Creating and Developing Our Inclusive Assistive Technology Offer at Sheffield Hallam University, 2017-2022

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This paper documents and explores our attempts to introduce assistive technology to the wider student body at SHU over the last five years. We have included an introductory section, a short exploration of each year, and a discussion section where we look more closely at our approach and experiences since 2017. We value any feedback or enquiries you may have, and our full contact details are given at the end of the paper.

Intro / Context

In 2017, Sheffield Hallam University (SHU) 'in-house' support teams were restructured and redirected away from providing 1-1 DSA-funded support towards a more inclusive and accessible offer. The new approach consisted of a wholly-SHU funded support worker team for timetabled support, and a set of SHU funded inclusive 'team offers' to provide mentoring, skills support, and assistive technology support. This was designed to complement externally funded support and did not affect students' access to DSAs.

The change was a response to three key improvements proposed by the Department for Business Innovations and Skills (BIS) to commence in the 2016/17 academic year. The three key areas were recommended in a July 2015 consultation document published by BIS:

1. Improved accessibility of the learning environment for all disabled students

2. Re-balancing the provision of support between HE providers and DSAs, and

3. Improving value for money by ensuring DSAs provide only the support which would not be available to disabled students from other sources e.g., reasonable adjustments. (Department for Business Innovation & Skills, 2015, p. 11)

The release of the first Quality Assurance Group (QAG) Non-Medical Helpers' (NMH) Framework in 2016 was also a significant factor, as it was unclear whether our NMH teams would be able to meet the QAG requirements in good time. Up to this point the Assistive Technology team were providing DSA-funded assistive technology training, and we were already providing support to disabled students who were not DSA eligible or awaiting their DSA support to be agreed. In September 2017 we ceased DSA-funded training, and created a new offer based around an assistive software training provision that disabled students could access at any time. The intention was to allow disabled students to have access to assistive software, irrespective of DSA status. The university had also recently invested in app 'streaming' software AppsAnywhere, which allowed students to access software on any computer while on-campus. Previously, assistive software was installed on most university computers, but due to IT issues availability could be inconsistent.

2017-18

In September 2017, the assistive software group sessions were launched with a narrow target audience; students who had declared a disability on their student record (although all students could access the software via AppsAnywhere). The sessions covered Read & Write and Mindview software and consisted of on-campus, tutor-led walkthroughs of the software with students using the software on SHU devices. The purpose was to allow students a hands-on experience of the software

and to demonstrate their benefits. We had looked at doing full software demonstrations but decided the pedagogical benefits of interactive sessions far outweighed the benefits of covering all aspects of the software. We also developed and printed professional walkthrough booklets, which could be used alongside the tutor-led instruction in the sessions.

The sessions were initially sparsely attended. The low attendance numbers were put down to the various difficulties we experienced targeting our audience (disabled students). We faced challenges marketing our sessions directly to this audience, and it was difficult to make information about our sessions discoverable on university platforms (Blackboard, Student Portal etc). We also were mindful that disabled students may already be in receipt of DSA and accessing the assistive software on their personal devices.

We reviewed these issues and in February 2018 decided to move towards a fully inclusive offer with no limitations on the attendance criteria. Opening the offer to all students meant we were able to promote more widely. We performed a soft launch initially and the promotions drive included creating banners, flyers, posters and eventually a roadshow that was taken across the two university campuses. A by-product of our new exposure resulted in making contacts in academic departments. This led to course presentations, specific staff team presentations and representation at the annual Learning Teaching & Assessment (LTA) events.

As mentioned in the introduction, in 2017/18 we offered training on both Mindview and Read & Write via AppsAnywhere which allowed students to access software from any computer in the university, although not off-campus. Students fed back informally that they wanted to be able to access the software at their convenience on and off-campus. In response to this we contacted our IT department for data on how many students were accessing the software on campus and put forward proposals for students to access the software off campus on personal devices, although at the time it was not clear how this might happen.

Total sessions offered in 2017/18 academic year (June 2017- June 2018)	111
Total bookings onto sessions	65
Total attendance	34

2018-19

After our initial soft launch year, we reconsidered some of our short-term expectations and focused on incrementally improving the service. We considered replacing the Read and Write Gold session with a new session where assistive technologies were used in an integrated way, but we were not happy with the feedback on the prototype session and decided to continue with the same sessions for 2018-19. We also continued to try and obtain additional assistive technology site licences.

We decided to move the sessions from IT lab environments to smaller classroom settings, where students had access to laptops. This was more appropriate given the low student numbers and it provided a more comfortable and interactive setting. The move to smaller premises reduced session capacity from around twenty to six, but this was not a concern at this point due to the low attendance.

For marketing we moved to a ‘full launch’ of the sessions to the wider student population and this included: digital display adverts, flyering, presence at open days, and more outreach work with university departments. We also began to send a regular email to disabled students in the university

(approximately seven thousand students). The university also launched a new 'MyHallam' portal for students, which we were able to periodically advertise our sessions on. This improved our discoverability and proved to be an effective tool for generating session bookings.

In semester 1 a site licence for Audio Notetaker was purchased and deployed, and an Audio Notetaker session was launched in March. This took some time to develop, due to the practical and pedagogical difficulties delivering an interactive group session for this type of software. We chose to focus on face-to-face recording using the mobile app (on student's own devices), followed by transfer to the Audio Notetaker app and exploration of its features. We also used our existing web presence to create an online Audio Notetaker portal, where students could learn how to access and use the software via self-service. The mobile app was the first assistive software that we were able to provide on students' own devices, but Audio Notetaker was still tied to on-site use.

Attendance at group sessions increased to 74 (June 2018-June 2019); an increase of 89% but in real terms still modest with on average less than one student attending per session during term time. Attendance remained strongest for Mindview sessions (50%), followed by Read and Write Gold (35%), and Audio Notetaker (15%).

In January 2019 we began to systematically collect feedback from students attending sessions, and the response rate was high. Feedback was uniformly positive, although many students again commented that the software would be much more useful to them if they could use it off-campus.

Total sessions offered in 2018/19 academic year (June 2018- June 2019)	108
Total bookings onto sessions	127
Total attendance	74

2019-20

This year began with a major change of focus change towards the new inclusive tools built into Microsoft products and ended with major session delivery changes and software distribution developments due to the Covid pandemic. We also began to systematically promote our sessions to all students and developed a marketing plan which ensured that all students were contacted at least once a semester (by department), and disabled students were contacted monthly.

September – March

During 2019, we were following the progression of Microsoft Learning Tools and Immersive Reader, which are described by Microsoft as: "a set of inclusive features available in a wide range of platforms that assist all learners in reading, writing, math, and communication." (Microsoft, 2022). Immersive Reader consists of a text reader, background colour changer, line focus tool, syllable highlighter, and text spacer. These tools were initially included in OneNote and were added to Word and Microsoft Edge in 2019. The Dictate (speech to text) tool was also added to Word in 2019. The tools are multi-platform and were added at this time to the Windows, Mac, and web versions of Office 365. All students at SHU receive a free Office 365 subscription. We decided to move from delivering sessions on Read and Write Gold to Learning Tools / Immersive Reader, as the Microsoft tools were high quality and already available to all students on their own devices. We launched the sessions in late October.

There were some practical issues with this new approach: the development of Immersive Reader and Learning Tools was fast paced during this time, with the functionality and user interface

changing with little or no notice. There was also lag between devices having the same functionality available, due to the features being tied to Windows and Office updates. This made the initial sessions challenging, and sudden changes or update lags remain an issue when delivering sessions on the Microsoft tools. However, these issues are far outweighed by the benefit of students being able to use high quality access tools on their own devices.

We also developed a new "Digital Research Tools" that focused on using the data capture tools in Read and Write Gold, Audio Notetaker, and Google Keep. This session was intended as a bitesize introduction to some useful assistive tools, rather than as a full tutorial to an individual product. The session was launched in early March and initial attendance was strong. However, our face-to-face sessions were cancelled on 13th March due to the Covid crisis, so this session was only delivered twice.

March - June

We were quickly forced to rethink our delivery when the first Covid lockdown was announced in late March. We relaunched our group sessions as remote-only in mid-April, focusing on tools that students could access from home. Microsoft Learning Tools was already available to students, and we were able to secure a full version of Mindview for students to use on their own devices (Windows and Mac). This was provided for an initial 6 months and then extended as needed.

The change in delivery method to online meant that we could no longer deliver the session in the same interactive manner, and we could not support students as effectively during the session. We recommended that students install the software beforehand, but we could not rely on this happening. We also envisaged that it would be difficult for participants to switch back and forth between the demonstration and the software when using a laptop screen. We planned the online sessions around an hour-long demonstration, followed by a half-hour of additional time for recaps and support. One of the advantages of the online approach was that we were able to significantly increase the maximum number of students in each session, which had previously been set to a maximum of six.

We communicated with disabled students to explain and advertise our new offer and began to communicate the offer to all students via our usual marketing channels. The response was strong with larger than normal attendance in our sessions during April. We provided links to the free Mindview download (Windows and Mac versions) on our internal SHU web pages and there were over 1200 Mindview downloads in the next 18 months.

137 students attended group sessions during 2019-20, an increase of 85% on the previous year. This averaged out to 1.33 students per session during term-time, although sessions were fully booked during peak months. Mindview remained the most popular session, representing 48% of bookings, with 28% of booking for Audio Notetaker Sessions, 20% for Microsoft, and 4% for Digital Research Tools.

Total sessions offered in 2019/20 academic year (June 2019 – June 2020)	123
Total bookings onto sessions	252
Total attendance	137

2020 – 2021

During the summer we expanded our online presence and created additional web guides for Mindview and Microsoft Learning Tools. We now had a full complement of online, self-service resources for our students to access the assistive technology available at SHU.

In September we resumed our full program of sessions, which were delivered remotely due to Covid restrictions.

September – December

The start of the academic year saw a continued emphasis on Microsoft Learning tools and MindView. The MindView licence continued to be available for students to download for use on their own computers. We resumed Audio Notetaker sessions: two additional sessions were put into the cycle of sessions being delivered, for Sonocent Link and Audio Notetaker, and we increased the rota back to three sessions a week. We were now able to offer off-campus student access to Audio Notetaker via AppsAnywhere. The Audio Notetaker session saw a change in focus to recording online content, due to how most of the teaching was being delivered at the time. As some teaching had returned on campus due to an easing of Covid restrictions from July 2020, the Sonocent Link session continued to support students who would need to record face-to-face. The Sonocent Link session posed issues with students getting the app set up on their mobile devices; for face-to-face sessions, issues had been easier to resolve as we had access to the student's device. Delivering the session remotely made this difficult to troubleshoot and so sessions could be complicated where students were struggling.

January - July

Due to the return of full lockdown conditions in January 2021, we removed the Sonocent Link session from our rota. Bookings for January through into early February were high in comparison to the same period in 2020, with a large proportion of attendees being international students – 75% of students in January and February were international students, many of whom were joining courses in January.

Total attendance for group sessions in 2020-21 was 213, an increase of 55% on the previous year with an average of 2.3 students attending per session. Mindview remained the most popular session, representing 35% of bookings and 38% of attendances. The Microsoft Learning Tools session also performed strongly, with the greatest number of bookings (33%) and 36% of attendances. Interest in the Sonocent Link and Audio Notetaker sessions was lower, presumably because most students were not attending face-to-face sessions and mostly had access to recordings of their online sessions during this period.

Total sessions offered in 2020/21 academic year (June 2020 – June 2021)	126
Total bookings onto sessions	359
Total attendance	213

2021 – 2022

In the summer period, we worked to update our software offer so that our software was accessible as possible for students. Our IT department negotiated a new agreement with Mindview so that students could access the software on their own devices via an account subscription, or on SHU devices via AppsAnywhere (on and off-campus). Our Audio Notetaker licence was due to expire in September 2021, so we decided to move to Glean, which is web and mobile app-based and accessed

via a subscription. We also bought some 'insurance' Audio Notetaker licences for students who preferred to continue using it. Planning also began on the delivery of a revision planning session using MindView.

Sessions continued to be delivered online from September 2021. Access invites were sent out to students after attendance at Glean and Mindview sessions, and this helped to address student feedback regarding access to the software off campus and on their own computers. In another move to address student feedback, a MindView (for Apple Mac) session was added on an ad hoc basis from mid-November. Interest in the group sessions spiked in the period of 1st Sept to 31st November, with 459 bookings and 245 attending. Such was the demand for the sessions that the number of students interested was far more than the maximum number of bookings we had set, which had up to this point been around eight people per session. This put students onto a waiting list and so we decided to increase the maximum limit on sessions, which exceeded 20+ in some instances. From mid-November, the Revising with MindView session was rolled out, to coincide with the upcoming exam period. Informal feedback from students during the sessions themselves was very positive, however bookings were less than we hoped for. With COVID restrictions having been eased, and a gradual return to working on campus, we decided to look at once again offering face-to-face training sessions. As a trial, three sessions were programmed in on campus from mid-November until the Christmas break. Unfortunately, while we took some bookings for these, nobody attended. As such, all sessions were left online for the remainder of 2022.

We were getting many support queries regarding Glean and Mindview subscriptions, where students were struggling to access their subscription after coming to a session. As all our queries are now filtered through the Student Services CRM, we no longer had any simple or fast method for students to contact us directly and we were finding that students were reattending sessions to get support. We decided to create an MS Teams channel that would offer support to students. Students can join the channel and if experiencing issues around accessing the software, they can post questions that would be picked up by a member of the team. It was envisaged that over time students may also feel comfortable offering support to other students. We have also started to use the channel to update students on software feature updates and new group sessions. This was launched in January 2022 and as of writing the Team has 78 members.

From June 2021 until the time of writing, we have had 505 attendances at group sessions from 940 bookings. Attendances increased by 135% from 2020-21, with Mindview being again the most popular session (representing 41% of attendances), Glean was second most popular at 34%, then Microsoft Learning Tools (25%), and Audio Notetaker (1%). Only 53% of student bookings resulted in an attendance, but as we have mentioned before this has been less of an issue than with face-to-face sessions. In peak-times we had an average of five students attending per session.

Total sessions offered in 2021/22 academic year (June 2021 – April 27th, 2022)	110
Total bookings onto sessions	940
Total attendance	505

Discussion

Software Offer

Throughout the first three years of our group sessions attending students consistently expressed a desire to use the software on their own devices. This feedback was received both informally and

through our session feedback questionnaire. It was clear from this feedback that any assistive software that was only useable on-campus would have a limited appeal to most students, and to obtain widespread adoption the technology would have to be available to students on their own devices. The Covid pandemic only accelerated this need, but also gave us an opportunity to challenge the existing arrangements of assistive software only being available on-campus.

Useability and user experience was also a factor, for both student adoption and delivering effective sessions. Software designed around having an abundance of features, or which involved complex multi-device processes proved challenging to develop successful, interactive group sessions for. Software that involves working through clear, tangible processes, and with a focused set of features has been easier to deliver sessions and develop training materials and has seen greater enthusiasm and take-up.

Finally, it is also important to look at the user journey outside of the sessions and training materials. Seemingly straightforward processes for accessing the software can prove difficult to students in unforeseen ways. It is important to recognise this and to both provide clear instructions and support for students attempting to use the technology for the first time. User journey modelling, user experience exercises ran directly with students, and task-focused social platforms (e.g., Teams, Slack, live chat), can all be used to anticipate issues and develop effective support processes.

Marketing

We found that marketing directly to students via digital methods was by far the most effective method for generating bookings for sessions. Where possible it also generated large numbers of software downloads or access requests. It also required relatively little effort. The most successful digital methods for us were bulk email, and occasional features on the student portal (MyHallam). We also tried using popular university social media channels (Instagram and Twitter) but had very little engagement from these posts.

In-person promotional events were effective for generating leads with interested staff parties (e.g., academics). This generated further diverse activities within academic departments, depending on the needs or preferences of the staff we met. As this marketing method typically generated unique requests and activities, it ultimately became unsustainable given our resources. It was also difficult to measure the impact of the activities it generated (e.g., delivering directly on courses). From 2019-20 we have focused mostly on direct digital marketing to students.

By 2019-20 we had developed a regular rota for emailing disabled students (monthly) and all students in departments (once a semester). We also aligned the marketing with the academic calendar so that we were promoting the sessions in a time-relevant manner – for example promoting notetaking software early in the semester, and this year promoting our revision sessions towards the exam period. In practice we found that students were most receptive to our marketing messages at the start of term (some students would attend all three sessions in the first week). Varying our marketing and session offer to align with the academic calendar has not been as impactful as we hoped, although it has been a very useful way to develop and communicate our offer.

From early on we struggled with how to brand the service. We were advised by various parties that we should not use the term ‘Assistive Technology,’ and that we should use a softer, more generic term such as ‘Learning Technology’ or ‘Digital Skills.’ Unfortunately, all these names and more were already being used within SHU by 2017, and we had to be conscious not to confuse or undermine

the offers of other areas. For the time being we have stuck with the 'Assistive Technology' brand, although we will continue to review this.

Student Profile

Initially our offer was aimed and restricted to disabled students only. However, from February 2018 we opened our sessions to all students. The table below provides a demographics breakdown for the students who attended sessions:

Year	Unique Students	Disability Declared	Non-white	International	Tier 4
2017-18	31	94%	48%	38%	16%
2018-19	62	76%	44%	20%	11%
2019-20	110	47%	55%	45%	22%
2020-21	162	45%	74%	45%	32%
2021-22 (up to April 20th)	314	37%	68%	55%	47%
Overall	676*	47%	62%	47%	35%

* Some students attending over multiple time periods are counted twice in the overall total.

The sessions have been more popular with students who describe their gender as female, accounting for 71% of attendees. In 2021-22, 68% of students attending are studying on a postgraduate program - increasing to 88% when filtering for non-UK citizens. Attendance has trended towards postgraduate and international students since 2019-20, when we moved to a fully remote delivery model.

As of late April 2022, disabled students account for 19.5% of students at SHU. In comparison, 47% of students who have attended our sessions have declared a disability. Breaking down by disability, 16% of attendees declare a Specific Learning Difficulty (SPLD), 12% declare Multiple Disabilities, and 8% declare a Mental Health Difficulty.

Students from over 250 different courses have attended at least one AT group session (there are around seven hundred courses running at SHU at any one time). The sessions were most popular with students from Psychology, Management, Service Sector Management, Computing, and NHS courses. Students on these courses attended sessions at a higher-than-average rate, given the respective sizes of their courses and departments. Students from Humanities, Art & Design, and Media Arts & Communication attended the session at a significantly lower than average rate when compared to department size.

Face-to-face vs Online Delivery

We were compelled to move to an online-only delivery mode in 2019-20 and had not previously contemplated delivering sessions online as part of our standard offer. We have found that delivering online has given us significant benefits. Firstly, it has allowed us to scale our service, so we are able to deliver to many more students than possible with a primarily face-to-face model. The largest number of students we delivered a group session to pre-Covid was 7 and delivering to this number of students could be challenging given the interactive nature of the sessions and the reliance on SHU technology. Since beginning online group sessions in March 2020 we have been able to keep

increasing the capacity of our sessions and have added students from the waiting list when session capacities are reached, with minimal impact on the delivery of the sessions. Our official capacity has increased to sixteen students per session but on occasion have delivered to higher numbers, and we are now considering removing capacity limits for online sessions.

Secondly, we have been able to reach a more diverse body of students than we previously did when delivering face-to-face. The number of international, non-white, and postgraduate students attending sessions has increased considerably since March 2020 - no longer needing to attend the session on-campus is presumably important here. Delivering sessions online has also provided students with support tools that would have been very difficult when delivering face-to-face – online recordings of the session and automated transcription where required. Delivering online has raised pedagogical issues, which have been discussed above. However, we have been able to ameliorate some of these issues by developing additional resources (e.g., web guides, Teams site) and by focusing more carefully on the user experience within our sessions and materials.

No-shows have increased slightly since moving to online delivery, with 53% of student bookings attending in 2021-22, compared to 54% in 2019-20. No-shows were a significant issue for us when delivering face-to-face as capacity was low, and we were often fully booked up for sessions during peak times and had to operate a waiting list, but then would have several booked-on students not attending. This is not an issue with online sessions as we can keep increasing capacity when sessions bookings are full, although as an institution we still emphasise the need for students to attend sessions when booked on. We have continually reviewed the way students access the Zoom sessions to make it as easy as possible (e.g., removing passcode and waiting room options).

Key Observations

- When offering assistive software to students, we feel there is a strong link between the accessibility and ease-of-use of assistive software and the subsequent take-up. Students are less inclined to take up software that has an abundance of features but is harder to access.
- Group sessions can provide a very useful introduction to assistive software for students, but further resources are needed to support ongoing use by students. This is particularly true of sessions delivered online.
- Students are most incentivised to attend during enrolment or re-enrolment periods (at SHU this is September-October, and January). We have diversified our marketing and session delivery to reflect the academic calendar and corresponding student activities, but students are still most motived to book and attend during the first few weeks of a semester (regardless of topic).
- Post-Covid, online delivery is likely to remain as our primary delivery method due to the far greater scalability, and the ability to reach a more diverse body of students. However, we expect to begin to deliver more regular face-to-face sessions next year.
- The lack of ‘at elbow’ support enjoyed in face-to-face sessions could be detrimental to the learning outcomes of online sessions. We are trying to mitigate this with the post session online support offer and will be reviewing how effective this medium is over the next year.
- The group sessions and software have been most attractive to female, international, and postgraduate students. It is particularly interesting that attendance by postgraduate students has outnumbered that of undergraduate students by 2 to 1 in 2021-22 – this has been contrary to our initial expectations that the sessions would be most attractive and useful for undergraduate students.

Future Plans

As the university moves back to a predominantly face-to-face model of teaching, we expect to restore some face-to-face delivery with students, although our core delivery of group sessions will remain online. We are also looking at developing a session with Microsoft tools working alongside accessibly tools like BookShare, Blackboard Ally, and Sensus Access. We are continuing to look closely at our marketing and impact and will be targeting harder-to-reach student groups. Finally, we are continuing improve our user support and feedback processes and developing our user community via our Teams site.

Further information available from the Assistive Technology Service SHU - Simon Crawley: s.crawley@shu.ac.uk, Neal Marsh: n.marsh@shu.ac.uk, Richard Nind: r.m.nind@shu.ac.uk. We welcome any feedback or questions you may have about our experiences.

Website: SHU Assistive Technology

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