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# Experiences of (re)developing an online Digital Skills Awareness Course: Practical implications for supporting widespread implementation of open educational resources

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ABSTRACT

Open educational resources (OERs) are materials made freely available for others to use and adapt to support their educational practices. In 2019, the Bloomsbury Learning Exchange (BLE) created a Digital Skills Awareness Course (DSAC) to support digital skills development and transition into Higher Education (HE) for students across its six partner institutions in London. Subsequently, the BLE took the unusual step to release the entire course as an OER thereby making it available for educators across UK HE to use and edit to fit their own educational context. Five years on, this study sought to evaluate how and in which contexts the DSAC had been implemented across UK HE institutions using an explanatory mixed-methods approach.

We conducted an online survey of those who had signed up to receive a copy of the course (n = 54). Of the twelve respondents, eleven had implemented the DSAC at their institution and edited the course to include links to institution-specific support and resources. To further interrogate participants' experiences of using the course, we conducted five semi-structured interviews and, using thematic analysis, identified two themes that captured participants' experiences: 'The DSAC lays the foundation to explore digital capabilities' and 'It's me driving it forward (with the help of others)'.

This case study demonstrates that the DSAC provides a much-needed starting point for professional and academic staff to implement digital skills training for new students. We found that the DSAC was being used both as a generic institutional or discipline-specific course and that learning technology and senior management support was integral to successful implementation. Future work should include staff-student partnership to further develop the resource and should seek to explore how best practices and iterative changes to OERs can be shared back to the community, ensuring that materials remain relevant for adopters and tomorrow's students.

**Keywords:** digital skills, transition, student induction, online learning, open educational resources (OER)

## Introduction

### Digital skills are essential for today's students

Competencies using digital tools are essential attributes for student success in higher education (HE) and for employability Jisc (n.d.-a). According to Jisc (n.d.-b), digital skills or capabilities (terms we use interchangeably in this article) encompass:

- basic proficiency in fundamental computer applications for basic administrative tasks (word processing, spreadsheets, email),
- use of digital communication and collaboration tools (e.g. online conferencing and networking tools such as Zoom and Microsoft Teams),
- digital creativity such as media production,
- critical evaluation of information retrieved from the internet,
- digital learning and development, and
- digital identity and wellbeing.

Students in HE are expected to be digitally capable primarily so that they can learn effectively and meaningfully engage with course materials which are increasingly delivered online or via a blended model (a mix of online and in-person). The need for students to manage their own learning in a flexible and personalised way was accelerated by the pivot to online during the Covid-19 pandemic (Beetham & MacNeill, 2023). Furthermore, a rise in widely available technologies such as generative artificial intelligence (AI) has the potential to transform education and require a sophisticated level of digital skills and ethical awareness for learning and the workplace (Pelletier et al., 2024).

In HE, the increasing use of digital technology to deliver teaching and support learning highlights a need for educators to clearly communicate specific digital skill requirements to their students. In addition, educators should create opportunities for students to assess their digital capabilities and, where necessary, offer specialised support and training to scaffold students' digital skills development. One potential mechanism for this is the Jisc (n.d.-c) Discovery Tool, available since 2018 to subscribing institutions only, which allows staff and students to self-assess their proficiency across a range of digital capabilities. The ongoing issue of the 'digital divide' (Barber et al., 2021), with students having inequitable access to digital hardware and software, means that institutional support for developing students' digital literacies is becoming even more important.

### Open educational resources (OERs)

One way to ensure access to digital skills support for students in HE is to use an OER approach. The term 'Open Education Resources' (OERs) describes materials which have been produced to support learning, teaching and research that others are permitted to use and adapt (UNESCO, 2002). Philosophically, the aim of producing, sharing and disseminating OERs is to make quality educational resources more widely available, especially to those who might otherwise struggle to create, find, or access them. They can help to provide a better standard of education that is equitable, inclusive, open and participatory, enhancing the "academic freedom and professional autonomy of teachers" (UNESCO, 2019). However, there are some

caveats: for example, OER materials must be regularly updated and/or maintained, be in some way visible or advertised to be effectively disseminated and also easy for users to implement. Institutional support is central to encourage use and/or adaptation of OERs (Hylen, 2006; Murphy, 2013; Swain & Pathak, 2024).

OERs evolved out of Open Courseware (OCW), which was originally founded at MIT, and later adopted by a consortium of institutions - the Open Courseware Consortium, known today as Open Education Global (OEGlobal, n.d.). The key intention behind OCW was to share the content of whole courses. Another precursor of OERs was the movement for Reusable Learning Objects (RLOs), which typically involved small units of learning content which in theory could be added into courses in a 'plug and play' style. OERs on the other hand might come in the shape of a course, a file, or even a single image. Repositories such as MERLOT and JORUM emerged to house and distribute RLOs and OERs but the idea of sharing whole courses also continued to grow. In 2008 universities began to develop Massive Open Online Courses (MOOCs) which are open to anyone to study (Siemens, 2013). In addition to its suite of MOOCs, the Open University extended the OCW model by putting OER courses online in a format where people could self-study and complete them, gaining digital badges of recognition.

The Creative Commons (CC) organisation, with its aim to create open access to knowledge and culture, provides a standardised framework and licensing system for sharing intellectual property of all kinds (Creative Commons, 2024). Creators of OERs frequently employ one of the CC licences to clarify the terms under which their materials can be shared and used (Swain & Pathak, 2024). The CC licensing framework has become the 'gold standard' for OER distribution due to its comprehensive suite of alternative licensing options (Havemann, 2016).

Legally, creators of OERs apply a licence to declare that their materials can be re-used and re-purposed with the usual caveats that an acknowledgement is made to credit the authorship and that no commercial profit is made from the resource, if a non-commercial attribution is applied. In this way, not only have the materials been shared but they have been made openly available for reuse and adaptation (Patel et al., 2023).

## The digital skills awareness course (DSAC): a unique OER

The key to successful OERs is their relevance in a wide variety of contexts. One way to increase relevance is by building in opportunities for adopters to shape the resource to suit their own needs. In 2019, the Bloomsbury Learning Exchange (BLE), an unincorporated association working as a partnership of six co-located HE institutions in Bloomsbury, central London (Birkbeck, LSHTM, RVC, SOAS, UCL and the University of London; https://www.ble.ac.uk) released a Digital Skills Awareness Course (DSAC) for students at its institutions. The BLE is a collaborative digital education service, which exists to share practice between its partners and enable collaboration on technology-enhanced learning projects.

The DSAC aims to help students become aware of their digital skills, knowledge and capabilities and identify individual training needs for them to be successful in their studies. The DSAC was initially conceived to support the BLE's partner institutions; making it available across the United Kingdom (UK) was a logical step from the internal sharing already built into the resource, which is aligned with the BLE's ethos of sharing good practice.

The BLE created its own agreement for use, based on the CC licence, to ensure that any adaptations made by others would not be further disseminated under the BLE's attribution. New adopters must come to the source for the original (master) version of the course, and then are able to transform it according to their

own needs. The benefit to the BLE (and to the resource itself) was establishing the DSAC as a community project whereby adopters offered feedback, reported problems and shared revisions, feeding into later versions of the master course. Thus, the course continues to evolve and improve without losing its original integrity, and this is what makes the DSAC approach unusual: that the development is driven by a user community.

The DSAC was released as an OER in 2019 and promoted to HE professionals in the UK as available to implement and customise at their own institutions to support distinct student cohorts (McIntyre et al., 2023). A comprehensive overview of the DSAC is available on YouTube: https://www.youtube.com/watch?v=r5vfjU1UcVA (Architela, 2019).

### *About the digital skills awareness course (DSAC)*

The idea for the course came from learning technology support staff amongst the BLE member institutions, many of whom joined the working group and helped to steer the content and coverage. They indicated the areas that many students sought help because they found them unfamiliar and difficult to navigate or understand. Ultimately, the course structure became:

**I. General Technologies**
Working with files, Microsoft Office applications, browsers and search engines

**II. Learning Technologies**
Online learning environments, forums, assignments/assessments and video

**III. Access, Sharing and Safety**
Accounts/access, safety, social media and sharing

**IV. Getting Organised**
Notetaking, referencing and digital wellbeing

The general content of the course is widely applicable, indicating where an adopter would need to add localised information at various points within the course, as well as allowing more extensive changes. To do this, the BLE provided a ‘course map’ to accompany the file download of the DSAC, to assist individuals with the localisation of the course. The course map briefly outlines the DSAC structure and contents, highlighting where users can add institutional links to support services, for example. Suggestions for localisation were also indicated within the DSAC itself (Figure 1). Given the OER nature of the DSAC, this study sought to evaluate its uptake and use.

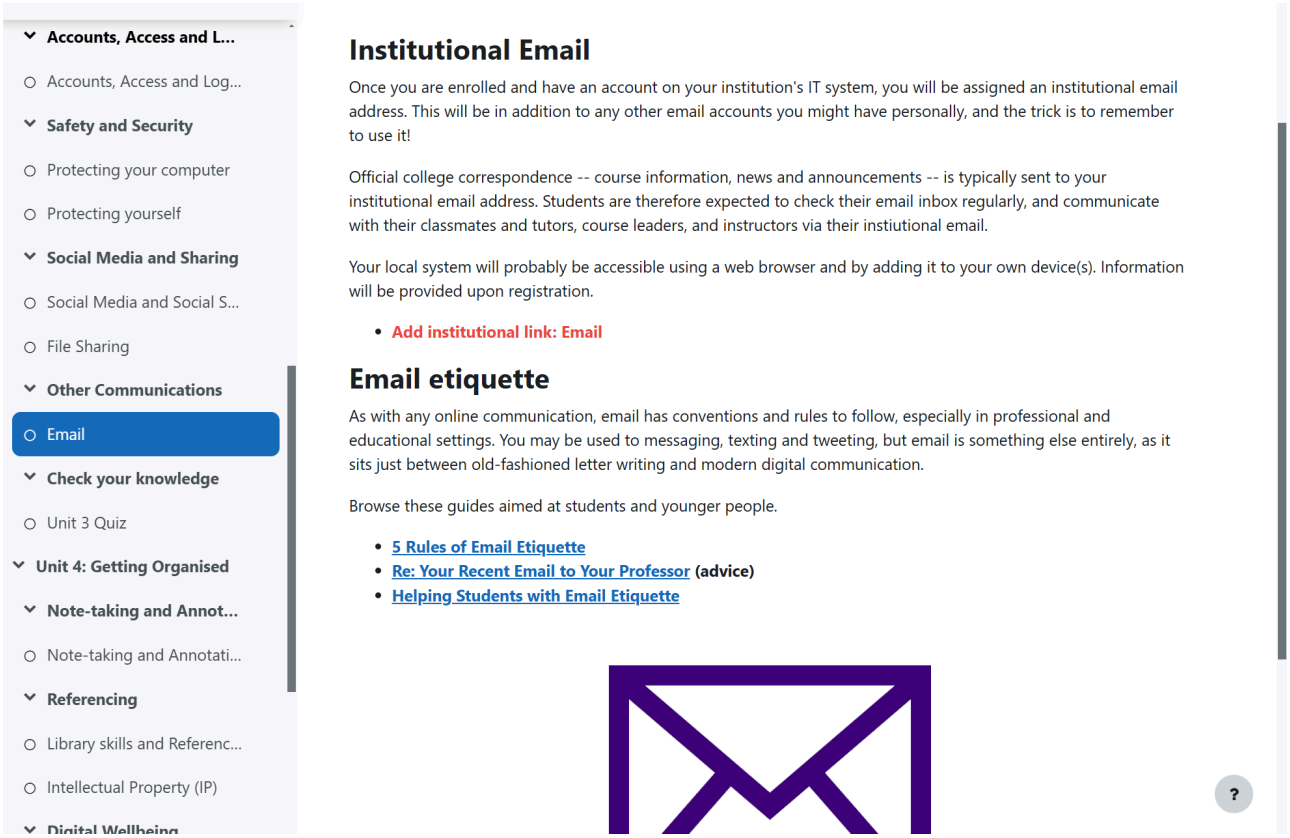


**Figure 1** Screenshot of the master version of the DSAC, which indicates where course adopters can personalise the course content (red text).

## Methods

### Study design

Following previous studies exploring the student experience (McIntyre, 2020; McIntyre & O'Neill, 2022), the overarching aim of this case study was to gain insight into the experiences of staff who have implemented the DSAC across UK HE institutions.

Our research questions were:

1. In which institutions and contexts has the DSAC been implemented across the UK HE sector?
2. What are adopters' experiences of implementing and/or adapting the course?

This study was underpinned by a constructivist epistemological position. We took a sequential explanatory, mixed methods approach to examine individual experiences of using the DSAC (Jones et al., 2013). An explanatory design was appropriate to gain initial insight into the topic through descriptive data. An online survey of BLE DSAC JiscMail email list members was conducted first to obtain descriptive data and therefore an overall understanding of adopters' experiences. Subsequent semi-structured interviews enabled an in-depth analysis of staff experiences across different job groups. All authors contributed to the design of the survey and interview proforma.

### Ethics approval

Ethical approval for the study was granted by the College of Medical, Veterinary and Life Sciences, University of Glasgow (application number: 200220118). Author KM is the principal researcher. Data summaries, and not raw data, were shared with external collaborators at the BLE (authors NW and SS).

### Participants

Participants were recruited via the BLE DSAC JiscMail list (54 subscribers at the time of the study, excluding members of the research team) by email from author NW. Three reminder emails were sent. Subscription to the mailing list is a mandatory requirement for colleagues who request a copy of the DSAC. However, individuals can choose to unsubscribe at any time. The mailing list is used to announce course updates, request occasional feedback, and is intended to create a community of practice.

### Data collection

#### *Online survey*

Data were collected using an online survey on the platform Qualtrics (https://www.qualtrics.com). A participant information sheet outlined the purpose of the study and the data management plan. After giving consent to take part in the study, participants were asked:

- to share how they heard about the DSAC and whether they had implemented it in their institution:
    - Participants who had not implemented the course were directed to a question exploring barriers to implementation and then to the survey's closing section (outlined below);
    - Participants who had used the course were asked to share which students and/or degree programmes the DSAC was used to support, and to describe their role in implementing the course;
- whether or how participants tailored aspects of the course and if they used the course map provided by the BLE to assist in this process;
- to share any difficulties they encountered when implementing the DSAC;
- to rate how likely they were to recommend the course to a colleague as a mechanism to calculate the Net Promoter Score, which gives an indication of the likelihood of a participant recommending the course to a colleague (NICE Satmetrix, 2021);
- in the closing section, to explore elements of the DSAC that participants deemed beneficial, and suggestions for improvement, through three open-ended questions;
- to complete a demographics section (institution, job role); and
- to provide their email address if they were willing to be contacted about a follow-up semi-structured interview.

Participants were able to respond to questions voluntarily or skip questions. We took this pragmatic approach in recognition that subscribers to the BLE DSAC JiscMail list may have had differing roles in the implementation or ongoing support of the course at their institution. A copy of the online survey can be viewed in Appendix I.

*Semi-structured interviews*

Individuals who indicated their willingness to participate in a follow-up semi-structured interview were contacted by author KM via email and sent up to two reminder emails. Individuals who agreed to interview were emailed a participant information sheet and consent form which outlined the study scope and data management plan. Consent was obtained by signed consent form.

Semi-structured interviews were conducted on Zoom and recorded to the University of Glasgow institutional Cloud. All interviews followed a topic guide (Appendix II) developed by the study authors, which explored: 1) individuals' experiences of using and/or adapting the DSAC for their institution and/or department; 2) changes made to the course; and 3) the availability of information and support to adapt and/or implement the DSAC. All interviews started with an overview of the interview purpose and reiterating interviewees' willingness to participate and consent, and closed with an opportunity for questions or discussion of topics the interviewee would like to share.

Interview video recordings were transcribed verbatim by author KM and subsequently deleted. Transcripts were anonymised for the purpose of analysis and publication.

## Reflexivity statement

The qualitative analysis in this study was conducted by authors KM and VHD. KM was an early adopter of the DSAC, first implementing it to support her undergraduate students at the University of Glasgow in September 2019. She was not involved in the initial design of the DSAC. She has written about the positive experiences and challenges of implementing the DSAC (McIntyre, 2020; McIntyre & O'Neill, 2022). It is therefore likely that KM's personal attitude and views about the DSAC will have influenced her interaction with the data in the current study. Her personal experiences using and adapting the course enabled her to ask specific follow-up questions when interviewing study participants. KM was a teaching-focused academic for five years (including at the time of data collection for this study) and now works in an academic development role.

VHD has worked in the learning technology arena for over 30 years (initially as an educational technologist and then academic developer) and is an experienced SoTL (Scholarship of Teaching and Learning) practitioner. In her current role, she promotes the effective use of technology-enhanced learning to support active learning.

## Data analysis

Descriptive statistics were generated from the quantitative data collected via the Qualtrics online survey platform. Figure 2 was created using R studio using R version 4.4.0. Semi-structured interview data were analysed using reflexive thematic analysis (Braun et al., 2022). KM transcribed the interviews then read and re-read the transcripts to familiarize herself with the data. Next, an inductive approach was used to code the data on paper. After initially coding on paper, KM moved to coding using NVivo14 software (QSR International Pty Ltd.), at which point codes were further organised and KM began to create broad themes. Following initial analysis, KM met with VHD to discuss the key ideas and themes from the data. VHD then separately coded the data in NVivo 14, reading through the transcripts initially, identifying individual codes, which were then grouped into categories. KM and VHD met to discuss their analyses and through several

discussions negotiated the final themes, which were further refined through the process of writing the analysis.

## Results and discussion

### Online survey

Twelve individuals participated in the research survey (22% of mailing list subscribers). The number of responses collected for each question was between 6-12. Most survey respondents (92%, 11/12) had implemented the DSAC in their institution. The participant who did not implement the DSAC selected the response "lack of institutional/ departmental buy-in" as the barrier to implementation. A summary of the quantitative findings is presented in Table 1, which also summarises an overview of survey participant characteristics and how individuals implemented and adapted the DSAC.

**Table 1** Summary of survey participants' characteristics and use of the Digital Skills Awareness Course (DSAC)

| Participant characteristic or experience of implementing the Digital Skills Awareness Course (DSAC) | Question respondents<br>n = 8-12 |
|---|---|
| Job role at institution | |
| Academic staff (research and teaching) | 0 |
| Academic staff (teaching only/teaching and scholarship) | 2 |
| Administrator | 0 |
| Learning technologist or IT professional | 4 |
| Technician | 0 |
| Not listed | 2 |
| Implemented course | |
| Yes | 11 |
| No | 1 |
| Role in course implementation | |
| Led implementation | 10 |
| Supported implementation | 1 |
| Course purpose and implementation | |
| Bespoke; for a specific course or degree programme | 1 |
| Institutional or department-wide; for multiple degree programmes | 9 |
| Used course map to support course adaptation | |
| Yes | 5 |
| No | 6 |
| Experienced difficulties editing or implementing the course | |

| | |
|---|---|
| Yes | 4 |
| No | 7 |

Most survey respondents led course implementation in their institution (91%, 10/11) rather than acting in a support role (9%, 1/11). Participants who implemented the DSAC were in learning technology, IT or teaching-focused academic positions at their institutions (Table 1).

Just over half the survey respondents used the course map to assist them with course adaptation (55%, 6/11). Of participants who completed the next section of the survey, 100% (10/10) added weblinks to institutional services (Figure 2) in their version of the course. Six respondents (60%) created some new content such as quizzes or videos, and two (20%) created new course units. Half of the respondents (5/10, 50%) made updates to the DSAC course material.

Other changes made by participants include embedding new quizzes or videos, updating core DSAC content or creating new unit(s). Providing options and examples of how individuals can adapt the course alongside multiple tools to support this (course map, instructions in the DSAC itself) appears to have empowered individuals to make the choice that was best in their context.

These data suggest that providing clear guidance on how and where to personalise generic OER material supports individuals to provide institution- or department-specific information, previously reported as an asset for students (McIntyre & O'Neill, 2022). The ability for course adopters to reuse and adapt the course framework for their own contexts is valuable for educators who lack resources to create material from scratch.

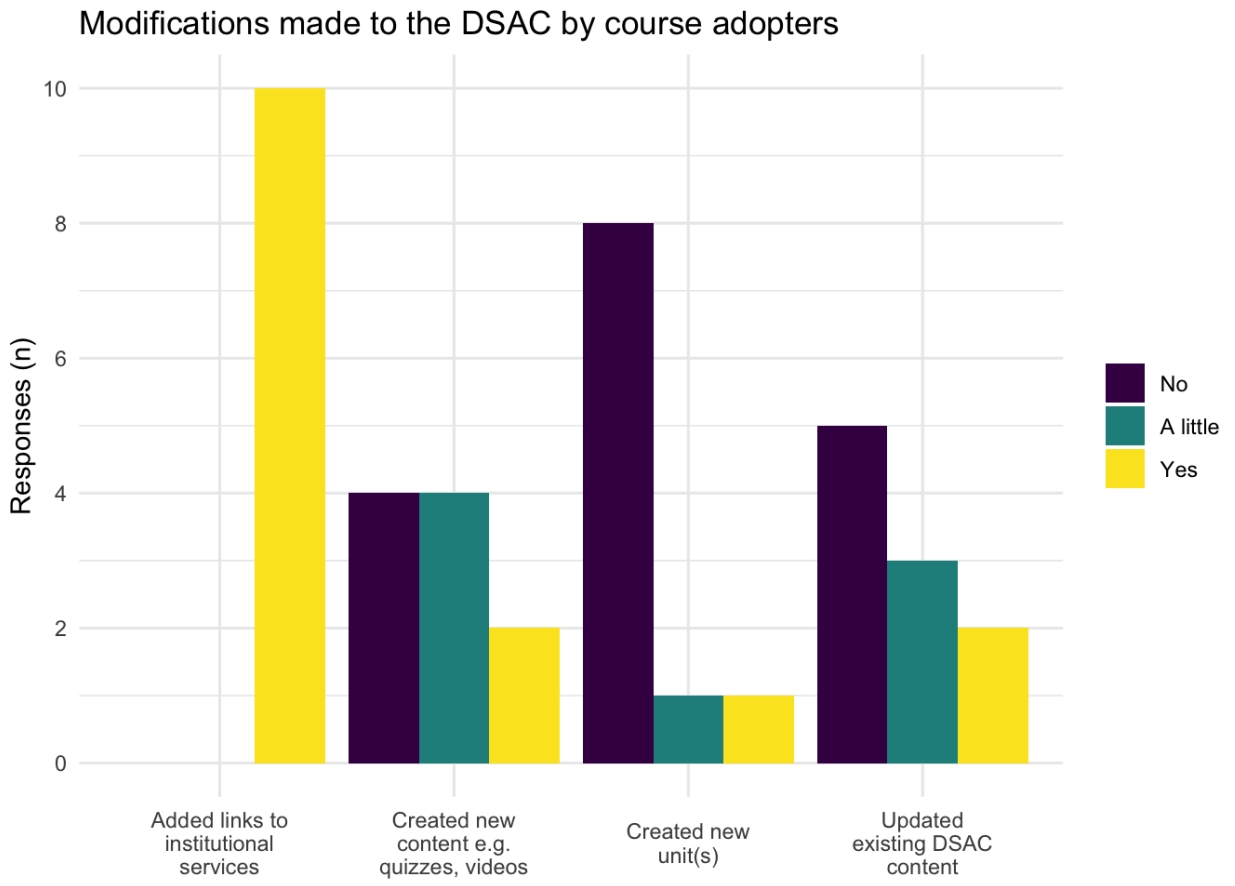


**Figure 2** Types of modifications made by survey participants to their version of the DSAC. Ten complete responses were received for this item of the survey.

Despite the apparent level of localisation, a few participants (36%, 4/11) disclosed that they experienced difficulties editing or implementing the DSAC for their students. Open text responses indicated that issues experienced related to incompatibility with their institutional virtual learning environment (VLE). The DSAC was created in Moodle. Therefore, those working at institutions that use a different VLE (e.g. Blackboard) had to recreate and/or edit the DSAC to implement it in their institution. There were varying approaches to navigating this challenge. One participant re-created the course on their institutional Microsoft SharePoint so that unenrolled students could access it without an institutional login. The BLE released a FutureLearn version of the course in 2022 (Digital Skills Awareness for Starting Higher Education (DSASHE)) to allow global access and address issues of software (in)compatibility. However, as discussed above and previously, a perk of the DSAC OER is that educators can edit the content to facilitate student induction to the institution and familiarisation with VLE platforms (McIntyre & O'Neill, 2022).

### Semi-structured interviews

Individual semi-structured interviews allowed the research team to explore participants' experiences in more detail. Five people who completed the online survey participated in individual interviews. We developed two main themes that describe the participants' experiences. These were: 'The Digital Skills Awareness Course lays the foundation to explore digital capabilities' and 'It's me driving it forward (with the help of others)'. The categories identified under each theme are presented in Tables 2 and 3.

*The DSAC lays the foundation to explore digital capabilities*

Primarily, the DSAC enabled participants to implement digital skills support for their students whilst requiring limited resources and time investment (see Table 2 for illustrative quotes). Several participants remarked that they would not have been able to implement a similar course otherwise. The DSAC freed up time for participants to innovate, providing a free alternative to paid-for solutions. Efficiency, including timesaving, has been identified as influencing educators' uptake of OERs, alongside appeal, extension and effectiveness (Jung & Hong, 2016). Participants valued the structure of the DSAC as well as the flexibility to change as much or as little as they wanted or had time for. All participants had run the course for multiple years, which allowed them to make iterative changes to the course year on year in response to evolving student needs and/or student feedback. By releasing the DSAC as an OER under CC licensing, the BLE empowered participants to adapt and repurpose the DSAC to meet institutional or departmental needs.

It was perceived that the DSAC offered an established framework or primer upon which subsequent digital skills training could be built. The DSAC laid the foundation for staff to offer bespoke support for incoming students and became the first step in digital skills development for their students. Participants shared how the course served as a primer for the Jisc digital capabilities tool (Jisc, n.d.-c) and as a signpost for future training or support offered in-house by institutions. Effective transition support for incoming students combines opportunities to develop both academic skills and social connections to forge a sense of belonging in the academic community (Thomas, 2012). To bolster a sense of belonging, one participant removed the quizzes from the DSAC Master version and added social forums. The forums offered a way for students to interact socially with their peers and to begin to consider discipline-specific topics such as professionalism and their digital footprint. Students were able to get "a bit of a feel for what they were coming into" and establish a sense of community with their peers. In contrast, another participant implemented the DSAC for their institution in 2019, which has remained largely unchanged aside from suggested updates shared by the BLE via the mailing list.

The localisation of the OER helped participants to make the course 'theirs', as something that is specific to their students. There were differences in how staff implemented the course; participants shared experiences of implementing the DSAC with few changes, or as a specific version of the course to support a particular student cohort, as outlined above. It is notable that those in a learning technology or IT professional role adopted the DSAC as a generic resource for all incoming students across an institution, while academic adopters contextualised the DSAC within a specific discipline. This disparity may be, at least in part, related to the fact that the learning technologists or IT professionals interviewed were found in central units versus the academics positioned in smaller departments.

**Table 2** Data extracts for theme

| The Digital Skills Awareness Course lays the foundation to explore digital capabilities | |
|---|---|
| An existing framework to build upon | "…it still saved us a massive amount of work. If we had to try and create something like that from the ground up ourselves, you know, it would have taken probably 10 times as long as it did. At least we had the materials, we had the videos, we had the text and the links and stuff." (P1, learning technologist or IT professional) |
| | "...even just having it, even just having the structure there was brilliant because you could then look at it and go "well at least we've covered the basics so anything else on |

| | |
|---|---|
| | top of this is good", [...] [it] gave you that confidence that you hadn't missed anything fundamental." (P4, academic staff) |
| | "That's how I see it, anyway, because [...] once you're here as a student, you can elect to follow the different pathways that the capabilities [Jisc Digital Capabilities tool] offers you. But if you don't know, what you need to know, [laughs] I feel like the skills awareness course really lays that like foundation." (P2, learning technologist or IT professional) |
| An OER is flexible, there was freedom to adapt as much or little as you want | "I mean, most of the changes were quite small, really, I mean significant, but not a massive job, because a lot of the information is quite general anyway. I'd say I don't know what percentage [shrugs] but over 90% of the stuff we just reused, and it was mostly just links to [...] our own VLE pages. So anywhere like a specific service was mentioned or could be mentioned we'd give a little bit of information and then obviously link to our own service pages." (P1, learning technologist or IT professional) |
| | "Um again here, I haven't really made too many changes to it, because I think the basic structure is so nice and I kind of [pauses] yeah, I don't. I haven't." (P2, learning technologist or IT professional) |
| | "It's been quite iterative, really, initially I basically started with it and went through and added in [...], "this is what we do at [our institution]" type things. And sort of over the years I've just added more. [...] we've got a video from the library that I've included which I've added into the library section. [...] So it's really taking the digital skills awareness as a kind of a starting point to kind of fill in what we do in those areas. [...] the idea being that, once they get into their studies, if they do have a problem and they can't find out where to find where to find help, [...] it's been signposted within that course. So maybe they'll remember, "Oh, it was in that, wasn't it?" So they can go back and have a look quite easily." (P5, academic staff) |
| | "We took out a lot of the quizzes [...] based on feedback. And [...] students said they wanted to do things a bit more specific to [their course]. What we did rather than the quizzes is we added a social forum at the end of every section. [...] And then at the end of each section, rather than a quiz it was [course]-related questions. They weren't compulsory. But again, if you did them all, you got the badge." (P4, academic staff) |

*It's me driving it forward (with the help of others)*

Participants largely felt that they were responsible for the DSAC in their institution or their department (Table 3). The course was something that they had to promote and garner support for. Whilst it was generally the reported experience of participants that they were a key staff member driving the use and implementation of the course, the skills needed required coordination across educational support roles (learning technology, IT support) and senior management. Support of senior management is essential in rolling out institution-wide learning technology interventions. In a qualitative study of academics and

support staff leading or supporting an institution-wide blended learning initiative, management and organisational support was considered one of key institutional factors influencing success (Adekola et al., 2017), alongside support from learning technologists or IT professionals. Institutional support was also highlighted in a literature review of OER adoption benefits and challenges by Swain & Pathak (2024).

The DSAC is somewhat unique as an OER in that it is offered as a full course for individuals to download and adapt as they see fit; either directing their students to the independent FutureLearn version (DSASHE) or implementing a variation of it into their own VLE. The main technical barrier encountered related to the challenge in migrating the DSAC into the institutional VLE when this was not Moodle. In such instances, participants were reliant on colleagues, such as the local educational technology team, or central IT, to help them import the DSAC. There was also no version control in terms of how changes or updates were implemented; this tended to be sporadic.

The findings of this study align with previous work that collaboration and communication are key to supporting successful adoption of OERs (McIntyre & O'Neill, 2022). To support this, some participants requested ongoing inter-institutional community support, commenting that the existing mailing list did not facilitate collaboration or the exchange of ideas and innovations. Havemann et al. (2023, p.310) discuss the value of communities of practice to facilitate collaboration and co-production of educational materials. They argue that this type of approach to openness, which has received less research attention than OER, is vital to ensuring the longevity of the open practice movement in education; that "what is produced might well be community, just as much as content".

**Table 3** Data extracts for theme 2

| It's me driving it forward (with the help of others) | |
|---|---|
| 'I was on my own' | "Well, up until this year I was on my own. Um, there was, [someone] who got involved for a while, but then [they] moved on [...] but this year it's been much more, I would say team effort, there's been more discussion about what's going on." (P5, academic staff) |
| | "[...] it was me. So when you imported it [the DSAC course] there [were] bits that were kind of red [gestures]. So I just changed those bits. [...] I brought it in and kind of did the tweaks. But it wasn't a lot of time. And as I said, I don't think we've updated it either, because I know I've not been back in and looked after it." (P3, learning technologist or IT professional) |
| Learning technology expertise is required for implementation | "So I contacted our learning tech team […] and they looked if there was a simple way of getting [the DSAC] into our system, and there really wasn't. [...] things like quizzes were corrupted, or just weren't displaying. So we had all the content there, just in lots of different folders, and that was the job that the intern did of then move that stuff, get the course created, and then put it in a sensible order. [...] a bit laborious. (P1, learning technologist or IT professional) |
| | "[...] our own educational design and engagement team who look after Learn […] managed to get most of the content, at least, extracted." (P1, learning technologist or IT professional) |
| Buy-in from senior management is essential | "in terms of implementing it, the biggest hurdle really was convincing senior management to trust that this was a free product that was viable, useful, and worth the commitment of my time and various other staff's time to implement it ." (P2, learning technologist or IT professional) |

## Recommendations for practice

Based on the findings of the survey and interviews, and reflecting on the process of developing, adapting and evaluating the DSAC, we would recommend the following:

- Creators of OERs such as the DSAC need to consider copyright in relation to the distribution of learning resources. Creative Commons (CC) licensing has many variations, enabling adopters to make derivatives as appropriate. Key to the CC movement is attribution in terms of the CC BY element; the originating developers/institution should retain authorship and be able to monitor who has subsequently used and adapted the resource.
- For adopters of the DSAC specifically, it is worth considering the technical adaptation and associated requirement for learning technology/IT support. Is it appropriate to develop a bespoke version for the institution, or is it more feasible to direct students to the FutureLearn version which is not locally contextualised?

- Adopting institutions, and creators of OERs, need a supportive institution with the backing of senior management, and learning technologists, to commit to the ethos of OER and the time required for creation and adoption.
- OERs based on rapidly evolving fields such as learning technology need to be regularly reviewed to maintain currency. An example of technology that needs to be incorporated into the next version of the DSAC is generative AI.
- Accompanying the need to maintain the currency of the OER is a need for ongoing evaluation to assess the extent of adoption and changing user requirements.

### Study limitations

This study is limited by the lack of perspectives of potential adopters who chose not to implement the DSAC for their students. Except for one survey respondent, all participants in this study used the DSAC. For this reason, we are unable to fully explore barriers to OER adoption in the current study. Another limitation of the study was that in the survey we did not provide opportunity for adopters to distinguish between departmental or institutional adoption.

As this was a case study, largely qualitative, the outcomes of this study are not intended to be generalisable. However, effort has been expended to provide a rich description of the context, and aid trustworthiness through reflexivity and transparency, in the hope that the recommendations of the study will be transferable to other institutions.

## Conclusions and future directions

In relation to the first research question, we sought to explore where the DSAC has been implemented across UK HE institutions. The responses to demographic questions in the online survey were incomplete, however, responses received indicated that the DSAC had been adopted across at least six institutions, of which two were members of the BLE. Although it is not possible to ascertain the reasons why the DSAC course has not been more widely adopted, it is possible that an element of the ‘not invented here syndrome’ (West & Bogers, 2014) has been at play, or that potential adopters were not aware of – or not had time to consider – the OER (Swain & Pathak, 2024). An alternative reason that the DSAC was not adopted in other institutions could reflect that in this study, a single person was leading the initiative at their institution. This can be an exhausting experience; and the 'emotional work’ associated with being an early adopter of a technology-enhanced learning initiative can be so significant as to lead to the early adopter abandoning it (Bennett, 2014).Creating a community of practice is an established approach to supporting individuals working across multiple HE institutions (Campbell et al., 2021). The DSAC community mailing list meets this goal in part by: 1) ensuring course adoptees can contact the BLE directly, and 2) disseminating updates to the master version. However, as noted by some study participants, it falls short of establishing an active, collaborative space to exchange ideas and user-developments.

In exploring the contexts in which the course has been implemented, we found that the DSAC was being used both as a generic institutional or departmental course to introduce incoming students to principles of digital skills, as well as fully contextualised courses within individual disciplines. The argument for contextualising digital skills development within the disciplines has been made (Hays & Kammer, 2023); however, not all institutions have the resources to do this at scale. The BLE chose to create a generic course

in recognition of the centralised academic and learning technology support available at many institutions and to allow customisation at a local/discipline-specific level.

The second research question sought to capture adopters' experiences of implementing and/or adapting the course. The study highlighted some of the technical challenges associated with adaptation, and the need for learning technology and managerial support. Despite the challenges, adopters of the DSAC had created new units, re-arranged course content or created discussion forums in lieu of end-of-unit quizzes. These innovations had not been shared within the existing mailing list. This is a recognised problem in the use of OERs in higher education (Swain & Pathak, 2024). Future work should seek to explore how iterative changes to OERs can be shared back to the community, both by the creators and by adopters, so that these materials remain relevant to tomorrow's students. As the resource is adapted over time, regular engagement with students in the context of staff-student partnership (e.g. following framework proposed by Bovill (2017)) for development and evaluation is recommended.

Finally, we observe that the variety of approaches taken to implement and edit the DSAC illustrates the value of creating and sharing OERs. The DSAC has had a tangible reach across the UK HE sector, positively influencing digital skills support by providing an editable tool to support students across multiple institutions. We would invite other institutions to investigate the potential of DSAC as a primer as a basis for subsequent digital skills development; if you are interested, please contact info@ble.ac.uk.

## Biographies

*Kirsty McIntyre* is a Science Education Specialist at The University of British Columbia, supporting faculty to deliver engaging, student-focused teaching using best accepted practices. Her educational research explores methods to support student transition to higher education, novel active learning approaches and public participation in research agenda and processes.

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*Sarah Sherman* is the Director of the Bloomsbury Learning Exchange, which promotes digital learning strategies and practices for its institutional partners. She is a Senior Fellow of the Higher Education Academy (SFHEA), a Fellow of the Centre for Online and Distance Education and a former Trustee of the Association for Learning Technology.

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## Appendix I

**Digital Skills Awareness Course**

Q1 Experiences of the BLE Digital Skills Awareness Course

Participant information
You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. By completing the questionnaire, you will be considered to be consenting to the study.

Background to this study
The Digital Skills Awareness Course was developed by the Bloomsbury Learning Exchange (BLE) in 2019. Since then, numerous institutions have implemented the course to support students entering higher education, across multiple disciplines. The purpose of this study is to understand who has implemented the course, and to investigate the attitudes and experiences of staff who implemented and/or adapted the Digital Skills Awareness Course in their institutions. The project is being conducted by researchers at the University of Glasgow in collaboration with the BLE.

Why am I being asked to participate?
You have been asked to take part as you are a member of the BLE Digital Skills Awareness Course community of practice mailing list for adoptees of the course. It is up to you to decide whether or not to take part in this study. A decision not to participate will not affect your relationship with the BLE or the principal researcher in any way.

What will happen if I decide to take part?
If you take part, you will be asked to fill out a short online questionnaire on your experiences of the Digital Skills Awareness Course, from the point of view of a member of staff. The questionnaire will be hosted on the platform Qualtrics and will take no longer than 15 minutes to complete. The completed questionnaires will be analysed to identify common or disparate themes. The information we gather will give us a better understanding of how staff have used and/or adapted the Digital Skills Awareness Course and may help in future course design. The information collected through the questionnaire will be anonymous, but you will be invited to leave your contact details at the end of the survey for a follow-up interview. If you choose to do this, you can withdraw your data before analysis commences. Participants who have left incomplete responses will not be able to withdraw their participation in the study, but you can also choose to exit the survey at any point. Should you inadvertently disclose personal information such as that regarding the potential harm to self or others, information relating to criminal acts and/or acts of professional misconduct, the research team may have to report such disclosures to the appropriate authorities as deemed necessary by the nature of the disclosure. The data and information you provide will only be seen by study researchers and potentially by professional regulators who may undertake an audit of University of Glasgow research at any point.

Are there any benefits or risks involved?
Although there is no specific benefit to taking part in the study, completing the questionnaire may allow you to reflect on your experiences, which you may find helpful. Any specific details, e.g. institution name/degree programme, that you disclose may compromise the anonymity of your response. We will seek to anonymise data as much as possible in the analysis and dissemination stages of the study.

What will happen to my data if I take part?
Researchers from the University of Glasgow collect, store and process all personal information in accordance with the General Data Protection Regulation (2018). You will not be asked to disclose any personally identifiable information. All data will be stored in electronic format on secure password-protected computers. The data will be stored in archiving facilities in line with the University of Glasgow retention policy of up to 10 years. The raw data collected in the study will not be shared with the Bloomsbury Learning Exchange (BLE). After this period, further retention may be agreed or your data will be securely destroyed in accordance with the relevant standard procedures. Your rights to access, change or move the information we store may be limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. You can find out more about how we use your information from Dr Kirsty McIntyre (contact details at the end of the document).

How will the results be communicated?
It is anticipated that the results of the study will be presented both internally and externally and submitted for publication in the appropriate literature. No-one will be identifiable from the information presented. The project has been reviewed by the University of Glasgow College of Medicine, Veterinary and Life Sciences Ethics Committee.

If you have any questions or concerns about the research, you can contact the organiser of the study: Dr Kirsty McIntyre, (Lecturer in Medicine, University of Glasgow) by e-mail: xxx Thank you for taking time to read this information sheet.

Q2 I have read the participant information sheet and understand that by completing the questionnaire I consent to participation.

- o Yes
- o No

*Skip To: End of Survey If I have read the participant information sheet and understand that by completing the questionnaire... = No*

Q3 Disclaimer: The purpose of this survey is to collect the thoughts and experiences of members of staff at higher education institutions that have implemented the Digital Skills Awareness Course (DSAC) for their **students**. The survey does not intend to capture information related to courses implemented for members of staff, or in relation to the Digital Skills Awareness for Starting Higher Education (DSASHE) MOOC on FutureLearn.

Q4 How did you first hear about the Digital Skills Awareness Course (DSAC)? (select single best option)

- o Colleague
- o Conference presentation
- o Email
- o Social media
- o Other (please specify) _____

Q5 Have you implemented the DSAC in your institution?

- o Yes
- o No

*Skip To: Q8 If Have you implemented the DSAC in your institution? = No*

Q6 In what way(s) have you used the DSAC course at your institution? (select all that apply)

- ▢ As a bespoke induction course for incoming students for a specific course or degree programme
- ▢ As an institutional or department-wide course for multiple degree programmes
- ▢ Other (please specify) _____

Q7 Which degree programme(s) has the DSAC been used to support in your institution? Please state all that apply.

_____

Q9 How would you describe your role in implementing the Digital Skills Awareness Course?

- o Lead the implementation
- o Supported the implementation
- o Other (please describe) _____

Q23 We would like to understand the extend to which users tailored the DSAC for their students. Please indicate the changes you made to the DSAC template.

| | Yes | A little | No |
|---|---|---|---|
| Added links to local (institutional) services | o | o | o |
| Created new content e.g. quizzes, videos | o | o | o |
| Created new unit(s) | o | o | o |
| Updated existing DSAC content | o | o | o |
| Other | o | o | o |

Q10 Did you use the course map provided by the Bloomsbury Learning Exchange (BLE) to adapt the DSAC?

- Yes
- No

*Display This Question:*

*If Did you use the course map provided by the Bloomsbury Learning Exchange (BLE) to adapt the DSAC? = Yes*

Q11 Please describe how you used the course map and/or how it was helpful to you.

_____

Q12 Did you have any difficulties with editing or implementing the course?

- Yes
- No

*Display This Question:*

*If Did you have any difficulties with editing or implementing the course? = Yes*

Q20 Please elaborate, for example, what additional support from your institution or learning community would have been helpful?

*Display This Question:*

*If Did you have any difficulties with editing or implementing the course? = No*

Q21 Please elaborate, for example, did you have existing skills or access to support services that were particularly helpful?

Q13 How likely are you to recommend the 'Digital Skills Awareness Course' to a colleague?
[on a scale of 1-10]

Q14 What do you think have been the main benefits of implementing the DSAC?

_____

Q15 What would make the DSAC better?

_____

Q16 Please provide any general comments and feedback on the DSAC here.

_____

*Display This Question:*

*If Have you implemented the DSAC in your institution? = No*

Q8 What barrier(s) were there to implementing the course in your institution? Please select all that apply.

- ☐ Already have a similar course in place
- ☐ Course not relevant / valuable for my students
- ☐ Lack of technical support
- ☐ Lack of institutional / departmental buy-in
- ☐ Lack of time / existing workload
- ☐ Other (please specify) _____

Q17 Please provide the name of the institution you work at

_____

Q18 How would you best describe your job role in your institution?

- o Academic staff (Research and Teaching)
- o Academic staff (Teaching only / Teaching and Scholarship)
- o Administrator
- o Learning technologist or IT professional
- o Technician
- o Not listed – please specify _____

Q19 We may wish to contact you to discuss your answers further in a short interview. If you would be willing to be contacted, please enter your email address below.
Your contact details will be disaggregated from your responses for data analysis.

_____

## Appendix II

**Staff experiences of (re)developing an online Digital Skills Awareness Course to support student transition into Higher Education**

Topic guide for Digital Skills Awareness Course (DSAC) semi-structured interviews

Section 1: Introduction and consent

- Welcome participant and introduce self
- Confirm willingness to participate and consent. Confirm that the interview will be recorded.
- Acknowledge that the interview data will be anonymised, the interview recording will be deleted after transcription and no identifiable information will be shared with anyone outside the research group.
- Responses will be shared anonymously and may be quoted in publications.

Section 2: Can you tell me about your experiences of using the DSAC?
*The initial part of the interview will be deliberately unstructured to allow the participant to share their experiences of using and/or adapting the DSAC for their institution and/or department.*

If not volunteered, prompt directly on:

- How did you first hear about the DSAC? When?
- Why did you decide to use the DSAC (did you consider any other courses, and why)?
- How was the DSAC embedded in learning and teaching? For example, was its use mandatory or optional, was it targeted for specific student groups?

Section 3: Please tell me about how you have adapted the DSAC…
Prompts:

- What changes did you make to the DSAC?
    - Changes recommended in the DSAC course map provided by the Bloomsbury Learning Exchange (BLE) and/or did you make additional changes?
    - Can you describe these?
    - What was the motivation to make these changes?
        - Role of student/staff feedback
- How did you keep a record of the changes that you made to the course?
    - Course map or other method

Section 4: Did you feel that you had all the information and support available to you to adapt and implement the course?
Prompts:

- Who supported you to implement /adapt the DSAC are your institution/at the BLE?
    - Did you implement the DSAC as part of a community of practice (e.g. DSAC mailing list)
    - Or; do you see a need for a community of practice of DSAC users?
- What support would you have benefited from and why?

Section 5: Conclusion

- Thank interviewee
- I have no further questions

- Is there anything we have not discussed that you would like to share or talk about?
- Is there anything that you would like to ask?
- Stop recording.
- Re-iterate the process of withdrawal up until the point of anonymised data analysis. Participants wishing to withdraw should contact the study organiser.
- Ensure they have interviewer's contact details and study organiser's details (Dr Kirsty McIntyre, xxxx)