



Live captioning in education

**A guide to technology and best practice
in educational settings in the United Kingdom**

October 2026

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In this publication, deaf denotes all levels and types of deafness. For brevity, this publication refers to further and higher education as ‘tertiary’ education, and schools and specialist provision as ‘schools’.

Disclaimer:

This publication is **not endorsing** any product.

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About this guide

Intended audience

This guide is for people working in education who want to understand how to use live captions in different contexts. It is intended as an evidence-informed reference and as a practical resource. Readers may use individual chapters according to their role and purpose. This guide covers:

- Added benefits of captioning
- Addressing barriers to effective use of live captioning
- Student choice and informed decision-making
- Best practices and reflections on case studies
- Different types of captioning tools, both free-to-access and paid-for
- Legal and regulatory influences on making captioning available
- Technical considerations when setting up.

Foreword

Access to spoken language has long been a central concern for educators, families, specialists, and education providers supporting deaf students. Educators have used written information, visual prompts, note-taking, sign language interpretation, assistive listening technology, and other approaches to make spoken content more accessible. While live captioning is not a new idea in principle, what has changed is the speed, availability, and visibility of automated captioning tools.

During the Covid-19 pandemic, with mask wearing, remote teaching, and hybrid learning, deaf students and staff experienced new or intensified barriers to communication. An increase in the use of live captioning emerged from necessity and has subsequently enabled many deaf students to experience another communication-access tool. It widened the awareness of options available, supporting informed decision-making around access preferences.

The quality of automated live captions and specialist products for captioning continue to develop rapidly. However, budgetary capacity, technological infrastructure, associated training, and the time to trial and embed captioning tools that best fit the individual needs of a deaf student may mean that practice has not necessarily kept pace with the

technological changes.

The use of live captions creates opportunities, but it also raises practical, legal, technical, and pedagogical questions for education providers. In this guide we learn from professionals in schools and the tertiary sector and their different local contexts. Their key messages consider the individual's preferences, the learning environment, audio capture, software choice, caption quality, governance, safeguarding, data protection, staff confidence, and a need for ongoing review.

We hope this guide presents information to help the reader frame their discussions and decisions for their contexts.

Teresa Quail

QToD, Educational Audiologist, National Executive Officer BATOD

Executive summary

Live captioning is an important part of an inclusive learning experience. While the Public Sector Bodies Accessibility Regulations set requirements for captions on recorded content, expectations around accessibility have continued to evolve. Students increasingly value and use captions in live as well as recorded settings.

Jisc's learner experience research has consistently highlighted the importance of captions and transcription as accessibility tools. As well as being a vital access tool for many deaf people, captions are highly valued by neurodivergent students, international students, and many others who benefit from having information presented in more than one way.

Technology has moved forward. Automated captioning is now widely available, but availability alone does not guarantee a good student experience. Quality, accuracy, context, choice, and appropriate implementation all matter.

This guide brings together lived experience and professional expertise from across education. That breadth is important. Students move between schools, colleges, and universities, and greater consistency can make those transitions easier while allowing different parts of the sector to learn from one another.

The approach taken reflects Jisc's wider approach to digital inclusion, starting with the experiences of students and staff, sharing practice across communities, and using technology where it can make a meaningful difference.

We hope it will support informed decisions about live captioning, encourage innovation, and help education providers develop inclusive approaches that respond to the needs and preferences of their students.

Kellie Mote

Programme lead (accessibility), Jisc

Co-chair, Live Captioning in Education, UK Working Group

Recommendations

To advance the safe, responsible, and student-centred use of live captions in education contexts, the authors recommend:

- 1. Start with a small-scale, evidence-informed approach.** Pilot live captioning in appropriate settings, gather feedback, and involve key people from the outset, including students*, specialist teachers, teaching staff, information technology (IT)/information and communications technology (ICT) staff, accessibility or inclusion teams, and legal or data governance colleagues.
- 2. Use live captioning as part of a wider, needs-led approach to accessibility.** Consider where captions meet an identified student need and add value, where they may be distracting or increase cognitive load, and when other approaches may be more appropriate. Take account of accuracy, timing, and individual preference, and consider how captioning works alongside assistive listening technology, deaf awareness strategies, and other reasonable adjustments.
- 3. Assign clear leadership and provide practical support.** Identify a named champion to coordinate implementation, resolve barriers, and build staff confidence. Ensure reliable technical support is available and provide hands-on training that reflects real classroom, lecture, and teaching situations.
- 4. Plan for successful implementation, not just successful technology.** Consider the wider conditions needed for captions to work well in practice, including staff engagement, leadership support, ICT infrastructure, governance arrangements, and the teaching environment. Review implementation regularly and adapt it in response to student and staff experience.
- 5. Develop shared standards for live captioning in education.** Education providers, professional associations, and volunteer sector bodies should work together to develop a clear set of expectations with students*, specialist practitioners, technology suppliers, and other relevant stakeholders. The standards should define what good-quality live captioning looks like in educational settings, including accuracy, reliability, accessibility, user choice, technical performance, and appropriate implementation.

*For deaf children and young people in schools, parents/carers should be involved in discussions

Chapter 1: Why we have produced this guidance

Live captioning has the potential to improve access for many deaf people in education, both staff and students. It also presents many advantages for others, including those who are learning English as an additional language or who are neurodivergent.

As the technology has improved in speed, accuracy, and features, providing live captions at scale has become more realistic. We want to ensure that providers across all the age ranges, from primary through to tertiary and adult education, have the information they need to get the most out of this technology.

This guide discusses the factors that influence effective live caption implementation and use in education. It also supports conversations with educators about planning, technology, privacy, and teaching context, and with students about access preferences, confidence, and what works for them in different situations.

For teachers, lecturers, and leadership management teams, these considerations may require coordinated project planning with IT teams, business managers, Qualified Teachers of Deaf Children and Young People (QToDs), Educational Audiologists, acoustics specialists, professionals experienced with assistive listening technology, and others experienced in working with deaf students.

Considering captioning across the student journey

This guide is unusual in looking at technology across the different stages of the student journey. In doing so, we create opportunities to consider building-in consistency of experience for students and the sharing of experiences between the sectors.

Growing interest, different contexts

The findings of two surveys undertaken in 2026 – looking at use in tertiary education and again from the schools and specialist provision perspective – provided a useful picture of how live captioning is currently being used across different levels of education. While both sets of data pointed to growing interest and clear potential, they also showed that provision can be uneven and shaped heavily by local context.

In the tertiary survey, live captions appeared to be more established, especially in online learning where students can often switch captions on themselves in platforms such as Microsoft Office Teams or Zoom. However, they were often implemented in a reactive way – after a specific need was identified, rather than being built in as standard. There was considerable variety in the tools used, which may suggest a degree of experimentation and growing maturity, but it also points to a lack of common practice across the sector at this time.

In the schools' survey, respondents were much more likely to say that live captioning was not in regular use or was used only occasionally or on request. Barriers included the impact of poor-quality acoustics, typical background noise levels in busy classrooms, microphone quality, inaccuracies in live captioning capture, connectivity challenges with assistive technology, at-the-time lack of expertise among deaf education professionals and school ICT specialists with the untested accessibility provision. The involvement of the specialist professionals, particularly QToDs and Educational Audiologists for school aged students, is important in understanding and advocating for the deaf student's preferences, alongside the essential onsite ICT specialist to support the teacher's confidence and practical use of the tool.

A key difference seems to be the setting itself. In tertiary education, captioning is often being considered in lectures, seminars, and online sessions. In the school responses, many of the practical concerns relate more directly to classrooms, school environments, and the day-to-day realities of working with children and young people. This makes the question not simply whether captions are useful, but when, how, and in what form they are most effective.

What both sectors have in common

Despite differences in sector experiences, there was strong overlap in the issues raised. Both surveys highlighted that live captioning is valued, but that implementation is often inconsistent and depends on individual initiative rather than being part of a cohesive institutional approach.

Across both surveys, respondents pointed to:

- concerns about caption accuracy and reliability
- limited staff awareness and confidence
- a need for more training and practical support
- uncertainty around privacy and data protection
- a lack of clear organisational policy or guidance.

In both cases, respondents were also clear that technology alone is not enough. What is needed is a combination of better tools, stronger guidance, and a more confident understanding of how captioning can support inclusion in practice.

The shared message

Together, the results show that any guidance on live captioning needs to do more than promote the technology. It needs to reflect the realities of different settings, recognise where captioning works best, and help providers make informed decisions based on pedagogy, environment, privacy, and student experience.

Captioning, cognitive effort and user choice

Captioning can provide important access to spoken information for many deaf people, but its effectiveness depends on accuracy, context and individual preference. It is best understood as one access option within a wider, person-centred approach, rather than a universal or standalone solution.

Cognitive effort and Deaf Load

Deaf people may expend additional cognitive effort accessing spoken information, particularly in environments that rely heavily on listening. This is sometimes referred to as **Deaf Load**.

When captions are inaccurate, delayed, or poorly structured, users may need to infer missing words, mentally correct errors, and use contextual clues to maintain understanding. Over time, this can contribute to fatigue, reduced comprehension, and reduced capacity for sustained engagement, particularly during lessons with a high language demand, longer lectures, meetings, or training sessions.

Accurate, well-timed and clearly presented captions can reduce this effort, enabling people to focus on the content and participate more fully.

Effective access can also enable **Deaf Gain**: recognising the knowledge, perspectives and benefits that deaf people and visual communication bring to learning and wider communities (Bauman and Murray, 2009; Gale and Martin, 2024).

Access is individual

Not all deaf people want or benefit from continuous captioning. Some may prefer to listen using hearing aids, cochlear implants, radio aids, or other assistive listening technology; others may use visual cues, written summaries, note-taking, captions, or sign language.

In education, preferences may also change according to the activity. Factors including the complexity of the subject, fatigue, acoustics, background distractions, the speaker's accent, and articulation can affect which approach works best.

Some students therefore benefit from mixed modes of access, combining spoken, written, visual, or signed information. This might include captions alongside key vocabulary on slides, visual organisers, written summaries, assistive listening technology and/or sign language interpretation.

Research into these combinations remains relatively limited, reinforcing the importance of involving deaf students directly in decisions about their access (Pavani and Leonetti, 2026; Jolly, Macfarlane and Barker, 2024).

Where possible, students should also have opportunities to try unfamiliar technologies before they are introduced in high-pressure or group learning situations.

Sign language and assistive listening technology

Captioning is not a substitute for British Sign Language (BSL) or Irish Sign Language (ISL) interpretation. For sign language users, communication support workers/qualified interpreters provide access through their preferred language, including grammar, meaning, and nuance that written captions cannot fully reproduce.

Likewise, captioning should complement rather than replace effective assistive listening arrangements. For some people, simultaneously processing listening and captions can itself increase cognitive demand.

Deaf children and young people and their parents/carers should be supported, typically by QToDs, to make their informed decisions about their access preferences, and be supported to know they can select different options for different contexts. They may also need to be supported to understand when arrangements, such as live captions, may be implemented for the needs of other individuals in their group.

Key principle

When planning captioning, consider its accuracy and reliability, the duration and cognitive demands of the activity, the individual's communication preferences, and whether alternative or additional support is needed.

Captioning can reduce barriers, but it can also create new ones if quality, context, and user choice are overlooked.

Chapter 2: Learning from case studies

Practitioners from diverse educational settings also provided in-depth case studies outlining their experiences. The case studies span school, higher education, and adult learning contexts, using a mix of free, built-in, and specialist captioning tools.

Taken together, they show that live captioning can improve access and participation, but that successful use depends on context, audio quality, preparation and student preference as much as on the technology itself.

Key learning points can be grouped around the following themes, each of which will be explored in more detail in the sections that follow.

- Live captioning can support a wide range of students
- Audio quality has a major impact on accuracy
- Preparation reduces barriers
- Student involvement is essential
- A small-scale trial can be a useful starting point
- Access to a transcript can be beneficial.

Live captioning can support a wide range of students

Across the case studies, live captioning was seen as a valuable access tool when used in the right context, supporting not only deaf students but also other students who benefited from a written form of spoken information.

Higher education settings reported benefits for deaf and hard-of-hearing students, neurodivergent students, students who found sustained note-taking difficult, and international students. In one setting, captions helped overseas students become familiar with UK accents. In another, a student found them useful for regaining focus during teaching.

The case studies shared by schools identified the following groups as benefiting from live captioning:

- students using cochlear implants or hearing technology
- students experiencing high levels of listening and/or concentration fatigue

- students in post-primary education
- students with strong literacy skills
- students with good working memory.

School-based feedback suggested the use of live captions helped some students follow teacher talk, manage listening and concentration fatigue, and participate without being singled out. However, the impact varied depending on student preference, communication needs, literacy skills, subject content, subject-specific vocabulary, lesson format, room acoustics, pace of teaching, and the quality of wider classroom practice.

The findings suggest that live captioning should be understood as part of a blended, needs-led approach rather than a standalone solution. It does not replace deaf-aware teaching, clear speech, good seating position, visual support, signed communication, assistive listening technology, access to classroom assistant support, or other reasonable adjustments.

This suggests that captioning can form part of an inclusive teaching approach, while still supporting individual accessibility needs.

Audio quality has a major impact on accuracy

The case studies consistently highlighted the importance of good sound input. Large teaching rooms, presenters with quiet voices, poor amplification, and background noise could all reduce caption accuracy. Wireless lapel microphones were particularly helpful in one higher education setting.

Live automated captions may also struggle with subject-specific terminology, names, and some accents. Sensitivity, reasonable adjustment considerations, and engagement with the individual are also required for students and staff who may have speech and communication needs.

The studies emphasised the need to use the best available microphone, position it close to the person speaking, check room acoustics where possible, and test how specialist terminology is captioned in advance.

Preparation reduces barriers

Busy class teachers value a 'ready-to-go' resource as they find that troubleshooting technology during lesson time is disruptive and frustrating. Several contributors emphasised the value of testing captioning in the actual teaching environment before using it with students. Institutional IT restrictions, software compatibility, Wi-Fi reliability, and presentation layouts can all affect how well a tool works.

A short rehearsal can help staff check:

- how to switch captions on and off
- where captions will appear alongside slides
- whether the font size is readable
- whether microphones and connections work reliably
- what to do if the service fails.

Access to a named IT or learning technology contact was also seen as helpful for troubleshooting.

Student involvement is essential

The case studies reinforce that captioning is one access option, not a universal solution. In one higher education setting, a deaf student preferred an established live note-taking arrangement and did not want captions to replace it.

One sixth form deaf cohort tried and tested a few different captioning systems and identified which tool worked for them in lessons that take place at the partner mainstream school site. They selected a tool that for them was the best in terms of accuracy but that also had different colours for speakers (when using the group microphone) which provided more clarity for the deaf students following the captioning.

In primary and secondary education, targeted sessions with a QToD on relevant areas of the Specialist Deaf Curriculum Framework (SDCF) can help students develop self-advocacy skills and make informed decisions about access. A QToD report may also reduce the need for students to answer the same questions repeatedly by recording their views on when they would prefer to use live captions, where captions should be displayed, whether captions support or distract from other access arrangements, and whether an alternative approach is preferred.

Where students already have adjustments, live captions should complement rather than replace agreed specialist support.

A small-scale trial can be a useful starting point

The case studies suggest that providers do not need to begin with a large-scale implementation. Starting small allows time to refine training, identify technical considerations, and gather real-world feedback before considering any wider model.

Built-in and browser-based tools may offer a low-barrier way to explore what works in a particular setting. Section 9 contains a checklist to help practitioners get started.

The aim is not necessarily perfect captioning from the outset, but a reliable and inclusive approach that improves through testing and feedback.

For school settings, data protection and information governance should be addressed before commencing any project, especially if the recorded data will be retained for any period. The planning process would benefit from students, parents/carers, volunteer sectors, and union representative engagement to clarify and agree expectations.

Live captioning with transcription recording

Some case study examples involved live captioning with transcription recording. Whilst this document has not focused heavily on additional features of captioning tools, we have included the case study feedback to help inform project planning. The case studies share the learning from an education authority led pilot and a deaf specialist school.

The multi school pilot using Caption Connect offered the education authority a practical way to explore live captioning in authentic classroom settings. Where conditions were suitable and students engaged with the tool, captions appeared to support access to spoken information and helped students follow lessons.

For one deaf specialist setting, Speaksee live captioning was used when the sixth formers attended lessons in the mainstream partner school where the teacher was speaking and not using BSL. A-level lessons have subject specific terminology and potentially complex language. As A-level students, they were expected to take notes when their teacher and peers were talking. However, deaf students may miss information when trying to take notes. A communication support worker (CSW) is unable to provide full sign language interpretation and note take for students. For these deaf students, the provision of a transcript supported their independence. It allowed them to access the whole lesson and have parity in how they experienced A level classes.

Access to a transcript can be beneficial

For students, it provided a useful written record to help revisit lesson content.

For staff, the transcripts could:

- generate lesson summaries that helped structure key information for students
- modify the language to meet the needs of different students
- provide material for students who missed the lessons
- create bespoke learning materials.

The case studies shared some concerns relating to recordings and transcript retention. Findings highlighted that implementation required lead-in time, engaging with teaching staff to understand their classroom environment and their training needs, building staff confidence with troubleshooting issues during lessons, coordinating with curriculum and timetable demands, engaging ICT departments, identifying equipment required to resolve connectivity and acoustic issues, and clarity around data governance.

Chapter 3: Practical tips for successful live captioning in teaching spaces

Deaf students with their own assistive listening devices and captioning software arrangement may have different needs. Therefore, discussions with students and specialists are essential.

However, it is worth exploring how to get started with a fairly standard set-up in many learning environments. The following insights were provided by staff working with a whole-room display using Windows 11-automated captioning on a presenter's personal computer (PC) in an amplified-room setup.

“At the University of Edinburgh, we are fortunate to have a dedicated Learning Spaces Technology team who are responsible for ensuring that teaching-room audio equipment is installed and working to the expected standard. The use of microphones is also emphasised in staff training as part of our responsibility to provide lecture recordings. So, the captioning work I have supported very much relies and builds on this existing infrastructure and expertise.”

Based on the experience of using Windows 11 Live Captions, the Edinburgh University team suggest:

- Where possible, use tools within software or operating systems that staff already know rather than introducing another platform. This can encourage adoption and reduce the cognitive load on teaching staff.
- Encourage teaching staff to use the devices installed at the teaching desk, where available, rather than bringing their own devices. Institutionally managed equipment is more likely to work reliably with the room's microphones and displays.
- Provide clear, concise guidance in multiple formats. In our case, we created a short video guide: [How to enable live captions in Windows 11 – Media Hopper Create](#)
- Where possible, offer hands-on support during the initial setup or first teaching session. It is also helpful for staff to test the setup in the teaching room beforehand.
- Check that microphone access is enabled in device settings and that the correct microphone is selected.
- Demonstrate how to adjust the captions' position, size, colour, and general appearance so that they remain legible without obscuring teaching materials.

- Encourage speakers to use the room microphone consistently* even if they believe they can be heard without it. Good microphone practice benefits both live captions and lecture recordings.
- Consider privacy during interactive activities. Depending on the context, it may be appropriate to mute the microphone or pause captions during small-group or sensitive discussions.
- Raise awareness of live captioning through wider staff development and learning-technology training, rather than presenting it only as an individual adjustment.

*Please note, this advice is specific for the PC/Windows-11-in-an-amplified-room scenario. For a number of reasons, such as personal preference, accessing an equivalent signal, a deaf student with their own assistive listening device and captioning software arrangement (eg a personal remote microphone routed to their own device) may need to use their own equipment rather than the room device.

Room and campus infrastructure

The Learning Spaces Technology team at the University of Edinburgh provided some further practical tips to creating the conditions for good audiovisual provision and teaching space infrastructure. Here are some tips from Jamie's colleagues on the University of Edinburgh Learning Spaces Technology team for creating the right environment.

- Live captioning depends on the microphone audio reaching the device running the captions. In institutions where teaching rooms are already equipped for hybrid teaching, this groundwork may largely be in place: room microphones are typically routed into the PC at the teaching desk for use with video conferencing software and the same audio path can serve live captions, provided the person teaching uses the room PC rather than their own laptop.
- The critical point for anyone specifying or installing microphones is that audio must be routed to the room PC as well as to the in-room sound system. A room can have a perfectly good microphone that does not support captioning because it feeds only the loudspeakers. This is worth checking in existing rooms and specifying in new installations.
- On equipment, rechargeable wireless lavalier systems work well; they are easy for teaching staff to pick up and use, and avoid the ongoing cost and inconvenience of batteries. Professional-grade sets such as the Sennheiser SL Lavalier Set DW-3 are one option, although several manufacturers offer comparable products.

- Equipment of this quality is not cheap and rolling it out across an institution takes considerable time and money. The investment does more than enable captioning, however, the same microphones improve lecture recording quality, hybrid audio, and in-room amplification, which makes the business case easier to build.
- Finally, it helps to maintain and publish a list of which rooms are equipped for hybrid teaching so staff know in advance where live captioning will work.

“Do not be afraid to get feedback from the end user and ask questions to improve the service delivery of live captioning. For example:

- Where would the captions be displayed if the classroom teacher were presenting from a PowerPoint?
- Could the captions be repositioned dependent on the layout of a presentation?”
[Case study quote]

Chapter 4: Legal and regulatory framework

Public Sector Bodies (Websites and Mobile Applications) (No.2) Accessibility Regulations 2018 (PSBARs)

The UK PSBARs regulate online content for public sector bodies requiring them to meet accessibility standards and publish accessibility information 'live time-based media' (audio-visual media) is excluded from the requirements of the regulations (r.4(2)(c)).

In contrast, for those institutions that promote their education services in the European Union (EU), EN 301 549 is the primary European harmonised standard that defines accessibility requirements for ICT products and services. This standard aligns with the Web Content Accessibility Guidelines (WCAG) referred to above.

The Equality Act and reasonable adjustments

The "Duty to make adjustments" in the Equality Act 2010 is the legal basis that regulates this area. (Note that the Equality Act is relevant to England, Scotland, and Wales. In Northern Ireland, the relevant legislation is the Disability Discrimination Act 1995.) In brief, there is a requirement to anticipate the needs of disabled people and to make appropriate reasonable adjustments.

Where the financial resources, practical facilities and the capability are available to an institution to deliver live captions in the learning environment, it may be difficult to argue that providing live captions is an unreasonable adjustment.

Relevant sections of the Equality Act include:

- a legal duty on an institution not to discriminate against a student in the way it provides education for the student (s.91)
- an institution must not discriminate against any enrolled student in terms of the education services it provides (s.92) and
- a legal duty on education institutions when providing information to do so in an accessible format (s20(6)).

What that amounts to is a clear obligation on an education provider to act proactively to deliver learning content and services accessibly.

What does reasonable mean?

Although the word ‘reasonable’ is not defined in the Equality Act, it is accepted that its meaning is decided on a case-by-case basis depending on what is practical and fair in a specific situation. The test of what is reasonable is ultimately an objective test and not simply a matter of what one individual may personally think is reasonable (Equality and Human Rights Commission).

It is suggested that the following are factors that determine whether an adjustment is reasonable:

- how effective the change will be in avoiding the disadvantage the student would otherwise experience
- how practical the adjustments are to implement
- the cost
- the institution’s resources and size
- the availability of financial support.

What standard of captions is required?

The term ‘accessible format’ (in s20(6)) is also not defined in the Equality Act. For our purposes in the education setting, it is taken to mean accessible in terms of the success criteria described for live captions in the W3C WCAG.

Although accessibility guidelines do not define a quality level for real-time captions, the expectation is that they are ‘equivalent’, which implies a high level of accuracy. (Note the term ‘equivalent’ is used in the WCAG success criteria for time-based media.) See Chapter 7 for guidance on accuracy of tools.

Chapter 5: Hardware and integration with assistive listening technology

This guidance covers a wide range of settings and technology, so it is not possible, or particularly helpful, to be prescriptive about a single correct set-up. Instead, this section sets out the key components of a successful arrangement, to help you put together a combination that will produce suitable captions in your space.

In simple terms, you need to get the speech from its source into the device that will produce the text for the user. The key components in this chain are the microphone that picks up and transmits the speech signal, and the receiver that collects that signal and feeds it into the device producing the text. Several variables affect how well this works in practice:

- what type of microphone is being used, and what type of communication it needs to capture
- how that microphone interacts with the room
- what type of receiver is being used
- what type of device is being used for speech-to-text, and whether captions are shown to the whole room or an individual
- what software is producing the text, and how the software and hardware are configured
- how the assistive listening technology synchronises with the rest of the set-up.

Each of these is considered in turn below.

What type of microphone and what is it capturing?

Is the microphone a generic room microphone – for example a lapel, handheld, table or ceiling microphone? Lapel and handheld microphones are directional, designed to amplify a single talker; table and ceiling microphones are typically omnidirectional, designed to amplify a group of people.

Which of these is right depends on what type of learning or communication is happening. In a classroom or lecture set-up with one main speaker, the speaker will typically wear a lapel or handheld microphone/transmitter – a directional set-up. In a situation such as a tutorial, discussion forum, or online learning session where more than one person may need to be picked up, a desk, ceiling, or daisy-chained microphone arrangement will be more appropriate.

Or is the microphone a specialist assistive listening device? If so, it is worth knowing what broadcast system it uses, since this determines what it can connect to:

- Bluetooth Low Energy (LE) Audio / Auracast (2.4GHz band)
- Proprietary 2.4GHz digital wireless systems
- Audio-over-Wi-Fi (2.4GHz and 5GHz bands)
- Infrared (IR) systems (light waves).

How does this microphone interact with the room?

Some spaces have a built-in audio system. These can be a generic public address-type system, with lapel, handheld, table, or ceiling microphones and loudspeakers, but the room could equally have a specialist assistive listening soundfield system as its amplification. Some rooms have no amplification at all.

With a generic amplification system, the first thing to check is whether the system feeds the room microphones into a PC in the room as well as into the loudspeakers. If it does, that PC is likely to be the device with the capacity to produce speech-to-text captions. However, it will be down to the staff that manage the room set up and other technical staff to determine if live captions are a practical option. It is worth noting that a laptop or other device that has not been configured for this is unlikely to be suitable for captioning from the room's generic microphones.

If the room has a soundfield system, this may also have the capacity to be used for speech-to-text, but it will need a suitable receiver attached to the captioning device to pick up its signal.

If the room has no amplification at all, there is no existing audio infrastructure to draw on, and you will be relying on a specialist assistive listening technology device – a personal remote microphone and receiver – to capture speech reliably enough for both listening and captioning. A device's own built-in microphone is not a substitute for this; it will struggle with distance, background noise, and more than one speaker, exactly the conditions an unamplified room is likely to produce.

What type of receiver is being used?

Where the audio is not already integrated into the captioning device, you will need a receiver to pick up the microphone/transmitter signal. The type of receiver required depends on the type of microphone/transmitter being used, and the two need to be part of

a compatible system to work together – for example, a dedicated receiver matched to a specialist remote microphone system, or a Bluetooth or USB audio receiver where the microphone broadcasts over Bluetooth or Wi-Fi. A mismatched receiver, even from a similar-looking system, will not pick up the signal.

What type of device is being used for the speech-to-text?

Does the device run Windows or iOS? Is it a PC or laptop, or a tablet or phone? The device and operating system affect which captioning software is available and how straightforward it is to route the receiver's audio into it. This choice also determines who the captions are for: a shared room PC will typically show captions to the whole room on a common screen, while an individual's own laptop or tablet shows captions only to them – and the two can need different audio paths even within the same room.

What type of software is producing the text, and how are the software and hardware configured?

There are various software/operating systems available – Windows 11, PowerPoint, and specialist software systems. Whichever is used, you will need to go into its microphone setting and change this from the default microphone to the receiver you are using; otherwise, the software will caption whatever the device's own microphone happens to pick up rather than the intended signal.

How does the assistive listening technology synchronise with the set-up?

It is important that the hearing aid user is connected to the system. The connection set-up will be influenced by how the room is configured and how the microphones are processed.

Where possible, the same microphone signal should be used to feed both the person's listening device and the captioning device at the same time, so that what they hear and what they read come from the same source. This is particularly important in an unamplified room where a personal remote microphone may be the only source feeding both. Where a shared source is not possible, check that the listening and captioning arrangements are at least picking up the same presenter so the two stay in step with one another.

Captioning tools, such as live speech-to-text or automatic transcription systems, can provide valuable support by converting spoken language into written text in real time. The platforms rely on at least one microphone to capture speech. However, the effectiveness

of these systems is heavily dependent on the quality of the audio they receive. Accuracy and reliability can be reduced by:

- distance between speaker and microphone
- background noise
- room acoustics and reverberation
- multiple people speaking at once.

Assistive listening technology is specifically designed to improve access to speech, and more detailed information can be found in the resource provided by the UK Assistive Listening Technology Working Group (ALTWG).

The integration between captioning tools and assistive listening systems is developing. Some captioning applications can accept audio from an external microphone source, including compatible remote microphone systems. A recognised example is the use of a Phonak Roger remote microphone connected through a Roger NeckLoop and compatible device audio input, allowing the same microphone signal to be used for both assistive listening and caption generation. Compatibility with other systems may vary depending on the hardware, software, and connection method used.

However, depending on how the room system has been configured, the set-up may not require a remote microphone device. If the audio sources in a room are processed through devices such as a Base Station, then the room microphones can work well. However, if there are multiple microphones in a room, two separate networks are required. For example, teaching spaces in higher education may use ceiling fitted omni-microphones where platforms such as Teams and Zoom are being used. The use of two separate networks addresses the issues of the omni-microphone picking up all voices.

Good practice

When using captioning tools alongside assistive listening technology:

- prioritise high-quality audio capture
- ensure the correct audio input source is selected
- check caption accuracy in real-world conditions
- remember that captions are an additional access support rather than a replacement for hearing technology, sign language interpretation, or other communication strategies.

When implemented together, live captioning and remote microphone technology may significantly improve access to speech.

Chapter 6: Software options

This section does not include step-by-step instructions for using each tool, because features and interfaces change as software is updated. Readers should refer to vendors' current instructions and share experiences through BATOD's and Jisc's community spaces, eg the accessibility and assistive technology communities.

Deciding between the range of tools available

In our surveys, most striking was the diversity of captioning tools being used even in a relatively small sample.

Respondents from tertiary education reported using a range of tools, with the most common, at the time, being PowerPoint 365, CaptionEd, and Windows 11 Live Captioning. Verbit, Genio/Google Live Captions, Mac iOS Live Captions, AI Mediam and Microsoft Teams were also in use.

In schools, there was less diversity of tools reported, largely because captioning is not as widely used; however, there was evidence of the use of Windows 11, Google Live Captions, PowerPoint 365, Caption Connect, CaptionEd, and Speaksee.

We have separated tools into three categories to help us understand the options that are generally available to education customers. These are: live captioning tools integrated into other platforms, standalone paid tools, and standalone free-to-use tools. We will discuss some of the different software options for live captioning, including the variety of features they may include, and their general benefits and limitations.

Considering additional features

Across those categories, tools may also provide additional features, besides the production of the captions themselves, which can improve user experience.

Common supporting features to consider include:

Customisation options

These provide options to the user to change the visual presentation of the captions. These usually including aspects like the placement and size of the caption box, the font size, font family, text colour, and background colour.

Caption sharing

Tools may provide different ways that captions can be shared among users, allowing them to view them on separate devices rather than on a shared screen. This is often done with a link or QR code.

This makes it easy to share captions with a large amount of users accessing them on personal devices. When coupled with customisation options, this allows caption users to adjust the settings to meet their individual preferences.

Language options

Language options might include those which are set to which language is being spoken so that captions are correctly presented in that same language, eg a Welsh speaker with captions presented in Welsh, or those which translate captions from one language to another, eg a Welsh speaker with captions presented in English.

Some may also include the ability to have multiple languages captioned correctly at once without needing to switch between language settings. This is helpful for multi-language content, for instance in a language learning class where a speaker might switch back and forth between English and Welsh.

Speaker identification or labelling

This is the ability of a captioning tool to separate and label the voices of individual speakers, which makes audio with multiple speakers easier to follow. Typically, this will present as 'Speaker 1', 'Speaker 2' etc, and text colour may be used to differentiate speakers. Some tools also allow a user to set the speaker names manually to their actual name.

Summary notes and transcription

Some captioning tools may have the functionality to generate transcripts, summaries, and notes. These features may be helpful for providing resources for students absent from the lesson, targeted material for specialist teacher interventions, and shaping revision material.

Many tools are now also utilising generative AI to allow the user to generate bespoke summaries, key points, and other learning materials using the transcription.

Uploading glossaries or specialist terms

Tools may allow the user to upload a glossary covering vocabulary which will come up in their context, such as names and specialist terminology. This can potentially improve the accuracy of the captioning.

What features are needed?

There can seem a lot of different features to consider, and a mix of these are found across free and paid, integrated, and standalone, tools.

Considering which are most important for your user's experience and the situations the captioning is taking place can support decision-making around tools.

For example, if captioning is going to be regularly needed for lectures involving multiple presenters, then speaker identification could be a valuable feature. Alternatively, if you know your caption users have English as an additional language, then they may benefit from being able to toggle captions to their first language. Or, if you have users with vision impairments, then the ability to increase the text size of the captions and have them display on their own device may be essential.

Integrated tools

This section considers live captioning features integrated into other tools and systems.

Examples include Mac iOS Live Captions, Windows OS Captioning, Android Live Transcribe, Microsoft Teams, Microsoft PowerPoint, and Google Chrome Captions. Some are integrated at the operating system (OS) level (eg Mac iOS, Windows), some are within web browsers (eg Google Chrome), and others are at the application level (eg Microsoft Teams and PowerPoint).

The level at which these are integrated impacts the situations they may work best in as it can limit where the features can be used. Features at application level (eg PowerPoint, Teams) will only work within those programmes, for instance, when in an online meeting or when presenting a slideshow. Those at the OS level will typically work across most programmes and platforms the user has on that device.

Some features may be limited if the tool does not access the device's microphone. Google Chrome captions is an example of this; at the time of writing, it processes audio within the browser only. This means it can be useful for captioning things like livestreamed content, but if the user were in an online meeting within their browser, it would not be able to

caption their own speech as it does not access the microphone. It is important to check what integrated tools can do in terms of interoperability with other applications and what audio sources they can use.

A key benefit to integrated tools is that most organisations likely already license or have purchased platforms and devices with live captioning features. They can therefore make these available to their users at little or no additional cost. An additional benefit is that the terms around any data that is recorded as part of live captioning generation is typically covered by the same terms as other data processed on that platform. It remains important, though, to double check your exact license terms.

“We use a GDPR-compliant approach. There were no data protection issues because the captions are not being sent anywhere.” [Case study quote]

Integrated tools may have a range of additional features. Language options are generally a common feature as well as customisation options, though how expansive these are will vary. Notably, some features may be restricted based on the level of license, for instance, at the time of writing, users with Copilot+ PCs have more language translation options than those using Windows captioning on a regular PC.

Speaker identification and labelling looks to be a rare feature in integrated tools at this time. It is technically available in a form where participants are joining online meetings via separate accounts, as these platforms will be able to identify them based on their account information. However, there are limitations to this such as where people join an online meeting from the same account (such as when sitting in the same room) or for any in-person situations where the captioning is running from one device.

Standalone paid tools

This section considers tools that are separate, paid for products. Within this category, though, there are both tools where live captioning is a primary feature and captioning is the main purpose of the tool, and those where live captioning is more of an additional feature itself.

Examples include tools like Caption.Ed, Verbit, and Caption Connect which have live captioning as a primary feature, and tools like Jamworks and Genio where live captioning is part of a wider transcription and note-taking support service.

A key benefit is that standalone, paid-for options typically have the best range of additional features available – particularly those for speaker labelling and sharing captions to other devices easily. As with integrated tools, compatibility with other applications needs to be checked. Typically, though, standalone live captioning tools are designed with some level of interoperability.

Standalone services may also offer domain-specific captioning, using speech recognition models which have been trained on spoken material from specific domains, eg medical or mathematical terminology. This can be effective to improving accuracy for captioning of similar material.

“Establish which live captioning software will work best with the school's IT system. There are different options available which will depend on the platform and other software used.” [Case study quote]

The key drawback, of course, is that these tools will incur more significant costs. Most operate on a subscription basis and will offer separate tiers based on access to features and the volume of usage needed (usually set out in minutes per month of captioning). Some offer education-specific licences which are designed for institution-wide implementations.

Terms and conditions relating to data security still need to be checked even with a paid-for solution. There are a lot of providers in this space and some who may be based in and store data outside of the UK/ European Economic Area (EEA).

Where live captioning is an additional feature

Live captioning features are often incorporated into tools for note-taking, transcription, and study support. These features are typically intended for use on the individual user's device rather than for broadcasting captions to many users. They may therefore use the caption user's device to pick up the audio for captioning. This means their device will need to be able to pick up the audio of the speaker or be connected to the speaker's microphone. This can be challenging depending on the quality of and distance to the speaker's microphone and the noise level in the room.

The other features of these tools may factor into decision-making as their other capabilities (eg summaries, note-taking support) may meet users' needs beyond captions too. However, where the focus of the tool is not captioning, the live captioning feature may be less likely to have the range of capabilities as that of a tool where it is the primary feature.

Standalone free-to-use tools

This section considers tools that are standalone products which are free to use, as well as those that have a free-to-use version in addition to paid options. Examples include free web-based tools like caption.ninja and tools with free subscription tiers like Otter.ai and Maestra.

Searching online for free live captioning tools will bring back plenty of results, and the benefit of these tools being free is substantial. However, as with any other free software they often have significant usage limits. At the time of writing, for instance, Otter.AI's free tier offers 300 minutes per month of live transcription. This would not be suitable for a user who requires regular captioning. Free tiers can be a useful way to test a solution, though, before committing to subscribing. Similarly, while free tools can have additional features, they are typically less likely to be available than in paid tools, and the user experience is likely to be less developed as a result.

Free solutions may also require concessions in data privacy which could render them completely unsuitable for use in education. Including relating to how user data is stored, shared, and used by the provider.

Some services – both free and paid – may have terms that include the use of user data to train AI models too. There may be a choice for the user to opt-out of this, or opt-in to if they want to share that data. However, in some cases with free tools, it can be a requirement of using the service with no charge. For instance, Otter.ai users cannot opt-out of de-identified user data being used for model development; this is only available at their enterprise tier.

Checking terms and conditions and privacy policies to confirm whether and how data can be used is essential. Again, this is good advice for all products, free or paid, but with free, unlicensed tools, and in particular those which do not require account creation or setting up any user agreement with the provider, there are significant risks. These terms can change, too, and without a license or agreement in place, users may not be updated if they change suddenly.

Software and hardware combined

Also available are services which combine hardware and software to provide all-in-one live captioning solutions. Examples include services like Speaksee which provides kits including microphones and a docking unit combined with a subscription to their captioning software which can be run on a personal device.

Smart glasses with live captioning functionality may also come into this category. These are glasses which provide live captioning to the user within a visual display in their eyeline. Examples include both those designed as assistive technology eg XRAI captioning glasses, and mainstream commercial models including Meta Ray-Ban Display glasses (not currently available in the UK).

In colleges and universities, smart glasses are currently a divisive technology, with much media attention around the privacy risks and recording functionality of the glasses. These concerns are important but can be balanced with their benefits as assistive tools. Notably, many captioning glasses, particularly those designed as assistive devices with captioning as the primary function, typically do not require a camera, reducing some of these concerns.

It is unlikely that smart glasses or mobile technology (often required to be linked to the glasses) would be allowed in a school setting, and especially in assessment/examination contexts. School safeguarding policies and the malpractice guideline for awarding bodies must be adhered to.

Chapter 7: Factors influencing caption quality

Accuracy

Across captioning software options, we may encounter figures relating to the accuracy of the tool indicating how correctly it transcribes the spoken audio into captions. Determining the accuracy of a tool is complex, however, and figures cannot be compared so easily as choosing a provider who claims a higher accuracy percentage.

Importantly, accuracy can vary significantly depending on factors outside of the software itself, including the quality of hardware used, noise interference, and where audio processing is being done online, factors like internet connection speed.

“...frustrations largely stem from caption inaccuracies, [caused by] using [the captioning tool] in large lecture theatres without allocating the presenter a lapel microphone and instances where recording unexpectedly stops.” [Case study quote]

Determining and comparing accuracy figures

Different evaluation methods are used to determine the accuracy of automatic speech recognition models. As users, we should not need in-depth knowledge of accuracy testing to be able to make informed decisions, but it is helpful to know some basics.

Some aspects to be aware of are:

- **Evaluation metrics** – ways to quantify the accuracy of speech recognition
- **Datasets** – the audio data that the evaluation is performed with
- **Benchmark tests** – a full evaluation method that includes metric(s) and dataset(s) which provide a method for assessing accuracy and can be used on different models, allowing their results to be compared.

When reviewing provider claims, consider both the reported accuracy and how representative the testing is of your intended use. Information from providers may include:

- An accuracy figure using an evaluation metric. Common metrics used include Word Error Rate (WER) or its inverse, Word Accuracy (WAcc); these are usually expressed as a percentage.
- Information about limitations of that figure including how any weaknesses in the chosen accuracy metric have been addressed or mitigated. All evaluation metrics have limitations.

- Results of any benchmark testing showing how the tool performs against other models tested using the same benchmark.
- Details of the test datasets, including what types of speech or content were included.
- Domain-specific testing, for example, with medical lectures, mathematical content, or other specialist subject areas.

These measures can help users understand not just the headline accuracy figure but also how representative and relevant the testing is to their own context.

Top tip: expect providers to be able to evidence the accuracy of their services, including being able to explain the kind of data that was used for testing. Those that have been tested with data closest to your use case (eg for a university, educational lectures and seminars) will have accuracy figures that are more relevant to you.

We can also look for independent research and studies, although unfortunately, these are not always available. Disability World, for example, has conducted a comparison of some of the most popular tools alongside a professional human live captioner.

Improving accuracy with use

Some providers can also improve the accuracy of their models for their customers by developing them further with the customer's data as they begin to use the tool. This typically involves explicit customer consent and can help the model improve over time in captioning for that customer's specific content.

Some tools also allow the user to upload a glossary of terms. Providing custom vocabulary that will appear in their context and might be more unique, and which the model might struggle with.

Accuracy of translated captions

Some services offer multiple language options, and while they may support many languages, this does not mean accuracy across languages will be equal.

For translated captions, the quality of translation of the captions will affect user experience. Translation of captions typically occurs after they are transcribed in the language that is being spoken, eg audio in English is transcribed into English text and then translated into the chosen language.

Some providers may use end-to-end speech translation models which do not use a multi-step transcribe and then translate process, instead they effectively perform the whole task from spoken audio in one language to captions in another in one step. This means they do not encounter the issue of carrying mistakes between stages; however, it can also mean mistakes are difficult to track as they are less transparent systems. This method is a less common approach as end-to-end models are more difficult to build and typically require large amounts of well-prepared data to train.

Speech recognition across languages

Captioning of different languages requires different speech recognition models trained for those different languages, eg a French speech recognition model will have been trained on French language audio.

Some languages are more easily resourced than others in that it is easier to get large amounts usable training data for them, eg English, Spanish, and Mandarin. For these, it is easier to train an effective speech recognition model for captioning; for others, it is more challenging and the quality of captions in those languages can be reduced as a result. There are efforts to increase data availability in different languages. The Welsh Government, for example, provided a regular update on the many efforts to improve Welsh language support across digital tools including speech recognition.

Top tip: ask providers about how their language features work and if they can provide accuracy information for the different language options they offer.

Latency

Some providers may also advise on the latency of their tool. This is the measure of how long it takes for captions to appear after the related audio. This is usually presented as a range of seconds or milliseconds based on the average performance of the tool.

Methods for measuring latency vary, and as for accuracy, latency figures may represent different measures. This is because the measure can start and end at different points in the process. For instance, measuring from the beginning of an audio clip to the point where captions begin to appear could yield a different number than measuring from when each word appears in the audio to when that word appears as a caption.

Some systems may also present a caption, but this is not finalised – it can change as the model processes and applies context from the text that comes before or after that word to improve accuracy. We sometimes see this happen live as one word appears and then

suddenly changes. So, there is a different measure that can be taken from when the first word appears to when it is finalised. In this way, there is also a tension between accuracy and latency which developers must balance; more processing time can improve accuracy but too much of a delay makes captions lag.

Importance of reduced latency

Latency can be as important as accuracy for caption users to be able to effectively access the content being delivered. There have been studies on how different caption latencies affect user's comprehension and ability to participate. Different studies have focused on different groups of caption users, including those who are deaf, those accessing captions not in their first language, and neurodivergent users. Broadly, these studies make recommendations ranging from around 2 to 4 seconds as an acceptable average latency, with delays beyond that range causing increasing user experience issues.

Currently, for live subtitles, Ofcom recommends an average delay of no more than 4.5 seconds. Before a 2023 consultation, their guidance recommended a maximum latency of 3 seconds, but this was updated to reflect broadcasters' responses that it was not possible to achieve. Responses from Royal National Institute for Deaf People (RNID) and the National Association of Deafened People (NADP) expressed concern with this change, stating that it might reduce broadcasters' efforts to reduce latency.

"Most rely on WiFi to search for information. This can be limiting as it can cause latency with respect to lip reading or drop outs." [Case study quote]

It is noted, too, that latency can be more impactful in different situations. For instance, in a conversational setting like a seminar, a longer delay means the caption user will miss opportunities to be able to join the conversation or interject with questions before the discussion continues. Even an extra second or two could prevent them from being able to participate effectively. Whereas in a lecture scenario, this may be less impactful, particularly if there are breaks in the presentation to allow for questions.

As with accuracy, a provider claiming a latency figure should be able to explain what that measure is and the conditions under which it was tested. There are similar considerations, too, in that other factors, particularly those like internet connection quality, can affect latency.

Accuracy and latency summary

Figures around accuracy and latency given by providers are likely to be for the tool working at its best. It is difficult to know how well a tool will perform until you or your users are actually using it in context. Accuracy and latency can also depend on factors not related to the performance of the speech recognition model including hardware quality, noise interference, and even internet connection.

Discussing these figures with providers is a helpful exercise when looking for a solution. How providers respond to questions about how their services are developed and tested can reveal whether they are a provider you would want to work with.

“Factoring in time to test live captioning, and asking for support with trouble shooting before presenting with mainstream teachers is good preparation.” [Case study quote]

Other things you can do:

- **Ask for case studies/reviews:** You could also look at whether providers have case studies from organisations similar to your own, eg other educational institutions
- **Test in your context:** Ask if a provider can run a test of their service with a sample of your content, particularly if your context involves more specialised vocabulary. Asking for a free trial when trying out a tool with content specific to your context can be helpful and provides opportunity to assess the user experience too.

Human and machine captioning

This guide focuses on live captioning through solely automated systems. However, there are many circumstances where human and automated captioners are used together to achieve better-quality captions. This may be particularly important where the content is complex, fast-moving, or dependent on specialist terminology. Human captioners can interpret context and make additional notes which automated systems cannot.

Chapter 8: Data protection concerns

What happens to personal or confidential data collected?

Institutions already have vast experience of processing personal and confidential information in the teaching and learning environment, including special category data. In practice, delivering live captions will involve the recording of individuals and this must be fair and lawful.

Privacy notice

Clear information must be provided in advance to those being recorded about the nature and purpose of the recording. This includes information about who is making the recording, how it will be re-used, the lawful basis, how long the recording will be kept for, and to whom it will be disclosed or shared with. This is usually done in the form of a privacy notice.

In practice, all adult students should be referred to the privacy notice and informed that live captioning is taking place. In educational settings for children and young people, the setting-specific safeguarding and privacy policies must be adhered to.

In some circumstances when a recording is to take place, a simple announcement by the lecturer/teacher (referring to the privacy notice) will be sufficient.

Where there is likely to be a significant contribution or presentation by a participant or another party, a signed consent form prior to the recording is needed.

Recordings cannot subsequently be used without consent, for purposes that are incompatible with those for which they were made.

Live captions

What may be different with live captions is that in the live relaying and showing of individuals (their images and their words), there is unlikely to be the opportunity to review and censor/correct the output of captioning tools. As well as being an accuracy issue, this will be seen as a problem where there are children and/or vulnerable persons involved whose personal data is being processed.

This is difficult to regulate, and the challenge is to be able to accommodate time critical captions as well as prevent inaccurate and/or inappropriate content being communicated. This is not an easy balance to achieve consistently.

For recording teaching situations of this kind, please refer to the complementary guides 'Legal considerations for recording lectures' and 'Lesson capture and streaming for further education institutions' on the Jisc website.

High-risk processing

In terms of data protection legislation in the UK, a child means anyone under the age of 18. Where there are students under 18 years of age in situations that involve recordings (including the capture of live captions), it is recommended that a data protection impact assessment (DPIA) is carried out. This will help decide if the children's interests are adequately protected. Also, if the processing is likely to be high risk, then a DPIA must be carried out.

AI training concerns

Another privacy point raised is fears that captioning tool providers will use content recorded with the live caption tools to train their AI models. This could include sensitive/personal data as well as copyrighted material.

The Jisc blog 'AI and data security – Let's worry about the right things' addresses these concerns to some extent. The headline recommendation from there is that you should never put personal or private data into any IT system for which you do not have a robust contract in place, and this includes tools incorporating AI. So once again, it is essential to review all systems equally in terms of potential sources of AI training and review and check all contracts, not just captioning tools that have integrated 'AI tools'.

Is consent from teachers or students needed for live captions?

Once again, institutions will already have vast experience of managing the consent of individuals in the teaching environment. Most processing of personal data in teaching does not rely on consent as a lawful basis and is rather carried out as part of the legitimate interest of the institution.

Consent of teaching staff can be a fraught matter and the agreement of teaching staff to having captions and live recording is a critical aspect of achieving a high standard of interaction and communication. The worthy aim should be, as far as possible, to remove or reduce any disadvantage faced by deaf students or students with disabilities.

In summary

The UK General Data Protection Regulation (GDPR) specifies what individuals need to be told when their personal data is being collected. Engaging with the institution's data protection officer early in the process of adopting captioning software tools will help with avoiding difficulties and assist with informing users on how their personal data is used.

Captioning related personal data will in many cases be already covered by the institution's data protection policies and privacy notices. However, due diligence is likely to require scrutiny of captioning tools terms and conditions to ensure that users are informed about the extent of the processing involved and are provided with the necessary safeguards and information. Particular caution should be taken with 'free to use' captioning tools whose terms of use may not be in line with the institutions privacy and data security and other policies.

Chapter 9: Captioning checklist

Here is a potential checklist to use when planning captioning for a whole-setting/class approach or an individual deaf student*. You may like to make a copy and adapt it for your setting. Tick all options that apply and record any agreed actions.

*If the school-based provision is specific for one deaf child/young person, there should be discussions with parents/carers and students to support understanding and explore options available.

1. Purpose and scope

- ☐ Whole-setting/class inclusive education approach
- ☐ Arrangement specific to the needs of a deaf student
- ☐ Agreed purpose and intended outcomes recorded

2. Student and group profile

- ☐ Group with one deaf student
- ☐ Group with more than one deaf student and/or deaf staff member
- ☐ Other accessibility needs identified
- ☐ Individual student preferences have been discussed and recorded

3. Hearing and assistive technology

- ☐ Captioning is compatible with any microphone, assistive listening technology, or soundfield system in use
- ☐ Connectivity and audio routing have been tested in advance of use with student
- ☐ Deaf student – prefers not to use hearing aid technology
- ☐ Deaf student – prefers to access soundfield system only
- ☐ Hearing aid(s)
- ☐ Cochlear implant(s)
- ☐ Assistive listening technology
- ☐ Assistive listening technology and other assistive technology

4. Environment

- ☐ Individual has prior practise with the captioning tool to identify how their speech, pace, and clarity are captured on the live captions
- ☐ Internet connection suitable for signal demand
- ☐ Room acoustics assessed
- ☐ Acoustic modifications considered for building type considered:
 - ☐ older building ☐ newer building
- ☐ Background noise and reverberation minimised
- ☐ Individual delivering speech positioned close to the microphone

5. Captioning tool

- ☐ Pre-purchased whole-setting software
- ☐ Free-to-access standalone software
- ☐ Paid captioning product or service
- ☐ Platform meets the student's access needs
- ☐ Automatic or human-generated captioning selected
- ☐ Staff know how to start, monitor, pause, and stop live captions
- ☐ Staff know how to activate captions for pre-recorded media if no subtitles available on the media
- ☐ A backup option is available

6. Caption display

- ☐ Caption ribbon displayed on the main screen
- ☐ Separate display positioned adjacent to the main screen
- ☐ Portable device provided for single-user access
- ☐ Portable devices provided for multiple single-user access
- ☐ Captions do not obscure important visual information
- ☐ Text size, contrast, and viewing distance are suitable
- ☐ Number of lines that can be visible
- ☐ Student can follow captions and the speaker, lip speaker, interpreter or presentation comfortably

7. Personalised accessibility

- ☐ Font size and style can be adjusted
- ☐ Text and background colours can be adjusted
- ☐ Different presenters can be identified clearly
- ☐ Presenter labels or colour coding are available where appropriate
- ☐ Important non-speech audio is identified where relevant
- ☐ Student preferences have been tested in the intended environment

8. Recording and audio capture

- ☐ Live captioning with no recording or retained transcript
- ☐ Live captioning with a recording or retained transcript
- ☐ Adult-only learning environment
- ☐ Setting includes children or young people under 18
- ☐ Audio capture limited to adults
- ☐ Audio capture includes adults and young people
- ☐ Storage location, access permissions, and retention period agreed
- ☐ Data protection, safeguarding, and organisational requirements checked

9. Consent and communication

- ☐ Consent requirements confirmed before use
- ☐ In school environments, parental consent confirmed before use and all safeguarding and data protection processes followed
- ☐ In adult learning environments – students, staff, and visitors informed as appropriate
- ☐ Participants understand whether audio, captions, or transcripts will be retained
- ☐ Arrangements are in place for anyone who does not consent to recording
- ☐ A clear contact is identified for questions or concerns

10. Caption accuracy and quality

- ☐ Accuracy tested with different accents and pronunciation patterns
- ☐ Speech production differences considered
- ☐ Changes between English and other languages considered
- ☐ Accuracy tested with names and vocabulary borrowed from non-English language are recognised accurately
- ☐ Accuracy tested with different languages
- ☐ Accuracy tested with languages switches in same modern foreign language lesson
- ☐ Complex, subject-specific terminology and acronyms has been added to a glossary where possible
- ☐ Errors can be corrected during or after the session
- ☐ The student knows how to report accuracy or access difficulties
- ☐ Caption quality will be reviewed regularly with the student

Action required	Person responsible	Target date	Review date/outcome

Conclusion

Live captions can be a valuable part of accessible education, but they are not a standalone solution. Effective use depends on student choice, caption quality, the teaching context and regular review of whether the approach is meeting individual needs. Education providers may find it helpful to start with small-scale trials, gather evidence and feedback, and involve deaf students, specialist staff, and other relevant professionals from the outset.

The recommendations at the start of this guide set out practical actions to support implementation, alongside the checklist and resources provided in this guide. The authors welcome feedback from the community and invite contributions for future updates to the guide. Please send these to BATOD at exec@batod.org.uk

Editorial group

This first edition has been developed by a multidisciplinary editorial group representing expertise in deaf education, assistive technology, AI, regulation and compliance, and accessible inclusive practice.

- Conor Mervyn, QToD, Education Authority Northern Ireland, and BATOD/Jisc Captioning in Education Working Group co-chair
- Kellie Mote, Programme Lead (accessibility), Jisc, and BATOD/Jisc Live Captioning in Education Working Group co-chair
- Helen Nicholson-Benn, Subject Specialist (assistive technology), Jisc
- John X Kelly, Subject Specialist (regulation and compliance), Jisc
- Brian Shannan, Educational Audiologist, Scottish Sensory Centre
- Jamie Auld Smith, Learning Technology Advisor, University of Edinburgh
- Rachel O'Neill, Senior Lecturer in Deaf Education, University of Edinburgh
- Stuart D Whyte, Principal Rehabilitationist (Educational Audiologist), University of Southampton Auditory Implant Service
- Teresa Quail, QToD, Educational Audiologist, National Executive Officer (BATOD)

Contributors

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- Anne Bailey – Chair of British Association of Educational Audiology (BAEA) and co-chair of Assistive Listening Technology Working Group (ALTWG)
- Anne Marie Kerrigan – QToD/Educational Audiologist, Education Authority Northern Ireland
- Learning Spaces Technology team, University of Edinburgh
- Michelle Lane – Senior Advisor - Early Years and Education, National Deaf Children's Society (NDCS)
- Nicola Wyatt – Co-founder, SoundWaves Foundation
- Sheila Squire, QToD, SenCom – Athrawes Gymwysedig i'r Blant a Phobl Ifanc b/Byddar, SenCom, Torfaen County Borough Council/Cyngor Bwrdeistref Sirol Torfaen
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- Susie Marques – QToD/BATOD

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