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UNDERSTANDING THE LIVED EXPERIENCE OF DIGITAL POVERTY AS A DISTANCE LEARNER: STUDENT AND TUTOR PERSPECTIVES

Introduction

This document presents the final report of a research project which aims to explore the issues that concern students and tutors on the theme of digital poverty over the period from October 2022 to November 2023.

The project is part of a wider University initiative aimed at defining and building an understanding of what digital poverty is in the context of students from Wellbeing, Education and Language Studies (WELS), specifically as a distance learning student.

Thus, the research was motivated by the increasing awareness of the impact digital poverty has had on some of our students. There are multiple aspects and impacts of digital poverty, and so the overarching question was, 'what is the lived experience of digital poverty for our OU students?'

In addition, the role of tutors/Associate Lecturers (ALs) is essential in the student experience and so we are also looking to understand this from their perspectives.

The key questions that led the research were:

- What does digital poverty mean for a WELS and Open University (OU) student?
- What are the tangible outcomes (and impact) of digital poverty (for the student)?
- How can the OU mitigate against digital poverty related to inequitable outcomes?
- What barriers exist?
- What enablers are lacking?

These questions will be used later on in the analysis section of this report.

Methods

A mixed methods approach was adopted in order to both assess wider trends through quantitative analysis and gather more in-depth data through qualitative methods. This was the decision based not only on the complexity of the issue but also because of the limitation on resources available (time and funding).

Thus, the literature review informed the content of an online survey sent to the students. Responses from the survey informed the themes that were explored in the focus groups by both students and ALs. Preliminary findings of those focus groups and survey responses were used as basics for discussion in the evidence cafes attended by students. The whole process was also supported by a Theory of Change (ToC) framework which evolved and refined as the project developed (TASO, n.d.)

Looking into more detail at the methods, although we undertook a preliminary literature review, it was considered that this process would be flexible, as it is a very topical and ever-growing theme, and the team would accept any literature produced on an ongoing basis.

The search for the preliminary literature review was undertaken between October and November 2022. Educational databases were used for this purpose.

Informed by the WELS student demographics (table as follows), the main keywords used were as follows:

- Digital poverty
- Higher education
- Online education
- Distance learning
- Blended learning
- Accessibility
- Digitalisation
- Technology enhanced learning
- Digitalised- skills- development
- Economically deprived
- Low income
- Hardship
- Disadvantaged
- Impoverishment
- Gender
- Minority groups / Black and Ethnic Minorities / ethnic groups
- Disability / Special Educational Needs (SEND)
- Neurodivergence / neurodiverse
- Mental health
- Student
- Tutor

**WELS student demographics from the academic year 2022/23
(all modules starting between 1/8/22 to 31/7/23)**

Ethnic group	White	Asian	Black	Mixed	Refused	Other
	88%	4%	4%	3%	1%	1%
Socio-economic status	IMD1	IMD2	IMD3	IMD4	IMD5	
	22%	22%	21%	19%	16%	
Disability	No Disability	Declared Disability				
	77%	23%				
Sex	Female	Male				

83%

17%

Note: This above table is based on the WELS student module count for UK undergraduate registrations at the module start. IMD is a measure of deprivation, where IMD Q1 is the most deprived areas of the UK and IMD Q5 is the least deprived areas of the UK

A final list of 59 titles, including journal articles and grey literature, was reviewed leading to a final number of 24 titles which were further considered for thematic content.

Once the themes were identified, we created an online survey, which was revised by the Steering group and Student advisers and invited students and staff to take part in it. We worked with the Student Research Project Panel (SRPP) and used standard Open University modes of communication to promote and recruit student participants such as module forums. Participation was voluntary and no payment for the survey was offered.

A Jiscmail survey was created, as this is the format which the University permits. It was important, given that this is a project about digital poverty, that students would be able to access and complete this survey if they only had a mobile phone to do so. As a result, it was doublechecked that this would be straightforward to complete via a range of different mobile phones. A rigorous process was spent gaining ethical clearance for the project, alongside gaining access to the sample of students for the survey. Due to the number of projects being carried out at the University, this took some time to be agreed so the project was delayed in terms of when we could contact students.

As digital poverty is a sensitive issue study due to the topic of poverty, research tools were carefully constructed to minimise harm as much as possible. Student consultants advised and confirmed they were happy with the survey questions. Standard ethical procedures were followed such as providing information sheets and consent forms; these were separate for staff and students.

We contacted 1500 WELS students via two different calls with several reminders. However, only 34 responses were received. The take-up for the initial survey was thus low, possibly due to it being the time of year when most students have finished their studies. Consequently, it was decided by the steering group that the team would continue gathering evidence in the upcoming academic year.

Another method adopted was online focus groups, which were decided upon in terms of capturing more detailed data. The choice of running the focus groups online was due to practicality in terms of travelling but also costs for both the students and the research team. Students who took part in the survey were asked if they would also like to take part in a focus group, but no students volunteered to take part. Microsoft Teams is a required platform for the University to carry out research, so this was used for both the student and the staff focus groups.

The team went back and changed their approach to student recruitment, which was critical for the development of the project. Having reflected on the lack of response in recruiting student participants, the core research team selected online 'evidence café' as an alternative forum. An evidence café allows a two-way sharing of information and knowledge. In this format we were able to both share our interim findings with students but then to capture their voices where they supported or challenged our initial findings. The evidence café adopted the form of an introduction/presentation and a discussion object

comprised of a ranking task which required them to think about which of our themes from the analysis matter most or least to them. Our recruitment strategy switched to direct student contact via (WELS) module teams and the student alumni, further we changed our terminology in response to feedback from the student representative on the research team. We went back and clarified this with SSRP and resubmitted Human Research Ethics Committee (HREC) consent for this new approach. 15 students took part in two evidence cafes. The adopted platform was Teams, to emulate the focus groups. However, one of the evidence cafes took place via Skype due to an automated message when organising the event. Although it took place, it raised issues regarding using different platforms and whether the lack of familiarity and specific requirements would affect participants involvement in other settings. This serendipitous situation led to pertinent findings to the study and were considered in the analysis and recommendations.

The second participant sample for the evidence cafes was current ALs within WELS. We advertised for AL participants via cluster managers/cluster groups and module teams. Participation for staff was voluntary and no payment was offered for taking part in the focus groups. We held 4 sessions to which 8 ALs attended.

The conversation and reflections expressed are integrated in the analysis section which follows. Please note, that those comments which were submitted in written format, have been included as such. Some of the testimonials have been included verbatim to reflect the voices of the participants.

In addition to surveys, focus groups and evidence cafes, a Theory of Change (ToC) framework was created to inform the research and to ensure that it was focused, yet responsive to the issues that arose. Our ToC developed through the steering group and was further informed, mindful of other projects ongoing at the OU. The ToC evolved through several iterations as we found out more from our project findings. The final ToC, has been amalgamated into the recommendation section (TASO, n.d.)

A final clarification point needs to go towards the analysis section. This section is mostly divided as per the project questions. However, due to the intertwined nature of the responses of the participants and to reduce reiteration, the last three questions (*How can the OU mitigate against digital poverty related inequitable outcomes? What barriers exist? What enablers are lacking?*) were amalgamated in one section as it was faithful to the opinions presented and the direction that the conversation adopted.

Literature review addressing research questions (evaluating what is covered and not)

Digital poverty is well documented from a variety of perspectives and often understood as lack of physical access to technology. As noted by Hayes and colleagues (2022, p. 237), "the often discussed 'digital divide' (Van Dijk 2020) between those who can benefit from the digital age, and those who cannot, is generally perceived as an issue of access to infrastructure and digital devices. When followed by an emphasis on digital skills training for those who have been disadvantaged, exactly how individuals encounter, create, or respond to data, or indeed how they resist the collection of data about themselves, is rarely mentioned. Pentaris and colleagues (2021, p. 5) acknowledge the "interchangeable concepts

of 'digital illiteracy' and 'digital poverty'" whereby the notion of the digital divide often refers to inequalities in accessing and engaging with technology and use the term "digital wealth". That said, according to Hilbert (2013, p. 821) "the digital divide has outgrown the binary question about the 'haves' and the 'have nots' and has become a structural question about the 'have much' and 'have little'" highlighting the fact that it is not just enough to have the equipment but to be able to do the tasks required, being speed, hardware and software specifications, mobile data or quality of streaming to name but a few issues. EADTU (2022, p. 23) suggest that the "concept of digital poverty is similar but not entirely identical to the idea of the digital divide [...]. Barrantes (2007b) defines digital poverty as '[...] a lack of ICT with regards to access and use of the information and communication allowed by the technology"'. Tobin and Hieker (2021, p. 2) refer to "learning poverty" in terms of a lack of connectivity and a suitable place to study. Sharme & Turner (2021) use the term "data poverty", Donaghy (2021a, p. 54) refers to "digital exclusion" and "digital capital", Seale and colleagues (2010 cited in EADTU, 2022, p. 24) use the concept of "digital inclusion".

In the process of delving further in definitions of digital poverty, another topic which arose was Techquity (Shelton, 2021) which refers to the process through which educational technologies account for cultural differences, are culturally responsive and provide culturally relevant learning experiences for students. It could be argued that the reference to cultural issues could also be extended to neurodivergent students' needs in this context.

Some of the issues that are mentioned in the literature thus vary from physical access (not only to technology but also places), up to date technology, skills to use new technologies and adaptation to teaching styles. It became apparent that these access issues were closely linked with other circumstances, demonstrating an intersectional disadvantage. Challenges of the online environment can include a lack of access to study spaces (Rainford, 2021), issues with broadband speeds (Drinkwater, 2022) and mobile phone large data downloads (Tobin & Hieker, 2021). The authors of this report would add the idea of 'time poverty' too as it may be an indicator of other socio-economic status that could be associated with issues mentioned above.

Bearing in mind the research questions and considering how the wider understanding of *digital poverty can impact* students, online students in Higher Education can be impacted by "access to reliable internet connection and learning spaces, study materials, and computers to mention but a few" (Halkic & Arnold, 2019, cited in Kalocsányiová et al., 2021, p. 14). Much of literature is pandemic based but this is not a one-off problem (EADTU, 2022), rather it is a perennial issue. Indeed, Nicklin and colleagues (2022) acknowledge that before, and after the pandemic, digital poverty and digital literacy is an issue for both students and educators. Over a quarter of university students couldn't access online learning during the pandemic according to Mackenzie and colleagues (2022).

Endorsing points mentioned above, for Pentaris and colleagues (2021, p. 6) people may feel "'connected' but lacking in skills and knowledge about e-education and content creation features (e.g., online presentations)". This lack of digital confidence to access online can be a result of a lack of technical social capital if they are without support or anyone to ask for

help according to Lancaster University (2022). Tobin and Hieker also note that different, or unfamiliar, teaching styles can be a potential barrier. Whalley and colleagues (2021) suggest the need for personal learning environments for those students using mobile devices.

Digital poverty has also been associated with a lack of digital capital by Donaghy (2021, p 54). Donaghy expands further the concept of digital capital which encompasses many different aspects such as:

‘ the physical kit needed, especially in households with multiple users sharing it; the knowledge and training to use appropriate technology; the satisfaction and confidence that we can and will continue to be able to use it securely and safely; the cash to fund it; the space and time to use it; the family and peer support to allow it to form part of our lives; and, finally, both the local infrastructure to support it and proper and sufficient access to that infrastructure"(Donaghy, 2021, p 54).

In addition, there is a notable gap in terms of how Higher Education students’ intersectional identities are impacted in terms of digital inclusion. Previous research with students from black and ethnic minorities background increases lack of engagement and potential digital poverty (Sharme & Turner, 2021), as does research on students with disabilities, and those on low incomes. Hall, Jones and Evans (2022, n.p) have established that there are greater levels of digital poverty among those living in lower socio-economic households.

Whilst online learning can provide opportunities for disabled learners, they can also experience digital poverty and “poor digital networks” (MacKenzie et al., 2022, n.p). This can be explained, in part, by “digital poverty, literacy and exclusion” which can be issues for those with learning disabilities (Chadwick et al., p. 242). Jason Arday, deputy executive dean for people and culture at Durham University, is concerned that the pandemic could further deepen the black and ethnic minorities awarding gap, due to digital poverty during lockdown, whereby the “digital divide could create a chasm in learning outcomes” (Guardian, 2021).

Therefore, it appears that digital poverty can also exacerbate other types of disadvantages in society such as applying for jobs (Burgess, n.d), and lack of access to health and social care (Donaghy, 2021). As a result, this exclusion extends beyond Higher Education and impinges on everyday life and opportunities for the future. The government has done little to support students, with the results of surveys suggesting up to half of students are impacted by digital poverty (Higgins, 2021).

Within this context, there is a lack of literature on how students understand the term digital poverty, and in which ways they experience it. The absence of student voices was noticeable in terms of a review of the limited literature. This also leads to lack of research linked to specific ethnic or neurodiverse groups etc, which requires further attention. There is thus sizeable a gap in terms of knowledge around how students in Higher Education understand and experience digital poverty or digital exclusion, as it is also known.

The issues raised in the literature and the gaps in knowledge around students' first-hand experience are the prime motors for this project. Our direct engagement with students through the survey and conversations goes some way to bridging that gap, in understanding student lived experiences within the context of the OU.

For the purposes of this report, we will consider digital poverty as 'The inability to interact with the online world fully, when where and how an individual needs to' (Digital Poverty Alliance, nd) We thus understand digital poverty as an encompassing definition which includes physical (software and hardware), informational barriers, time, and skills poverty.

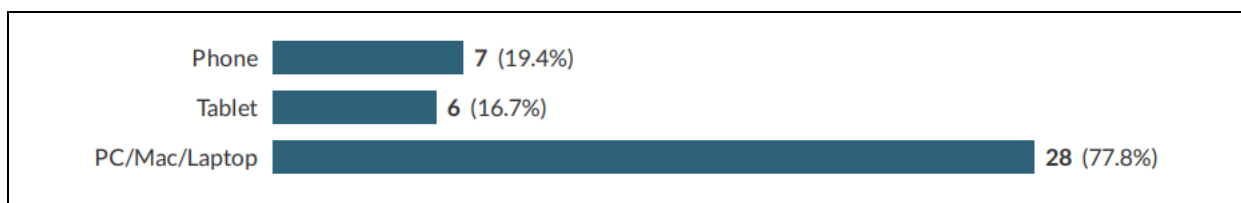
Analysis

The presentation of the data will be done using the research questions as a framework. Themes were identified within each of the questions and the providence (survey/focus groups / evidence cafes; students/associate lecturers) will be specified.

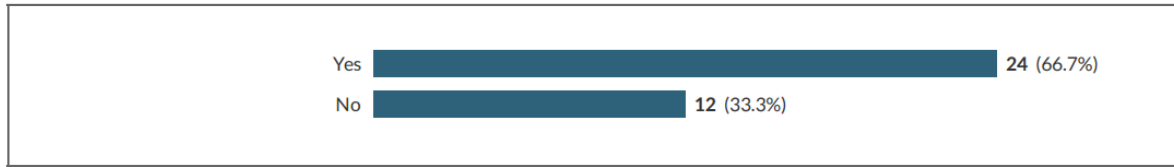
What does digital poverty mean for a WELS and OU student?

The term digital poverty is still generally considered as physical access to the technology by the students.

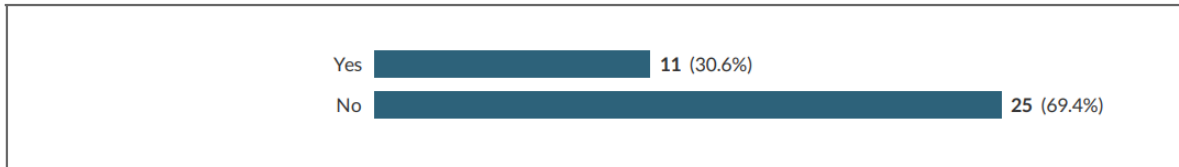
The hardware mostly used is PC/Mac/Laptop (78%) with 67% stating that this is most appropriate for their needs 'up to date' and with 69.4% unconcerned with speed of tech development.



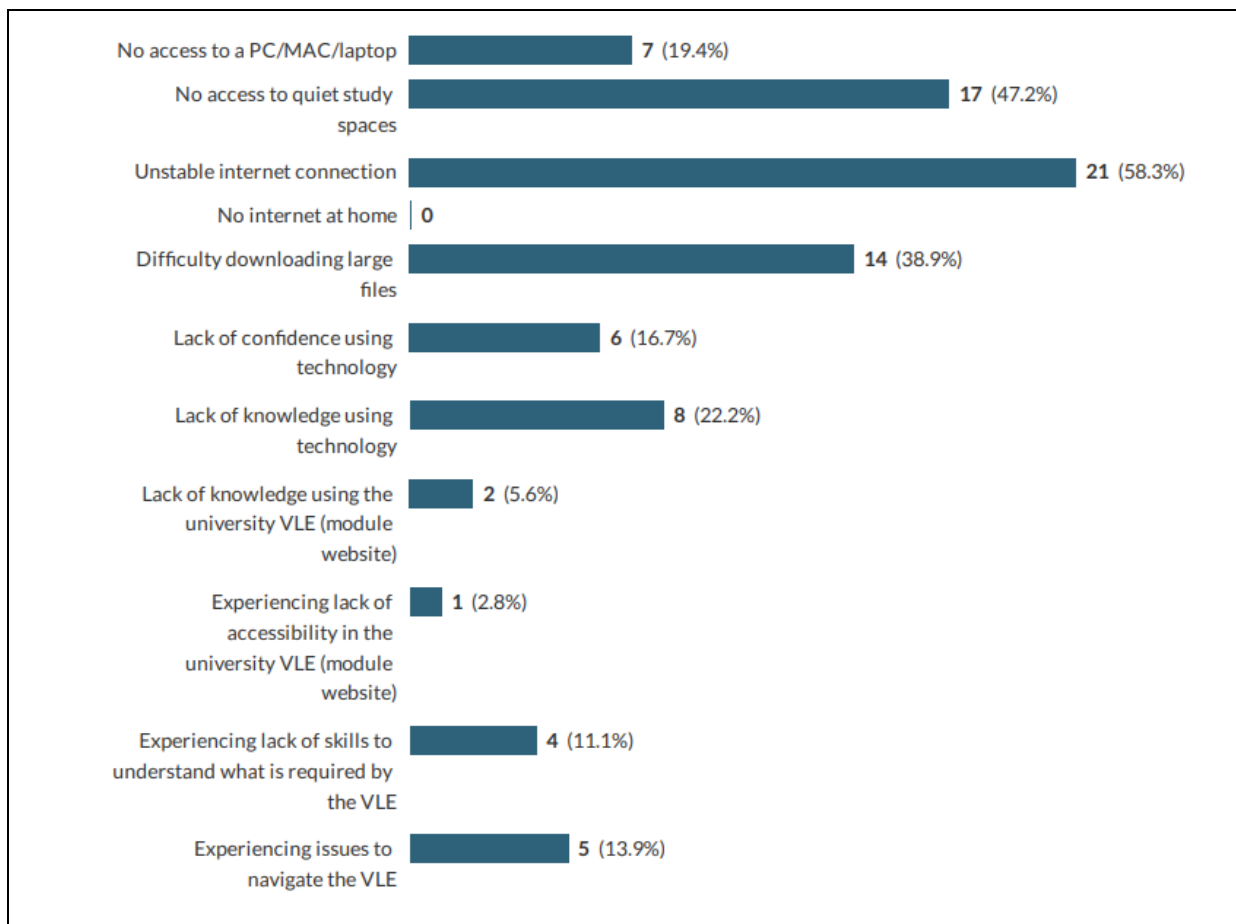
Do you feel you have access to the best technology for your studies?



Do you find the speed at which technology progresses a concern in terms of studying online?



Other issues that influenced the students experience were unstable internet connection (58%), lack of access to quite study space (47%), lack of knowledge or confidence using the technology (22%) and lack of knowledge, skills or understanding in using the Virtual Learning Environment (VLE) navigation (33% agglomerate)



The data provided above suggests that the 'have much'/'have little' stated by Hilbert (2013) is relevant, as well as a wider understanding of digital poverty which extends to skills.

73.5% of the students' responses to the survey also identified that the technology that were using was not entirely suitable to what it was required. As one student put it: *'I've been with the OU 6 years and have noticed a considerable increase in the way in which technology or the expectation that students should be able to use technology has been incorporated into modules. I understand the reasons for this but feel that it would be preferable if it was made clear to students that they need to be able to produce a PowerPoint presentation or create a screen cast because it gives students like myself who are less confident, time to find solutions or develop these skills in time for when the TMAs due. It's often not explicitly clear that these skills are needed until the TMA is due when students who are less confident about technology are left panicking.'*

According to these views there is starting to surge a link between technology use and the learning/teaching pedagogies adopted, which makes those students who experience digital poverty or are at the risk of, more susceptible to changes and potentially negatively affected by the increasing use of new technologies.

Layered onto this there was a theme of not wanting to spend all their learning time on a computer. For some in our evidence cafes, this was due to disabilities. Age was also highlighted as a factor, however there are a multitude of reasons why studying only on a computer might not be desirable or possible as highlighted elsewhere in this report. This point endorses themes highlighted in a previous OU research project, where one of the key findings was that *'blended courses, with content provided via a mix of digital and print formats, were the preferred study format amongst participants and were also perceived to offer the most value'* (Dungate, 2022, p. 5)

Within the evidence café, students suggested that whilst there is help (from the OU) to provide / replace / update physical technology – that help is hard to find.

In addition, it was made clear in our evidence cafes there was a high percentage of students who had complex needs. This requires a higher level of adaptability by the OU in terms of provision of technical devices but also support and advice on skills. As a student put it: *'I don't have arms or legs on a type with a mouse stick and [this] puts me in the position where I can't use a paper book. I'm particularly looking at the four books that I received six weeks before the course started as everybody else did. I feel certainly disadvantaged when it came to other students because everybody else had six weeks of been able to look at the paper copies, which I wasn't able to do'*[Note: the online materials are not available until the module officially starts at the beginning of October]

In this context, technologies are a real enabler, but it is the actual timely access to that technology that is creating a barrier.

The original understanding of digital poverty as physical access to technology is now complemented by the issue of skills access. The impact of these two types of access is now also affected by economic access. Endorsing this point, it was mentioned that students who worked as healthcare assistants would be interested in training with the OU. However, due to their low pay (socio-economic circumstances) they did not have access to technology (physical access).

Delving further into the different connotations of digital poverty, students from the evidence café clearly stated that digital poverty is also related to confidence, and the impact

that it can have on the students and the interaction with other students, their tutors and the system. More importantly, what it was strongly highlighted is that students share many similar needs but also many different ones, which sometimes can conflict with each other.

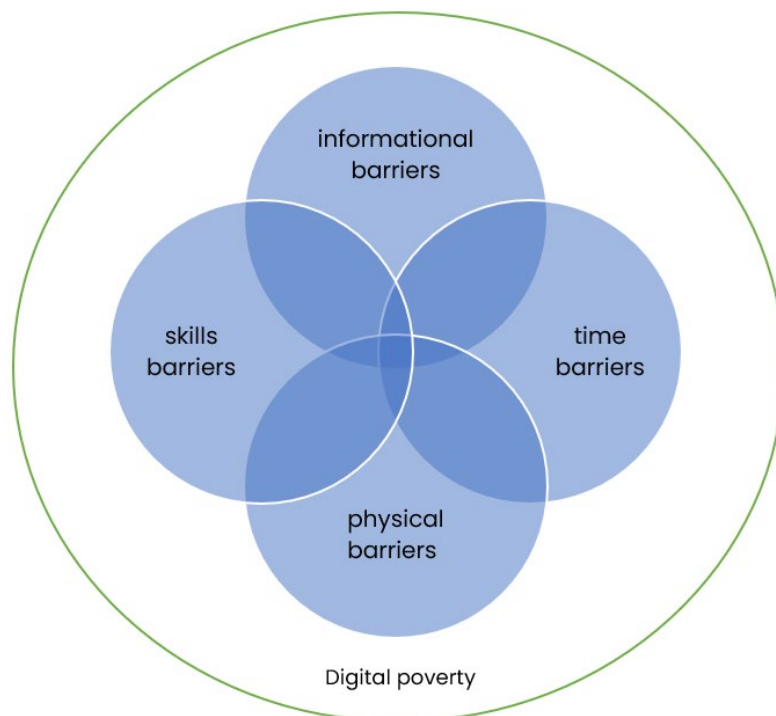
“Being more aware that one thing that works for someone isn't gonna work for someone else and they shouldn't be able to feel stupid. Just because it's not working” (Student evidence café).

Linked to this point is language, which is related to what we identify as an informational barrier. Some students stated that albeit being familiar with technology, they knew little about specifications and this should not be given for granted. As a student put it: *‘I've got a bit of knowledge about computers, but I don't know about the RAM or something or kind of that's all jargon to me. I haven't got a clue what they are about. I think it needs to be dumbed right down to the nicest possible way to kind of just the normal talker, the everyday person can understand’* (Student evidence café).

And this topic leads back to physical and skills access to technologies. As a student put it: *‘You need the knowledge of what you actually need, not what they want you to have’* (Student evidence café).

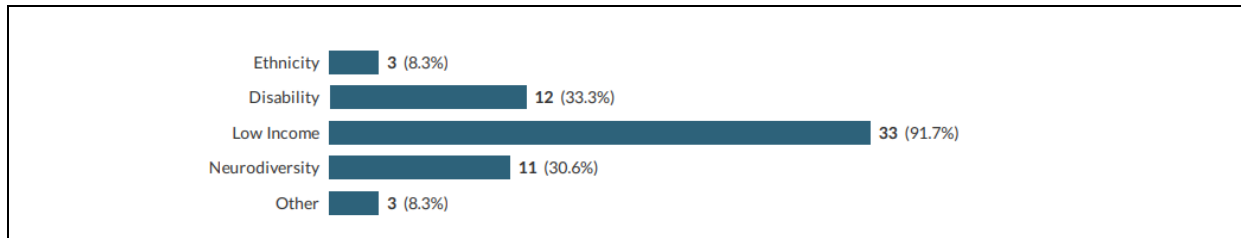
Thus, there was a call for clearer instructions regarding the essential equipment required. This information needed to be also complemented by additional and assistive technology that is available for disabled students.

As a conclusive remark, and to answer the question of *what digital poverty means for a WELS and OU student*, it was discussed that it encompasses physical, skills, time, information and economic lack of access (poverty) and/or lack of mastery of available sources (which could be included in the above mentioned ‘skills access’).



What are the tangible outcomes (impacts) of digital poverty (for the student)?

According to the surveys, digital poverty impacts OU students which can be seen by the demographic distribution as identified by the students themselves, with the following breakdown: low income 92%, Disability 33.3 %, Neurodiversity 31%.



This situation was aggravated by other circumstances which expand on some of the issues already mentioned:

Information poverty: refers to issues mentioned above and relates to the need to have clarity in the instructions of what is needed and when, as well as how to garner the information that is required to make the utmost of the learning and teaching journeys.

Physical poverty: issues which relate to the lack of a quiet place to study (50%), which is not always in the home, which can lead to other problems such as noise, availability, etc.; costs attributed to contracts and devices; lack of access to internet (location/download/filters); unsuitability of equipment, whether is out of date or wrong compatibility) (67.6%). Looking at technology per se, there are also issues when using the available platforms in a collective sense. For example, often the use of cameras in tutorials might be restricted to help those with limited broadband, yet this creates exclusion for students who might benefit from that such as those needing to lip read, or simply to 'see' other people to feel less isolated. At the same time, having the cameras on would be helpful for students who lipread but could be very disruptive to students with epilepsy if the image is not sharp enough and flickers.

Time poverty: lack of ability to have long periods of study and instead studying in small periods of time in between family and caring responsibilities, which may be suitable to read/listen to specific content in the module but not appropriate when writing essays or a longer active learning time is required. Students also listened to audios and videos from the website on their daily commute, as it was the only opportunity – this was considered as not the best solution by them as it could affect their comprehension of the subject matter.

Skills poverty: issues relate mostly to lack of confidence in using the tech and information provided (VLE) (14.7%). These two elements (skills and confidence) often appeared intertwined in the conversations during our evidence cafes.

Some of the students' positioning, expressed this connection:

'If you don't have the confidence, then you don't go to find the information or try out the technology you just freeze up' (Student, Evidence café).

“I have kind of the knowledge, but not the confidence; I get flustered very easily if it doesn't work, then my mind just goes” (Student, Evidence café)

‘Somebody blithely says click on the link in that e-mail and you might have somebody who only just learned how to get the e-mail in the 1st place’ (Student evidence café)

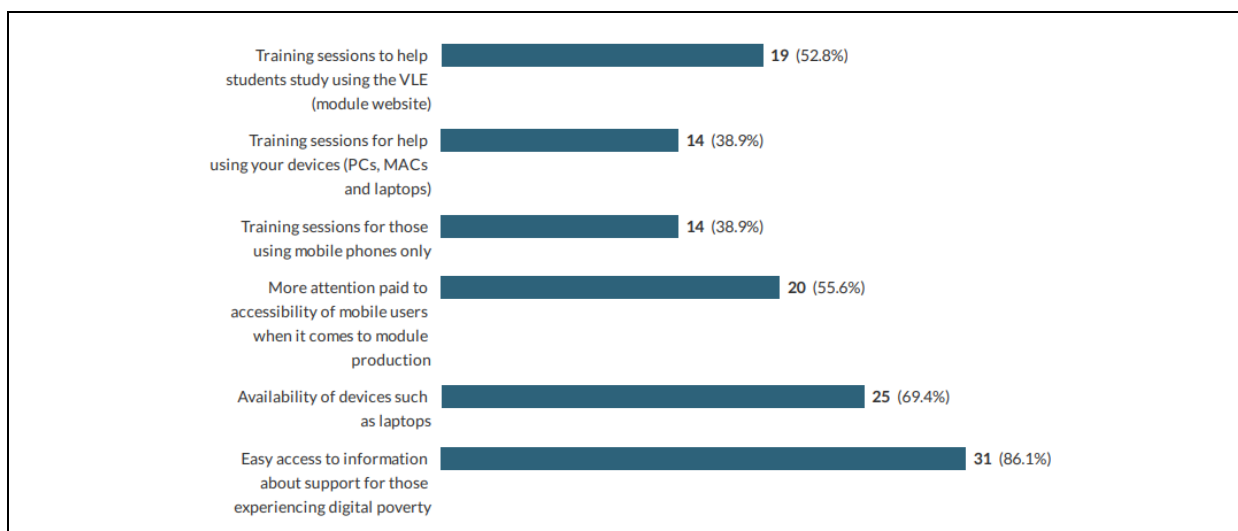
This leads to a sense of embarrassment due to the lack of ability to fulfil the requirements to study the modules, as well as the more social aspect of interacting with other students, either through forums, WhatsApp, or live tutorials.

Further development of this point was discussed at the focus groups with the ALs. There was a conversation regarding the need to have a frank discussion about which device to use for an appropriate engagement in the module and to manage expectations. For example, using the mobile phones could be useful when reading materials and quick feedback but perhaps they are not reliable to attend tutorials (streaming suitability and participation possibilities) or writing assignments. The use of mobile phones could be pushed forward because other equipment is shared, or the costs involved.

Students suggested that the use of audiobooks could be provided alongside ebooks to support student's where time poverty / additional learning needs impacts on study. And that all material should be released simultaneously – for example when the readers / study books are posted out to students, the e-versions can also be available.

Where digital skills training is provided though needs considering carefully. Students in the evidence café highlighted how some students join at different levels or stages and may miss skills that are presumed to be developed in a first-year module.

Training is important but consideration should be given to how the OU in general support the right skill development at the right time. Endorsing this point, survey responses highlighted a few training ideas as well as what else the OU could do to support students experiencing digital poverty.



The conversation around *what the tangible outcomes (impacts) of digital poverty (for the student) are*, shows that there is a myriad of physical, time and skills poverty issues which affect students (as well as tutors/ALs) learning journeys. There was also a sense of

frustration as students seem to be proactive and wanting to do well, but they felt the system did not support them.

How can the OU mitigate against digital poverty related inequitable outcomes? What barriers exist? What enablers are lacking?

When we enquired about how the OU could support students, there were a variety of issues mentioned. There was some common ground of understanding by students and ALs, although there were some discrepancies too.

In supporting student IT skills development (skills poverty) and provision of technology devices / software (physical poverty) required for study, students suggested that the OU systems are too confusing and are adding to the issue of digital exclusion. For example, there is a need to download systems and software exclusive to the OU when a more mainstream platform could work.

The following are individual statements suggested by the students in the open answer survey questions:

- *OU need to be clearer expectations and offer support for new tech skills development (creating materials such as PowerPoints or screen cast)*
- *OU complicates IT systems and training.*
- *OU needs to utilise better platforms.*
- *OU provide to plug gaps in digital poverty (physical / skills)*
- *Learning can be fragmented*
- *Provision of uniformity in the platforms (updated devices, macs and older versions)*
- *OU should provide a FAQs in the Computing Helpdesk informed by the most popular demands made by the students*

When specifically asking what the OU could do to mitigate digital poverty, ALs provided a series of recommendations grouped around skills and physical poverty. Those **in bold** were also recommended by students

Reducing Skills poverty

- Provide a logical search system (including key terms) to find answers / links / support.
- Develop model personae that could be used to help course and content design (such as how they study digitally). The use of real examples is always more enrolling and engaging.
- Use feedback templates and marking grids to include digital skills, knowledge and use which could be linked to the data skills template already existent in some module 'Resources'.
- **Badged open courses could be used more in learning activities and reflected (include the badge) as part of assessment (TMA)**
- **Open learn packages which include 'how to study using technology' could be expanded in the introductory courses for students.**
- **Develop peer support for tech skills and knowledge (students as well as staff)**

- Develop the general OU approach and pedagogy where distance learning and technical skills are intertwined and responsive to current norms, e.g., using podcasts or webcasts in activities and assessments.
- **Develop a virtual community along the same lines of what is done in conventional universities.**
- **Provide online sessions during the Summer prior to the start of the academic year in October, problem solving and instructing students how to make the most of the software that is available during their studies. This pre-course initiative could also support students to create a community and support trust building leading to more active forums conversations throughout the year.**
- **Provide clear guidance to students about the support that is on offer if they are in receipt of DSA, e.g. Daisy books, binding options for books, alternative technology. The information is there but the knowledge is not generalised.**
- Timely provision of alternative technology so students in need of it are not at a disadvantage.
- **As a disabled student, and as part of their needs assessment (DSA) the student can record tutorials for their own purposes¹**
- **Have a streamlined ‘help’ section – maybe a button / link on the landing page of each module / OL / other materials.**
- **Develop a FAQ - how to download and save...how to switch on subtitles...how to find a tutorial recording ...how do I join a Teams meeting...**
- Have a spoken work and diagrams ‘how to’ guide to help students and AL resolve IT issues
- Look at partnerships around tech and tech solutions – such as MIND ‘get to know your gadget’ or Sconul
- Develop skills virtual learning communities (for tech)

It is noted that some of these recommendations refer to a different approach to pedagogy and the delivery of the teaching as well as learning styles. However, some of the issues regarding physical poverty remain.

Reducing physical poverty:

- **OU could make recommendations on device / platform (rather than specifications which are not always understandable). It was mentioned that the OU could facilitate deals and offers to help study access, which are more easily accessible and does not require a long bureaucratic procedure and it is provided timely.**
- **Ensure that the provision of content works across different devices, e.g., PC/Apple and phone.**
- Make recommendations to use public services (libraries) or creating partnerships to allow a wider access to new technologies.

Reducing skills poverty:

¹ [Recording of Online Tutorials | Student Policies and Regulations | The Open University](#)

- Reduce extraneous information sent to the students, particularly at the beginning of the academic year, so that students can access related details to their modules, tutors and situation quicker
- OU should adopt a university wide approach so that deadlines, essential information and contacts are positioned on top priority to be disseminated to the students in a timely manner
- The consideration of developing a platform within the OU which serves similar purposes to WhatsApp, but it is centrally provided. This responds to the conundrum of reduction in using forums, increase access of WhatsApp use. Albeit it can be useful, it has also been shown that it could be detrimental where WhatsApps are monopolised by a few, comments are not useful, tone may be discriminatory, and conversations cannot be archived.
- **Release all module materials (not LG content) at the same time**
- **Create use of audiobooks**

Working definition and Summary of findings

- Digital poverty has been considered as ‘The inability to interact with the online world fully, when where and how an individual needs to’ (Digital Poverty Alliance, nd). It is an encompassing definition which includes physical (software and hardware), time, informational and skills poverty.
- *What digital poverty means for a WELS and OU student:* it encompasses physical, skills, time, information and economic lack of access (poverty) and/or lack of mastery of available sources
- *What the tangible outcomes (impacts) of digital poverty (for the student) are:* there is a myriad of physical, time and skills poverty issues which affect students (as well as tutors/ALs) learning journeys. There was also a sense of frustration as students seem to be proactive and wanting to do well, but they felt the system did not support them.
- *How can the OU mitigate against digital poverty related inequitable outcomes? What barriers exist? What enablers are lacking?* a detailed list of points is included in the section above. Looking at student IT skills development (skills poverty) and provision of technology devices / software (physical poverty) required for study, students suggested that the OU systems are too confusing and are adding to the issue of digital exclusion. Overall, recommendations refer to a different approach to pedagogy and the delivery of the teaching as well as learning styles. However, some of the issues regarding physical poverty remain.

Evaluation

There are issues that could be grouped according to three levels: university wide, students and AL’s (Faculty) in order to solve the needs highlighted.

From the **University** point of view, there is a need to clearly differentiate what is meant by digital poverty in order to find effective ways to move forward to support our students and staff. In this context, there is a need to clarify the differences between digital poverty and

digital literacy – albeit elements of both are included in the working definition presented at the beginning of the report.

There needs to be a clear identification about what is valued more: content, skills, and/or use of technology and present effective ways to support students and staff.

The University should consider using / making content usable on **mainstream platforms**.

There are issues regarding **students'** expectations of the software and hardware and skills required in each module, that could be clarified for the students. The OU in turn could also provide further support, and less cumbersome to access, to help those students in need. It is also not only a question of provision but the speed at which this provision is given, so that it does not have a negative impact on students' progression.

With regard to **ALs and Faculty**, there is a need to ensure that they are equipped with the required skills, equipment and support so that they feel supported to support the students. There might be systems in place, but they are not known across the University, so more homogeneity is required. In addition, regarding the relationship that ALs have with students, there might be assumptions made by tutors (age and ability for example) about digital confidence and competence that needs to be clarified and discussed further to find effective and long-lasting solutions. Some of these latter issues may be factual and some may respond to perceptions, so clarity is needed to support students and staff alike.

In terms of the teaching and learning delivery, and bearing in mind physical poverty and skills poverty, there is a need to differentiate the needs required in Level 1 modules compared to Level 2 or 3. Further reflection on whether the needs are different and whether there is a great gap across university faculties needs to be done.

Recommendations - Creation, transparency and reformulation of proposals to reduce digital poverty across the University

This table of recommendations is drafted based on the points made above and in consultation with the project's Steering Group, which counts with representatives from academics, academic services, equality, diversity and inclusion team (EDI), learning design team, technical design team, panning and faculty administration and finances. In addition, the suggested recommendations were distributed to the Open University Digital Inclusion Group, Library Services (LDS) and Future Learning (SEE) to ensure that they were accurate.

The main message that rose in the project is that the OU systems and ways of working currently add to students feeling digitally excluded and feeling digitally poor. There are good systems in place and a thorough thinking process has gone to provide students with guidance, protocols, software adjustments and general support. However, in numerous cases this information and practical advice is unknown by those who need it the most.

This table in appendix 2 is an attempt to highlight some of the issues and find practical, organic and sustainable solutions for the OU as a community of faculties, professional services, ALs and students to reduce digital poverty as a whole.

Impact

The interplay of physical, time and skills poverty all impact negatively on the student (tutor) learning experience:

- creating inequities due to a lack of full access and functionality of the learning content
- lack of parity in accessing tuition and tutorial activities
- learning becomes fragmented and more difficult; we are thus creating barriers for the student learning experience.

These issues lead to additional pressure of time and financial burden to overcome lack of full access / access of tuition.

- there is a sense of frustration as students are proactive and want to succeed, but felt OU systems did not support them
- confusing educational systems and processes creating barriers to learning
- lack of information and knowledge about OU support (including for digital poverty).
- OU technological systems (software, IT and support) are over complicated and create a barrier in and of themselves (see point on language).

This indicates the OU systems and support is not effective, either not speaking to the right issues or is not effective in being understood by the right people (students and tutors).

The student learning experience needs to be motivating and relevant, students do not want all their learning time to be a computer narrative. This point endorses themes highlighted in a previous OU research project, where one of the key findings was that *'blended courses, with content provided via a mix of digital and print formats, were the preferred study format amongst participants and were also perceived to offer the most value'* (Dungate, 2022, p. 5)

Whilst we conclude and recognise that students share many similar needs but also many different ones, these can, at times, be in conflict with each other.

Modules and learning content are all designed independently of each other and there is little synergy between modules; this does not make sense to the student learning experience as they study towards their awards. This leads to a confusing and complex mixed use of software, hardware and skills required for each individual module; we have heard that students want consistency and clarity to learn effectively.

We found, for our participants, that disproportionately other intersectional issues such as disability, neurodivergence and poverty exacerbate these negative impacts.

We have also found that, in this context of digital poverty, technologies can also be a real enabler and that there are systems in place at the Open University to support students **However, this positive impact can be often negated when there is *slow or extended* access to that technology**, whether this is software, hardware or other technological elements, and becomes a barrier. For example, if links don't work at the student time of study – the opportunity to study might be lost (see end point)

In addition, the lack of communication between modules and departments makes information redundant, unclear and often missing, as expectations are not being met.

Informational poverty becomes more complex, and as our tutors and colleagues highlight, the OU has its own vocabulary, unique and specific to the OU; becoming *OU fluent* adds another layer to the complexities of online learning for students.

In coming together, the digital format of the information and the suitability of the hardware, together with the issue of study space, particularly for online study, has been highlighted as a key factor in the student learning experience.

Thus, clearer communication between departments, consistency, and quicker ability to react to change are essential to meet the current and future demands and needs of our students. In line with this argument, and addressing the typology of barriers to overcome digital poverty, we conclude the following:

Physical: This is not just about equipment, there is a need to improve our signposting to supporting students as to what is needed to effectively study with the OU, paying particular attention to those that need extra support.

Informational: This is about having the right information in an understandable format, for the student, at the right time on the student journey.

Time: This includes thinking about time related to and around study – provision of platforms that are nimble enough for flexible study across all devices, accommodating asynchronous and synchronous information.

Skills: Acquiring digital skills takes time and practice. There needs to be clarity about what skills are needed, when these are needed, and planning for the time for these skills acquisition.

Conclusion

Using our understanding that digital poverty is: *'the inability to interact with the online world fully, when where and how an individual needs to'* (Digital Poverty Alliance, Nd) and that digital poverty as an encompassing definition, includes physical (software and hardware), informational, time, and skills poverty: we are able to conclude that digital poverty has an overall negative impact on Open University WELS students and that the OU has a responsibility to mitigate this.

Whilst the term digital poverty aligns with the terminology in the sector, we note that OU student preference in using terminology would be to refer to these issues as digital inclusion/exclusion and skills deprivation.

As a Higher Educational Institute (HEI) the OU needs to lead through strategic statement, design and planning for a cohesive educational online learning experience for all students. Underpinning this is that the OU clarify the differences between digital poverty and digital literacy, notwithstanding the interplay between both issues, and design in educational strategies to address these as part of their overall pedagogical principles.

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Appendix 1 – Questionnaire

Dear student

We would like to invite you to complete an online survey exploring digital issues that may affect our students.

Your feedback is extremely important to us as it helps us develop and improve our support services to you and other students.

We envisage the survey will take approximately 10 minutes to complete.

As a distance learning University, we have become increasingly aware of the impact digital poverty has had on some of our students. This can mean a lack of access to a device in order to complete your work, or perhaps you don't have a regular quiet space in which to study. Or it could be that you feel you lack confidence when it comes to using technology.

We are aware there are multiple aspects and impacts of digital poverty, and so we have come together to ask, 'what is the lived experience of digital poverty for our OU students?' We believe that if we understand the realities of this, we will be better able to plan and mitigate against the impacts of digital poverty for our students. Key questions are:

- What does digital poverty mean for a Wellbeing, Languages and Sport (WELS) and OU student?
- What are the tangible outcomes of digital poverty (for the student)?
- How can the OU mitigate against digital poverty related inequitable outcomes?
- What barriers exist?
- What enablers are lacking?

We are inviting students in WELS to take part **in a survey** to help us better understand your experiences of digital poverty so that the university can work to support you.

Be assured your answers will not be linked to your studies in any way. They will be treated in the strictest confidence and used only to provide statistical information and analysis about groups of students. All response data is fully anonymised and only statistical information is retained. You can view the OU Student Privacy Notice [here](#).

If you have a disability or additional requirement that makes it difficult to complete this survey, and would like to provide feedback, please contact by email WELS-Digital-Inclusion@open.ac.uk

If you are interested in taking part in the **survey**, please read the statement below and click in the box to consent to taking part in the study and fill out the survey.

There is also an option to sign up for an **online focus group** with your peers in WELS in order to further explore your opinions and experiences. We have now two opportunities: June 7th 1-2.30pm or June 7th 7-8.30.

If you'd like to take part, you'll only need to be available for *one of these times*. Please email Wendy.Turner@open.ac.uk with the date you are available using the email subject line: Digital Poverty Focus Group

Thanks in advance for your participation!

We wish you every success with your ongoing studies and thank you in anticipation of completing the survey; your feedback is very important to us.

WELS digital inclusion research team

Data Protection Information: This project is administered under the OU's Student Privacy Policy. The Open University is incorporated by Royal Charter (RC 000391), an exempt charity in England & Wales, and a charity registered in Scotland (SC 038302). The Open University is authorised and regulated by the Financial Conduct Authority.

Please read the following statements and indicate whether you are willing/able to take part in the questionnaire:

- I have read and understood the information provided and understand what is involved in taking part in this piece of research, and how the information I provide will be used.
 - Project findings may be published in various forms, including project reports, academic journal articles, conference papers and blog posts.
 - I know who/where to ask any questions about the research or my participation.
 - I am aware that I can withdraw from the study by contacting the researcher to notify them at any time
 - I understand anything that can personally identify me will only be used for the purposes of analysing the data, e.g., Personal Identifier/Module code etc.
 - I understand that my data will be stored securely in line with the OU's data protection policy, and handled in line with the Student Privacy Policy: <https://help.open.ac.uk/documents/policies/privacy-notice>
 - 'I agree to being quoted anonymously in reports and publications related to this project.'
- 'Please contact us at our email address if you are interested in taking part in focus groups the project team are holding as part of this study.'
- 'Please provide your email address if you would like to receive a copy of the summary of the findings of this study.'

I have read all of the above statements and confirm that:

- I am willing/able to voluntarily take part in the following questionnaire and support this research study.
- I confirm that I am not willing/able to take part in the questionnaire.

p. 2 Using Technology

2 How do you normally access your course material?

- Phone
- Tablet
- PC/Mac/Laptop

3 Do you feel you have access to the best technology for your studies?

- Yes
- No

a What might make it better?

4 On a scale of one to ten how would you rate your skills using technology?

	1	2	3	4	5	6	7	8	9	10	
Not very good											Very good

5 On a scale of one to five how would you rate your confidence using technology?

	1	2	3	4	5	6	7	8	9	10	
Not very good											Very good

6 Do you find the speed at which technology progresses a concern in terms of studying online?

- Yes
- No

a Please expand

p. 3 Challenges

7. Tick as many aspects as they relate to your experience

- No access to quiet study spaces
- Unstable internet connection
- No internet at home
- Difficulty downloading large files
- Lack of confidence using technology
- Lack of knowledge using technology
- Lack of knowledge using the university VLE (module website)
- Experiencing lack of accessibility in the university VLE (module website)
- Experiencing lack of skills to understand what is required by the VLE
- Experiencing issues to navigate the VLE

8 Thinking about your previous answer, which three are the most significant to your experience? Ranked 1-3 with 1 the most significant aspect. Which has been the most challenging?

	1	2	3
No access to a PC/MAC/laptop			
No access to quiet study spaces			
Unstable internet connection			
No internet at home			

15 On a scale of 1 to 10 how well do you feel supported by the Open University when experiencing digital poverty?

	1	2	3	4	5	6	7	8	9	10	
Not very much											Very much

16 What more can the OU do to support students who are experiencing digital poverty?

17 Which of the below would you like to see in place? Tick as many as you want

- Training sessions to help students study using the VLE (module website)
- Training sessions for help using your devices (PCs, MACs and laptops)
- Training sessions for those using mobile phones only
- More attention paid to accessibility of mobile users when it comes to module production
- Availability of devices such as laptops
- Easy access to information about support for those experiencing digital poverty

18 The pandemic has highlighted the issue of digital poverty, however this is not a one off problem. Do you require support which goes beyond the pandemic?

- Yes
- No

a Please expand

19 If 'print on demand' is available on your modules, do you use this?

- Yes
- No

20 On a scale of 1 to 10 how important is the print on demand service for you?

	1	2	3	4	5	6	7	8	9	10	
Not very much											Very much

p. 6 Identity and disadvantage

21 Do you think that one of these identities is mostly likely to contribute towards digital poverty in your experience?

- Ethnicity
- Disability
- Low Income
- Neurodiversity
- Other

a If you selected Other, please specify:

22 Digital poverty can also disadvantage in other areas such as applying for jobs. Has this happened to you?

- Yes
- No

23 Have you experienced other difficulties outside of studying and applying for jobs?

- Yes
- No

a Please expand

p. 7 Demographics

24 Age

25 Gender

- Male
- Female
- Other

a If you selected Other, please specify:

26 Ethnicity

- Indian
- Pakistani
- Bangladeshi
- Chinese
- Black, Black British, Caribbean or African Caribbean
- African
- Any other Black, Black British, or Caribbean background
- White and Black Caribbean
- White and Black African
- White and Asian
- Any other Mixed or multiple ethnic background
- White English, Welsh, Scottish, Northern Irish or British Irish
- Gypsy or Irish Traveller
- Roma
- Any other White background
- Arab
- Any other ethnic group

27 Disability

- Yes
- No

a Please specify:

28 Neurodiversity

- Yes
- No

a Please specify

29 Are you new or a continuing student?

30 If you are a continuing student, how many modules have you studied with the OU?

p. 8 Final page

Thank you

We wish you every success with your studies.

If you have any queries regarding your Open University studies, please contact your Module Tutor or Student Support Team.

Please click on the 'Next' button below to leave the survey. You will then be redirected to The Open University website where you can either just close the browser, or continue using the website.

Appendix 2 - Theory of change recommendations for practical, organic and sustainable solutions to reduce digital poverty

Theory of Change recommendations	Timeline	Short term	Mid term	Long term	
Curriculum improvements		<i>Clearer expectations and offer support for new tech skills development (creating materials such as PowerPoints or screen cast)</i>			
		Use feedback templates and marking grids to include digital skills, knowledge and use which could be linked to the data skills template already existent in some module 'Resources'.			
		Release all module materials (not LG content) at the same time			
		Mainstream of audiobooks availability			
			Badged open courses could be used more in learning activities and reflected (include the badge) as part of assessment (TMA)		
			Open learn packages which include 'how to study using technology' could be expanded in the introductory courses for students.		

Theory	Timeline	Short term	Mid term	Long term
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of Change recommendations				
Inclusive Learning Design (platforms)	Use of mainstream platforms integrated in the modules.			
	Provision of uniformity in the platforms (updated devices, macs and older versions)			
	Ensure that the provision of content works across different devices, e.g., PC/Apple and phone.			
	Provide a logical search system (including key terms) to find answers / links / support.			
	Clear differentiation of needs between Level 1 and Level 2 modules (and beyond) if there are any – transparency in communicating this in each module and across the University			

Theory of Change recommendations	Timeline	Short term	Mid term	Long term
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University operational strategies on readiness for study	Provision of a FAQs in the Computing Helpdesk informed by the most popular demands made by the students			
	Develop a FAQ - how to download and save...how to switch on subtitles...how to find a tutorial recording ...how do I join a Teams meeting... What is in place			
		Provide online sessions during the Summer prior to the start of the academic year in October, problem solving and instructing students how to make the most of the software that is available during their studies		
		Have a spoken work and diagrams 'how to' guide to help students and AL resolve IT issues		
	Make prompt delivery of economic grants			
	Make prompt delivery of adaptive technology when needed			
	Increase transparency in accessing adaptive technology when needed			

Theory of Change recommendations	Timeline	Short term	Mid term	Long term
		Clarification of specific hardware needed for the module (increase visibility)		

University operational strategies on readiness for study	Clarification of the skills that will be covered in each module (increase visibility in the VLE)		
		Develop the general OU approach and pedagogy where distance learning and technical skills are intertwined and responsive to current norms, e.g., using podcasts or webcasts in activities and assessments.	
	Develop peer support for tech skills and knowledge (students as well as staff)		
	Decide what takes priority between content, skills, and/or use of technology and present effective ways to support students and staff – through training and economic support to purchase appropriate equipment		
	Information and Support for ALs to have appropriate software and hardware to deliver modules online to a variety of users' needs		
	Clear access to information and services by ALs to support higher need students		
	Clear access to collective information and services by ALs regarding demographics of students per module and their needs (to avoid assumptions)		

Theory of Change recommendations	Timeline	Short term	Mid term	Long term
Dissemination of solutions based on		Definition of what digital poverty is, differentiating digital poverty and digital literacy		
		Develop model student personae that could be used to help course		

recommendations to improve student support	and content design (such as how they study digitally).		
	Provide clear guidance to students about the support that is on offer whether they are or not in receipt of DSA, e.g. Daisy books, binding options for books, alternative technology, mental health, academic services. The information is there but the knowledge is not generalised.		
	Reduce extraneous information sent to the students, particularly at the beginning of the academic year, so that students can access related details to their modules, tutors and situation quicker		

Theory of Change recommendation	Timeline	Short term	Mid term	Long term
Mitigate academic impact of digital poverty		University wide approach so that deadlines, essential information and contacts are positioned on top priority to be disseminated to the students in a timely manner		
		Develop a virtual community (tech and social) along the same lines of what is done in conventional universities What is in place		
		Provision of practical recommendations on device / platform (rather than specifications which are not always understandable).		
			Partnerships between the OU and retailers to facilitate deals and offers to help study	

		access, which are more easily accessible and does not require a long bureaucratic procedure and it is provided timely.	
		<p>Make recommendations to use public services (libraries) or creating partnerships to allow a wider access to new technologies such as MIND 'get to know your gadget' or Sconul</p> <p>What is in place: The Sconul team is advertised on module webpages and included in the Being an OU Student BoC ALs are also being encouraged to signpost students</p> <p>Library report. Information about the scheme can be found here.</p>	
			Close progression gaps for students experiencing Digital Poverty
			Close awarding gaps for students experiencing Digital Poverty
			Improve retention for students experiencing Digital Poverty
Creation of APS marker for digital poverty, to facilitate targeted support for students			