# Feedback from discussions

Notes taken and written up by Emma Cliffe

Groups were asked to summarise key points they covered during their discussions.

## Group 1

This group focussed their discussions by considering ‘Anna’ from the given scenarios. They noted first that supporting Anna would require a collaborative approach:

* Anna would require support from other professionals, perhaps study support tuition and Cognitive Behavioural Therapy – how important would it be for these professionals to understand the mathematical nature of her studies?
* Adjustments to assessments might need to be considered. For exam conditions would removing the time barrier be suitable? Or an alternative assessment – oral for instance – do we know which alternative or adjustments to assessments are suitable for mathematical subjects?
* Ideas for how to approach studies might come from the department but provision and training be via other professionals. E.g. Alongside other mentioned methods a tablet PC could be used for handwriting – rather than typing – allowing Anna to edit and correct her handwritten work. This would remove the LaTeX (or typing) barrier when necessary e.g. for rough work.
* The department would need to provide (correct!) printed lecture notes from the academics in the first place. Do all departments hold such notes?
* The counselling service would need to be aware of the impacts Anna’s difficulties had on her studies.
* Considering the rewriting question: Perhaps lecturers would need to not mark as harshly for subtle mistakes but most institutions have anonymous marking policies. Some noted that dyslexic students place a sticker on their work but would a lecturer know what mistakes to ignore? Is this clear in mathematics?

The group then noted that a key area of concern was the timescale in which such collaborations would need to be planned and the difficulties of being proactive:

* One attendee noted that in their institution they found out that a blind student was coming about a week before arrival and that there was no time to work together to make complex reactive adjustments.
* It was highlighted that there is a need for recognition of anticipatory effort (particularly where time and other costs might be higher such as in mathematics and where it may be more difficult to be proactive). Adjustments in mathematical subjects are being dealt with on a case by case basis. The system puts staff under pressure – sometimes nothing is done until the student arrives. It was suggested that the legal requirement should be used by staff to request more time in order to plan and make complex proactive adjustments rather than the legal requirement being used to threaten staff.
* Other universities learn about the students who have applied earlier in the process – but this does not assist in cases where a student places the institution as their insurance offer. In the case of international students the information can be provided very late in the process.

Finally, it was highlighted that good practice should be shared. Institutions should know that advice on access to mathematical studies is available and should share this with the student and staff at another institution if the student ultimately goes elsewhere. However, it was noted that good advice is shared only if this sharing is prompted or rewarded and staff are not rewarded as they are for other work e.g. through publications and REF points.

## Group 2

This group considered facets of all scenarios rather than focussing on any specific one. They summarised what they felt was required:

* There is a need for all to understand what products and pedagogic tools are available for mathematical study and the features of these. The community needs to keep this information up to date.
* Collaboration between roles is required as working with each student with a disability impacts a number of different roles and they all need to understand how to operate with that student. This means an understanding of the disability itself and the impacts on mathematical studies. For example, the personal tutor needs to understand how that disability works in practice. Take Anna for example – no personal tutor would understand that disability unless a professional had taken the time to explain it and the impact it had on her mathematical study. Tutors need continuing professional development as well as sharing of case studies and software information etc. Different roles of staff should get to meet and discuss.
* There should be professional recognition of work on accessibility approaches in this area built in to general professional recognition – so that these areas do not get buried and dealt with on a case by case basis.
* Students and parents should be empowered by being provided with an understanding the legal duties of institutions, their own responsibilities and an understanding of what **can** be provided.
* Good practice case studies need to be shared but within a wider framework.
	+ A representative of JISC TechDis noted that they share resources but have no method of measuring impact. If someone finds a resource useful this is not known, no evidence base is produced for how useful a resource is or for where further funding is needed. An impact metric is required.
	+ It was thought that competition within HE does not necessarily serve students well as it does not encourage sharing practice. However, the representative of JISC TechDis also noted that competition could be used in a positive manner:
		- If external organisations recognise and reward successful practice they can create positive competition. This highlights successful practice so others can follow it and competition is used as motivation to share what an institution is doing well
		- An example of this is the Oases Award given by JISC TechDis. This is an institutional award for “Progress on Equality using Technology”[[1]](#footnote-1)
* There is a need to consider whose responsibility it is to train students to use assistive technology (AT Training). In the Disabled Students’ Allowance (DSA) model it is difficult to provide on-going support and the AT training professionals may not know less mainstream or subject specialist assistive technology. So whose role is this? For instance, how would we train and support a blind student to use some of the demonstrated software? Some of which are not commercial products and may not be robust.

## Group 3

This group started out by considering ‘Andrew’ but they noted their discussions were “really about how we get all the different people involved”:

* There was a focus on the difficulties support departments have with engaging with the academic environment in mathematical subjects. The support departments want to anticipate the challenge as otherwise support cannot be put in place in time. They felt that approaches to assist in getting departments ‘on board’; approaches to assist departments in extracting from support professionals the information they need and approaches to assist departments working proactively and then moving forwards with the student were required.
* This group also felt that there was a need to give departments recognition for such work. This is needed to prevent the work being seen as an ‘extra’. For instance, in support they had successfully delivered there was often a ‘champion’ role – a department member who got very heavily involved. Which while positive it always came across more as a good will gesture. If such a champion does not get involved then the student loses out because of the requirement for subject knowledge when dealing with images, notation and LaTeX etc.. There is not a choice there – for the student to succeed you need that involvement so it should be formal and recognised rather than good will.

They also noted some other areas of concern:

* There is a need for increased sharing of good practice in this area.
* Some of the tools mentioned in the final talk (Emma Cliffe) were developed by students for their own use or are created by researchers. How can these be developed and made available more widely or commercialised?
* It might be beneficial for students/graduates to share their approaches and experience with other students. Summer schools focusing on this might be helpful.
* The lead in time.

## Group 4

This group again considered all the scenarios and focussed on the needs assessment process and subsequent provision of equipment. Students who have applied for and being assessed as eligible for the Disabled Students’ Allowance (DSA) are required to attend a Study Aids and Study Strategies Assessment (commonly called a needs assessment). The needs assessor is “a person qualified by their experience & knowledge of the equipment and support that students with disabilities (including dyslexia) need to study successfully at university” (National Network of Assessment Centres). It is usual for a student who has software or hardware recommended and funded to receive training on this by an AT Trainer.

* It is important that assessors of needs have up to date knowledge on accessing mathematical studies to ensure that the right equipment and support is recommended at the outset. It is noted that assessors do not tend to specialise by subject area and few may have a mathematical background.
* It is important for AT trainers and other study support workers (e.g. Study Skills Tutor, Mentor etc.) to have knowledge and awareness regarding access to mathematical subjects and the best ways to support students studying these. It is noted that few may have a mathematical background.
* One attendee (AT trainer) noted that at their institution the Assessment Centre is ‘in house’. This was seen as a particular advantage for Science, Technology, Engineering and Mathematics (STEM) as needs assessors have direct access to academics in these areas during the assessment process. The academics can therefore advise. Again, three AT trainers were also ‘in house’ enabling provision to align more easily with the requirements of these subjects.
* Another attendee (disability practitioner) noted that they work in the opposite situation and are forbidden to directly communicate with academic staff. The practitioner is unsure what the student does with information, equipment and strategies when they take them back into the context of their studies. They have to focus on creating a situation where the student can advocate for themselves, can understand the questions that they need to ask and can use this information themselves. This can be a complicating factor in STEM subjects.
* A third attendee (lecturer) noted yet another approach in this area. In their faculty they meet with all STEM students prior to their needs assessment. They assess the needs themselves with the student using their knowledge of the specialist requirements of the degree and send their STEM students to the needs assessment with a list! They do this to minimise ‘pointless’ spending of money on software and hardware which is not fit for purpose.
* A fourth attendee (lecturer) noted that in their department some needs assessors, but not all, make contact. They were aware that some needs assessors specialise in different disabilities and wondered if the profile of needs assessors which specialise in STEM (if there are any?) can be raised and recognised. It was felt that assessors need to have the type of knowledge and understanding discussed on the day or a suitable needs assessment will not happen.

## Group 5

This final group noted agreement with many of the above points. They had also considered how subject specialist information can be shared with disability practitioners and vice versa:

* As alluded to above, it is rare to have a single person with subject specialism, knowledge of impacts of specific disabilities and knowledge of assistive technology. How does one join these areas up? How do you find such a person in the first place? Or do we need to motivate academics to take time to get more involved and so to reduce the need for experts with knowledge in all three areas?
* How can funding gaps be met? They can be more substantial in mathematical subjects (e.g. extra cost of software, of Brailling of mathematics, of specialist support etc.). If the DSA does not cover all that is required what do we do in smaller institutions? There needs to be some expertise coming from somewhere to help if it is a complex situation.
* It was noted that it was not apparent where a knowledge base of information, good practice etc. would be/is housed. Attendees mentioned both JISC TechDis who might focus on technology and pedagogy and the HEA – who might focus more on pedagogy and policy questions. When attendees were asked where they would typically look for the type of information they need in access to mathematics it was felt that this was not clear. It was not clear if different professions would look to different providers.

## Final remarks from various attendees

Finally, some attendees made additional closing remarks:

* Not every university has disabled students in sciences but it is important to provide support proactively – academics should have compulsory awareness training about accessibility. This should be returned to regularly e.g. in a diversity awareness day at least once a year.
* There is a barrier to getting the type of specialist technology spoken about today from research to development and to robust/sustainable. There seems to be a brick wall and part of that brick wall is the STEM community not saying that this is needed. We need the type of tools mentioned today to become sustainable, reliable and supported so that we can depend on them being available for the next few years (at least).
	+ JISC TechDis noted that robust technologies should be selected but that Open Source can be very powerful.
* There can be a feeling that accessing mathematical subjects is “too big a problem area”. So people do not alter behaviour – unless they see clearly what is needed then this will not change.
* I had not realised my subject was so inaccessible! The problems come because we are using 200 year old notation – can’t we change that?
1. <http://www.jisctechdis.ac.uk/techdis/pages/detail/floating_pages/OASES_award> [↑](#footnote-ref-1)