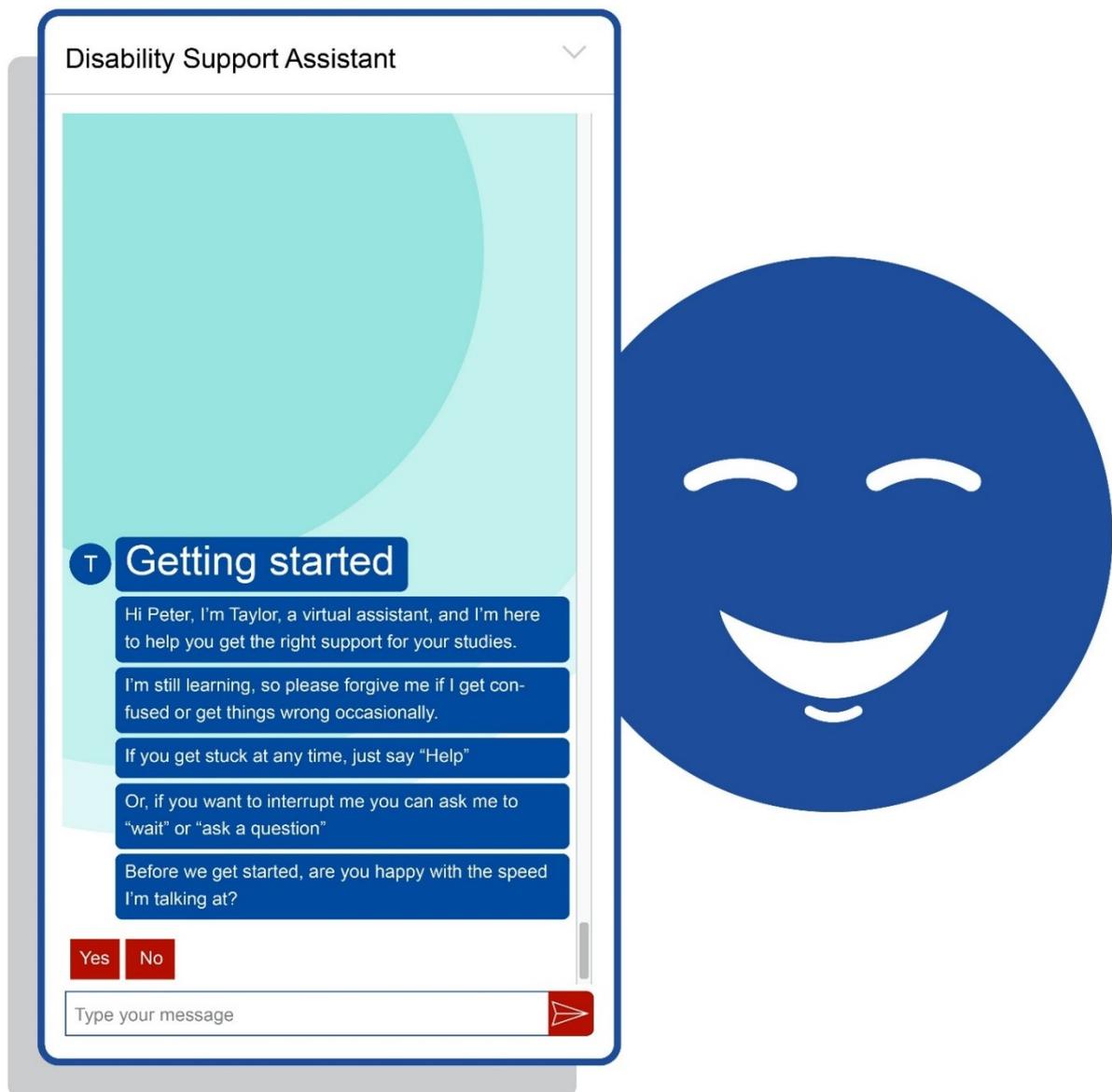


# Opportunities for virtual assistants and artificial intelligence to reduce administrative burden and enhance support for disabled students



A report from the ADDAPT (Artificial intelligence for Disability Disclosure Across Post-Secondary Teaching) project

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The Open University and Jisc

- How can virtual assistants and other AI technologies improve support for students?
- How could they reduce the administrative burden that disabled students currently face?
- What do HE institutions need to do to harness these opportunities?

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# Introduction

This report highlights and explores the possibilities for virtual assistants and related Artificial Intelligence (AI) technologies to improve student support. It particularly focuses on how this could be achieved to improve the experiences of disabled students, who are recognised as encountering more barriers and administrative burden to study. With careful design, these technologies can:

- engage students in dialogue, gather information about their needs, build a profile of them and their requirements, and provide guidance and suggestions
- be designed with staff and students, in order that they address known challenges and barriers
- reduce bottlenecks of routine basic tasks, while providing an always available, useful service
- offer an alternative to forms, can support multiple means of communicating, such as through text, speech or assistive technologies
- Help each student in a flexible and personal way which is still directed and monitored by staff.

Administrative processes impact on disabled student wellbeing and success ([Coughlan & Lister, 2018](#)), and the excessive administrative burden placed on disabled students is now recognised as a major issue for the HE sector ([Policy Connect 2020, pg. 32-41](#)). To address this, virtual assistants can integrate with current support processes and be part of wider transformation of these. However, solutions must also recognise the diversity of institutions.

This report summarises work by The Open University and Jisc to explore how institutions support disabled students and how future visions for this could include virtual assistants and AI. We ran workshops with four institutions and held discussions with a wider set of representatives from further institutions and sector bodies. In the workshops we introduced the example of Taylor and then explored key elements in using virtual assistants for disability support. We included stakeholders from student support, technology, inclusion teaching and management.

Key findings include that:

- Staff perceive a strong need to change from current processes, which are arduous, fragmented and challenging for students. In the future, these processes should become more streamlined and efficient, and to be more accessible, empowering and friendly to students.
- Disclosure and support processes vary across institutions in some areas, such as requirements to evidence disabilities, and use of personal support plans and profiles. However there are common challenges to address such as students disclosing at any point in their journey, and the need for multiple staff to have awareness and work together to achieve effective support.
- Enthusiasm is high and there is understanding that investment in these technologies could lead to significant improvements. However there is uncertainty about institutional capacities to innovate in this space and concern for the challenges of integrating new technologies with current systems.

We are continuing to explore this space and are keen to develop collaborative ways to harness the opportunities that are apparent.

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# Reflective questions

The following questions are drawn from on our workshops and findings. Try answering them to reflect on the opportunities and challenges for your institution.

1) How would students describe the current disability disclosure processes in your context?

Painful	Complex	Challenging	Supportive	Helpful	Nurturing
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2) How would staff describe the current administrative processes and systems in your context?

Arduous	Complex	Fragmented	Lengthy	Confusing	Simple	Accessible	Efficient
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3) In a perfect world, how would you like your students and staff to describe the disability disclosure and support processes?

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4) Which of the following elements are part of your disability disclosure and support process?

Forms	In person discussions	Phone calls	Disability support advisors	Profiles / Learning plans	Providing Evidence	Personal tutors
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5) Which of the following issues are a concern?

Students not disclosing who need support	Disclosures are increasing	Lack of awareness in teaching staff	Workload for staff is too high	Bottlenecks in workflows and process	Coordination across units	Delays in getting support
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6) Where does disabled student support fit in institutional strategies, policies and priorities?

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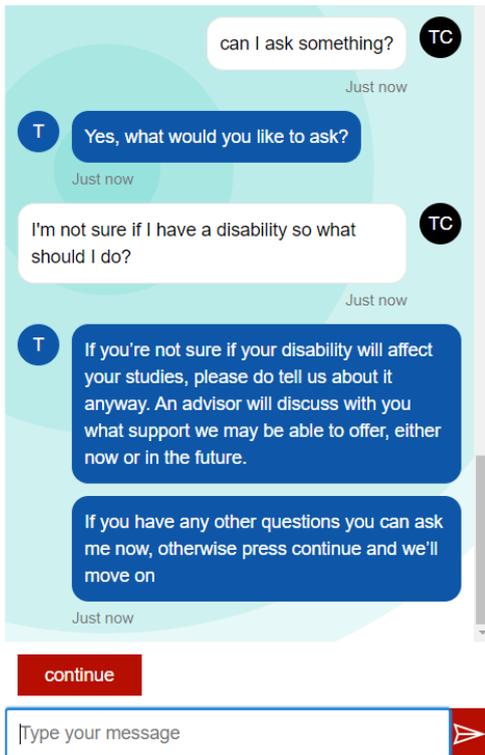
7) How does the institution manage innovation in student support systems and processes and are there any barriers to this in the student support area?

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8) What resources do you have that could help in designing and training these systems?

Student profiles	Frequently asked questions	Queries and service requests	Conversations between advisors and students	Information advice and guidance	Students and staff willing to participate
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# Taylor the Disability Support Assistant



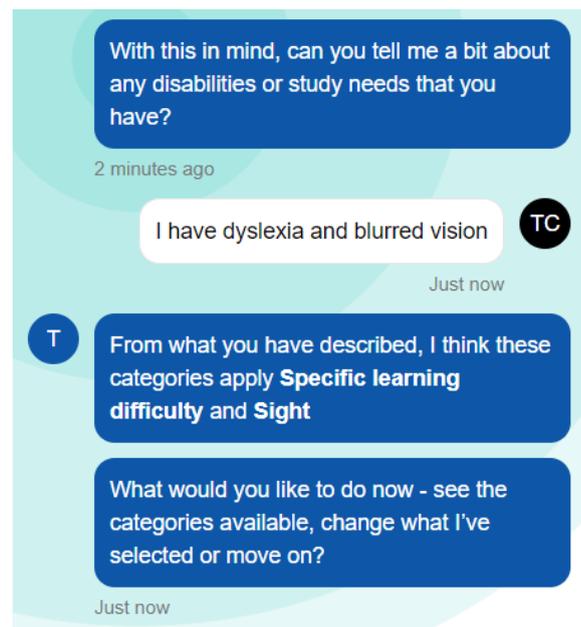
With support from Microsoft through their AI for Accessibility initiative, a team at the OU have created and trialled 'Taylor', a virtual assistant that provides an alternative way for any student to provide information about their disabilities and understand how their study with the OU will be supported.

Taylor was created through a participatory approach with students and staff. Workshops were used to develop a shared vision and guide the design, conversations between disability advisors and students were analysed to model the conversation flow. Student consultants attended meetings and provided advice. Accessibility testing and iterative user evaluations were used to gain feedback and refine the system. Through training, each conversation Taylor has with a student can increase its ability to understand what they are saying and the types of questions they will ask.

Taylor uses a combination of Microsoft Azure AI services. These support essential elements of the system such as chatbot dialogue, speech and language understanding.

## Taylor can:

- converse with students via text, speech or a combination of both
- ask questions designed to create an initial profile of the student
- recognise a wide range of terms that students use to describe their disabilities, and associate these with Higher Education Statistics Agency (HESA) categories
- answer questions at any point in the conversation, with a current knowledge base of over 100 answers about OU study, assistive technologies, and disability support
- Produce a summary of what has been learnt from the conversation for the student to review and then to be shared with staff.



## Evaluation

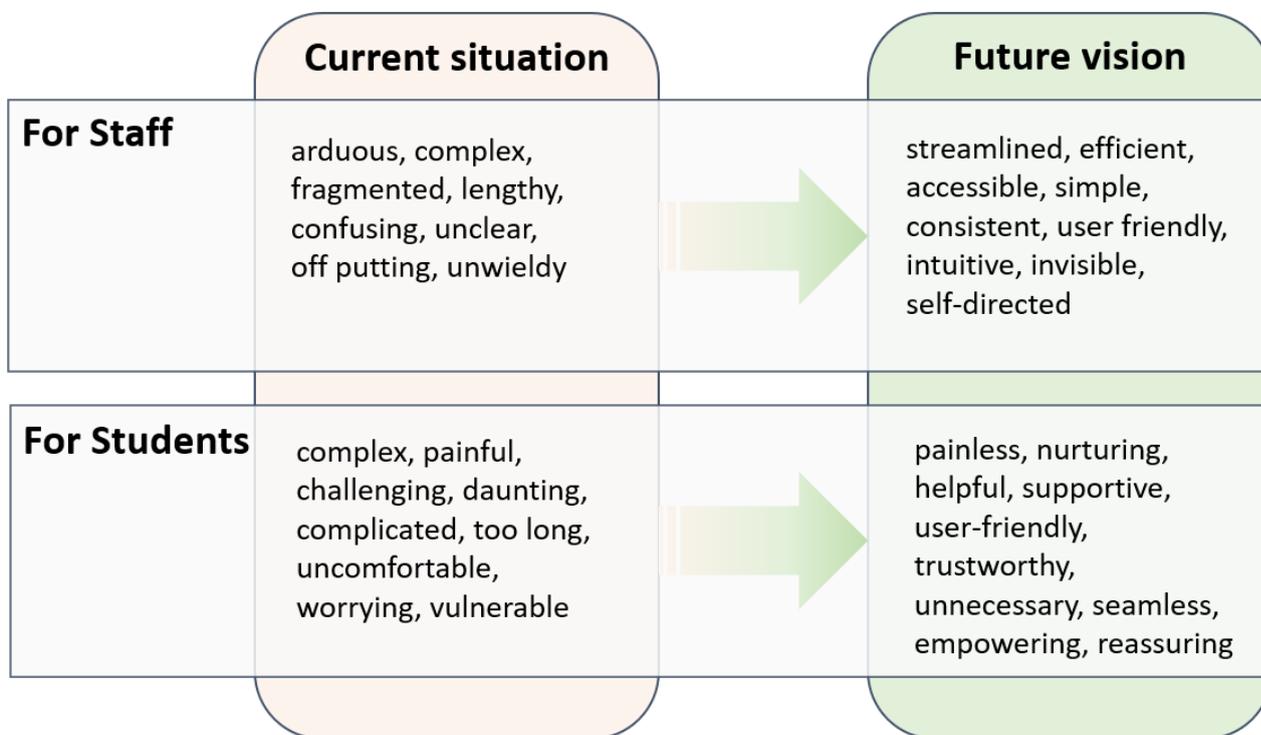
134 newly registered students who were disclosing disabilities were asked to use both Taylor and the existing Disability Support Form for comparison in a counterbalanced trial. 65% preferred using Taylor, 11% had no preference and 24% preferred the Disability Support Form.

As well as this positive overall result, qualitative data suggested improvements in design could convince many who preferred the form, such as improved language understanding, and ensuring students realised that they could provide as much detail as they wanted in responses.

We also gathered feedback on areas that students wanted to see further developed. The top requests were that Taylor provides the student with relevant suggestions of resources or tools, to help them complete other forms or processes, and to be able to answer more questions.

# Disability disclosure and support

This section focuses on current and envisaged processes of disability disclosure and support. The figure below shows responses to a workshop activity where participants were asked to describe current disability disclosure processes and what they would like these to become in the future.



There are similarities and differences between institutional approaches to managing disclosure and supporting students with their study needs. The key features and challenges described on are important contextual factors for virtual assistants and AI to be designed and integrated effectively.

## Key features of good processes

- **Timely communication.** Early disclosure and identification of needs leads to good results. Conversations with students are important to understand requirements and get these in place, applications for Disabled Students Allowance (DSA) also take substantial time.
- **Sharing and triaging information.** Decisions also need to be made early and information needs to be shared. Prioritisation, shared documentation and communication across units and staff that will provide support are all important to success. This is based in sensitive personal information so General Data Protection Regulation (GDPR) requirements and privacy need to be continually considered.
- **Personalised support plans.** The creation of support plans or profiles for individuals varies in name and approach but is a key element of successful support. These can be updated where a students' condition changes, and the information can be used to reduce the burden on the student to repeat requests and communications with staff.
- **Legislation.** The Equality Act (2010) makes it clear that HE institutions are responsible for providing support to disabled students. This means that there is widespread recognition of the need to have formal processes that enable this to be delivered.
- **Coordination.** Disability advisors or similar staff roles will coordinate across units, identify gaps in support, and facilitate communication and appointments.
- **Student-centred approaches.** Disability support should be done in such a way that students are engaged in decisions and are empowered by the process.

# Current challenges

- **Pressures on disclosure and communications.** There are peak times for disclosure and support work and there have been substantial increases in the numbers of students disclosing disabilities in recent years, particularly in mental health disclosures. This puts a spotlight on disclosure and increased pressure on systems. The pandemic also created a huge workload of revising and rearranging support.
- **Multiple routes.** Students can disclose through a formal process, for example during application or registration. Other students may disclose informally and at various times in their journey and this needs to be picked up and acted on. Some students only come forward when they are failing or seriously struggling.
- **Forms and language.** Students must fill in forms to gain support and processes are often admin heavy. Moving forms online has led to some benefits but they are still challenging. Good language and messaging is important to encourage engagement.
- **Evidence.** Institutions often require the student to provide formal evidence of their disabilities in order to access support. This is also required for DSA. However this can create barriers and some students will not have evidence to hand. They may have disabilities that are not formally diagnosed. Approaches vary. For example, some institutions do not require evidence before providing support but will expect it later.
- **Appointments.** Advisor-student conversations are often essential but can be challenging to resource and schedule. These should occur prior to start but after results and registration is confirmed. They can be face to face or phone calls, and could align with other activities such as campus visits.
- **Engagement with academic staff.** Student support teams will ideally work with academics and course leads to understand the course activities the student will undertake. This engagement is often limited but may be achieved through intermediaries (e.g. tutors).
- **Workflows.** Processes to get from initial disclosure to the right support in place often require actions and awareness by several units and backlogs in each of these can combine to compound delays.
- **Student awareness and acceptance.** Students have variable awareness of the support that could help them, and their cultural background may affect if and how they engage with disclosure. For various reasons, some students who would benefit do not engage with disclosure or do not accept the support that is offered.

# Artificial Intelligence Readiness

Adopting new, AI-based technologies requires capabilities around data and systems, as well as capacity for innovation. These areas were explored with each participating university and the following themes were apparent:

## Quality data is vital

Universities have data that could support the development of AI within their institutions:

- **Value of data.** Lots of data that is not being used to tackle issues and challenges to improve the student experience.
- **Falling behind.** Some universities are concerned they are falling behind in their use of data and AI, but are unsure where other universities are on their AI journey
- **Learning analytics.** There's interest in using learning analytics to inform a more unified approach to data around student experience. These approaches need to be inclusive of disabled students who use alternative formats and assistive technologies.
- **Different systems.** Several universities reported issues with how systems handle information, and how they communicate with each other.
- **Use of bots.** A university needs to be sure the quality of their data is good enough to underpin a bot and be confident that teams will work together.

## Vision and commitment around innovation

Universities have particular visions about innovation:

- **Expertise.** There is awareness of AI and how it can help bureaucracy. Still, they don't have all the skills sets in the house to move forward, they need expertise. There was an openness among participants to collaborative working with partners.
- **Information consistency.** Participants identified a need for consistency in support offers and ensuring it's right for the student. Some would like greater interaction with students to better understand the types of support to be offered.
- **Training.** While enthusiasm for AI and virtual assistants was high, there was uncertainty that the necessary skills to build these tools would be available in-house, or that those with the skills would have the capacity to dedicate the time required to work on development.
- **Innovation.** Universities are keen to embed innovation in the systems they use. There is understanding that an investment in AI could save significant staff admin time.
- **Use of bots.** There is a distinction between information that can be supplied and which information would be relevant across the whole university or individual areas.

# Institutional priorities and plans

Staff, systems and processes across an institution will ideally be part of change, and it is important to consider how virtual assistants and other technologies fit with institutional plans and where they should be prioritised.

## Shaping priorities for change

Change needs to be prioritised by the institution and guided by experience and expertise:

- **Awareness and guidance.** While some charters and maturity models exist, there is limited uptake so far of these means to guide institutional expectations and improvement around disability. The pandemic has highlighted good and poor practices in new ways and there is greater awareness of accessibility and inclusion.
- **Students' voice.** Engaging with disabled students and understanding their experiences should be at the core of changing processes. There is a need to review what works well and where and how students experience barriers in their journeys.
- **Equality, Diversity and Inclusion.** Disability is often linked with wider strategies for inclusion for other undersupported groups. This can help to align change with institutional strategy but it is important that the particular issues for disabled students, such as disclosure and support processes, are not lost in these wider conversations.

## Strategies for adopting AI solutions

Institutions need to identify strategies that allow them to develop their use of AI solutions:

- **Broad or narrow uses of AI.** There may be a variety of points in student journeys where these technologies are valuable. Institutions may want to consider systems that can help any student at any point in their journey, or target priority areas where there are known challenges.
- **Alternative channels.** Introducing new solutions while still providing alternative channels reduces the risks and offers multiple means for students to engage. Avoiding situations which require the use of chatbots without any alternative can help to avoid negative experiences and improve longer term perceptions and uptake.
- **Starting points.** Disability disclosure can represent a good starting point for introducing these systems. It should occur at the beginning of student journeys and there can be immediate value which can be learnt from and built on as systems develop to add value in wider areas.
- **Supporting staff.** As well as the student-facing opportunities, solutions could be found which support staff with their queries and communications. This recognizes that all staff have a role to play in making study accessible but many lack expertise and need timely guidance.

## Conclusions and next steps

This report draws on the current perspectives and visions of a select group of institutions. As use of AI technologies for student support grows, the sector will benefit from further sharing of experiences and results. Initiatives such as Jisc's [National Centre for AI in Tertiary Education](#) offer a platform for this exchange.

We have highlighted the potential for these technologies to improve the quality and efficiency of student support. However institutions will need strategic and practical support to guide this. Interrogating AI readiness, and identifying priority areas where the qualities of these systems can make a positive difference, require support.

There are also opportunities for collaborative working and shared solutions. There is enough similarity in the requirements of institutions in processes such as disability disclosure and support that solution could be shared and adapted. We will continue to explore how this can be supported with Taylor and similar systems, and we welcome collaboration to develop and pilot this.

## Acknowledgements

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