Technology Advisory Group

Using technology with learners with disabilities in the workplace

The Organisation

National Star is an independent specialist college providing full and part time, residential and day courses at the main site near Cheltenham and day courses across the UK, working in partnership with general FE colleges, schools and employers. We also provide long term residential living opportunities and support alongside external services in the use of assistive technologies.

The Challenge

We had observed two major issues with work environments:

- Some learners found it difficult to remember instructions and steps in a process, leading to panic or feeling they were not able to complete tasks, and frustration for others working with them at having to repeat themselves regularly.

- Some learners had difficulty reading complex instructions or messages and writing things down for themselves, lowering self-esteem because they had to ask for help and get someone else to do the writing, for example taking orders in a café.

The solution

We had previously used prompt cards for remembering steps in a process. We wanted to transfer the prompts onto a tablet or phone, and enable learners to update or make resources themselves. We tested several options with learners, and decided to use a straightforward basic photo collage app that could also create a video montage, for example [Frame-Magic for iOS](#) or [Photo Grid for Android](#).

Learners took their own images/videos, or directed a work colleague, created their own collage, and could add a custom shortcut to their home screen with a visual reminder. Feedback from learners and employers made us consider issues about using a phone in the workplace. For one learner the employer agreed to fund a basic Android device that was then mounted on the equipment. Once in place, other employees asked if it could hold the instruction manual and display health and safety information, so everyone benefitted.

For other learners it was about task preparation and thinking about when they could reasonably check the device. A learner preparing tables in a restaurant just put a tablet on the table and worked to the plan. When the layout changed they could take an image of the new layout and delete the old one. It also worked for different event layouts such as weddings or corporate functions.

For reading complex instructions an obvious solution was text to speech, which meant using an earpiece or speakers. This worked well for learners based in offices but not for those in catering or customer service environments. Where electronic instructions were available, we found dictionaries that could natively interact with other apps such as WordWeb. The best ones allowed learners to add their own comments.

Learners who had difficulty writing things down required a more individualised approach.

- For one learner working in a café, a specialist till system was introduced that included images of the menu on a tablet, which the learner tapped for each order. It could then be displayed for preparation, and was automatically transferred to the till. The employer funded this system to reduce bill processing times.

- Learners working in an office used speech recognition systems such as Dragon Dictate or the speech recognition built into Windows. These could be distracting for other staff, but were manageable if the space was reorganised.

A learner working with our estates team had to complete short maintenance test reports. The team worked with us to produce a set of statements which the learner could select as required for their report. It included a prompt image and video link. As testing is done to a set standard, this improved consistency; the estates team is now working on using this for all reports. It was built on Filemaker Pro, a database design tool, and made available through a web browser, so is available on any device. It also has an app for offline use, so can operate where there is no internet connection available.

The outcome

Learners felt more empowered by being involved in the solution, more confident that they could complete tasks independently, and less worried when they did have to ask for help. Interactions with colleagues and customers improved as learners were able to do the tasks they had been assigned. Staff and customers were interested in the technology and learners enjoyed showing off how they used it. Learners didn't stand out using a phone or tablet in the way that prompt cards did.

A number of staff started using the dictionary apps themselves and said how beneficial they found them. Employers valued having specialist advice available; once they had worked with learners with a disability, seen how they could complete tasks independently and realised how easy it could be to make reasonable adjustments, they would all consider having further placements or offering employment.

The impact

We asked what difference the technology had made, and learners said:

It's great using text to speech, I can type letters and answer enquiry emails myself now. Using it in a real environment was very important rather than just practicing back at college

Learning how to create my own collages has made me look at what other apps there are that my phone can help me with. I now use a predictive text to help me write messages.

An employer said:

It's made a big difference to all our staff seeing how learners used technology. Not only did the learners use it, but our staff caught on and wanted to use a lot of the solutions for themselves.

Suggestions for improvements included how to trigger instructions, and having a specialist advice service available.

Through working with their Job Mentors two learners have converted their placements to paid jobs and continue to use the technology on a daily basis.

Conclusion and Future plans

There has been a change in how learners are using technology over the last two years, with greater use of standard apps, adapted as required, and learners own devices.

Learners and employers wondered if pictorial and video resources could be triggered automatically when someone approached a piece of equipment. In partnership with a software development company we have been trialling iBeacons to trigger a tablet when in range. This work has been further developed to produce route-finding instructions and maps in buildings.

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