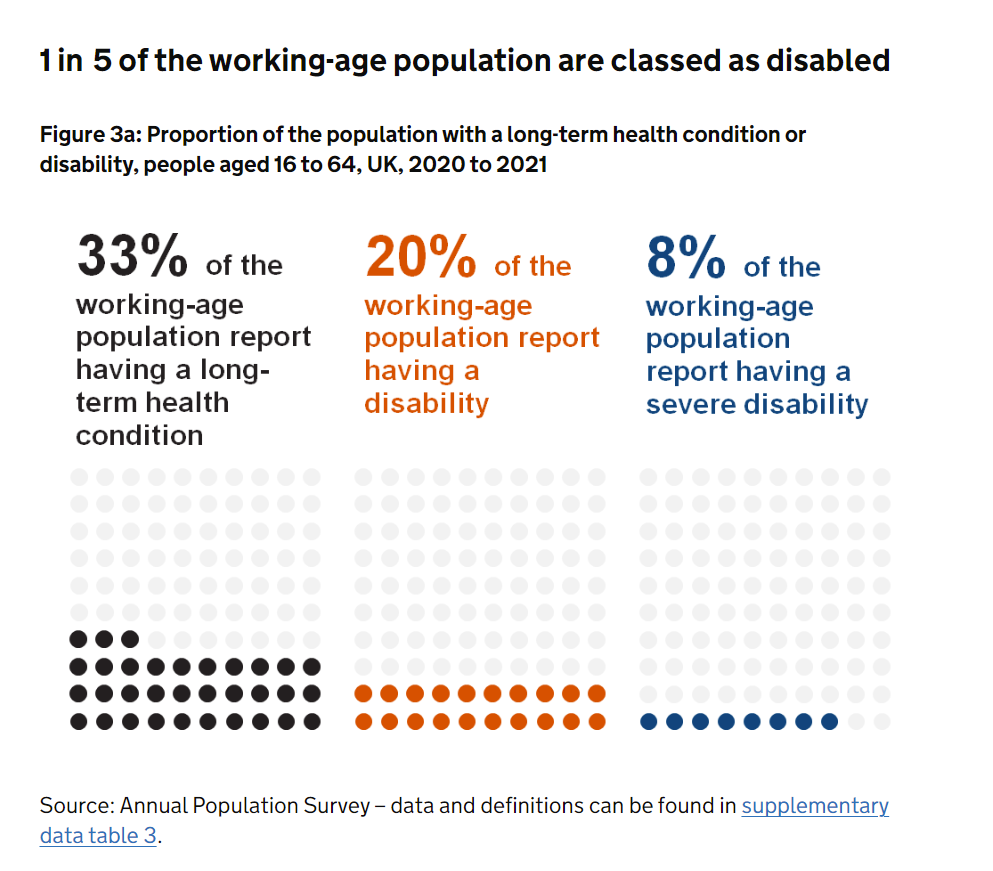
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## **Appendix**

**Figure 1***Labour Force Survey Table with Disability Employment Rate Statistics*

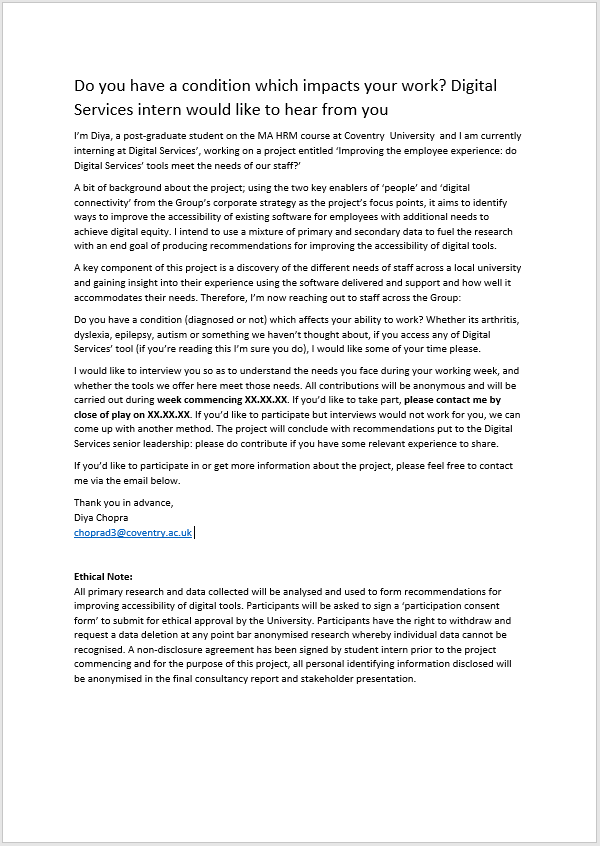


**Note:** From *The Labour Force Survey*, by Department of Work & Pensions, 2022, (<https://www.gov.uk/government/statistics/the-employment-of-disabled-people-2021/the-employment-of-disabled-people-2021#:~:text=The%20disability%20employment%20rate%20has,(COVID%2D19)%20pandemic>.)

**Figure 2***Drivers of Employee Experience Qualitative Table Results*Available to view on Page 18 of Report**Note:** From *Employee Experience Management: A New Paradigm Shift in HR Thinking,* by International Journal of Human Capital and Information Technology Professionals, 2020

**Figure 3**   
*The Employment Life Cycle*   
Available to view on Page 19 of Report  
**Figure 4**  
*The Research Onion*   
Available to view on Page 22 of Report  
**Note:** From, *Chapter 4: Understanding Research Philosophy and Approaches to Theory Development,* by Research Methods for Business Students, 2019 <https://ebookcentral.proquest.com/lib/coventry/detail.action?docID=5139641>

**Figure 5**Call for Participant Announcement including Ethical Note



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Participant** | **Neurodiversity** | **Impact** | **Diagnosis Status** | **Employment at CU Group** | **Awareness of AT** |
| A | Possibility of Attention Deficit /Autism | Social interactions are draining  Exhausting trying to manage workload | 2-year waiting list | Long-term | Uses AT regularly |
| B | Autistic | Sensory overload issues (fluorescent lights/noise)  Social recharging  Difficulty with multi-tasking | Newly diagnosed | Last 6 months | Unaware of AT |
| C | Autism,  Dyslexia, Dyspraxia and possibly ADHD and SAD | Communication, comprehending, coordination, balancing, motor skills and walking | Long-term diagnosis | Long-term | Aware of AT but struggled to used it due to lack of training |
| D | Traits of ADHD | Difficulty in concentrating and performing admin tasks / function skills | Undergoing diagnosis | Last 6 months | Unaware of extend of AT available |
| E | Dyslexia | Slow reading, working memory, hyperfocus | Long-term | Long-term | Became recently familiar with AT |
| F | Dyslexia, Dyspraxia/RSI, learning difficulties | Short term memory issues  Slowness of reading  Muscle difficulties | Long-term | Long-term | Uses AT regularly |
| G | Dyslexic -mild dyscalculia  ADHD | Coping mechanisms -ability to type accurately but cannot accurately hand write  Difficulties with understanding acronyms (i.e. FAH, FBL) | Long-term  Waiting diagnosis | Last 6 months | Unintentionally discovered AT during employment |

**Figure 6***Participant Table* *Neurodiversity and Awareness of AT Theme*

**Figure 7**  
*Salesforce Accessibility Guidelines*  
**Note:** From, *Local University Digital Services Team,* by Salesforce Team, 2021 [Salesforce Accessibility Conformance Report August 2021](https://www.salesforce.com/content/dam/web/en_us/www/documents/legal/508%20accessibility/sales-cloud-crm-acr-aug2021.pdf)

**Figure 8**  
*Aula Accessibility Guidelines*   
**Note:** From, *Local University Digital Services Team,* by Aula Team, 2020 [Oct 2020 Accessibility Audit Summary of Issues.docx.pdf](file:///C:\Users\Diya%20Chopra\OneDrive%20-%20Coventry%20University\Desktop\MA%20HR%20Management\Semester%203\Dissertation%20Report\Oct%202020%20Accessibility%20Audit%20Summary%20of%20Issues.docx.pdf)