Wales Data Nation Accelerator

Open Source Soft Skills trainer for Law and Order via Artificial Intelligence powered Virtual Humans in Virtual Reality

Summary

External teachers coming into schools with restorative justice practice find it difficult to accommodate the culture as they aren't trained for it. The challenge is Schools budgets of teaching and mentorship is low so they need effective training to bring teachers up to speed.

VR (Virtual Reality) has been used to develop social training roleplays and is very effective. This project is using AI (Artificial Intelligence) to democratize the creation and improve the interaction in these social trainers by using AI generated voices and AI speech recognition to drive the training.

We have improved the social trainers by using speech recognition so that the roleplay is natural. The AI expert system lets the user know what they did wrong or right and gamifies the learning experience.

The project is open source and uses readily available systems such as Unity3D and the Meta Quest headset. It's possible for Trainers to adjust the roleplay scripts to fit their needs and the AI system will generate the voice and facial scripts to match, speeding up the creation of social trainers.

The intervention is using AI to create the ideal role-play for teaching social skills which is reputable, repeatable, not affected by amateur dramatics and is constantly available.

Benefits

The product introduces an open source based tool which can: enhance teacher induction and Continuing Professional Development (CPD); meet pupil needs; and embed innovative technology-driven restorative practice. Additionally, the co-production approach has highlighted the potential of this type of tool and the need for further investment in AI-focused research in Welsh educational practice.

Pragmatically, the research has generated a training tool which can be used in school to teach (and/or refresh/maintain existing approaches to) restorative justice using a personalized feedback format. The AI is based upon a learning role-playing exercise imbued with voice recognition, potentially overcoming the need for one on one sessions with expert trainers. The speech recognition means that learners are using the phonological loop and the AI tutor responses means that they are receiving instant feed back on the task, encouraging personal learning and contextualizing the importance of restorative practice.
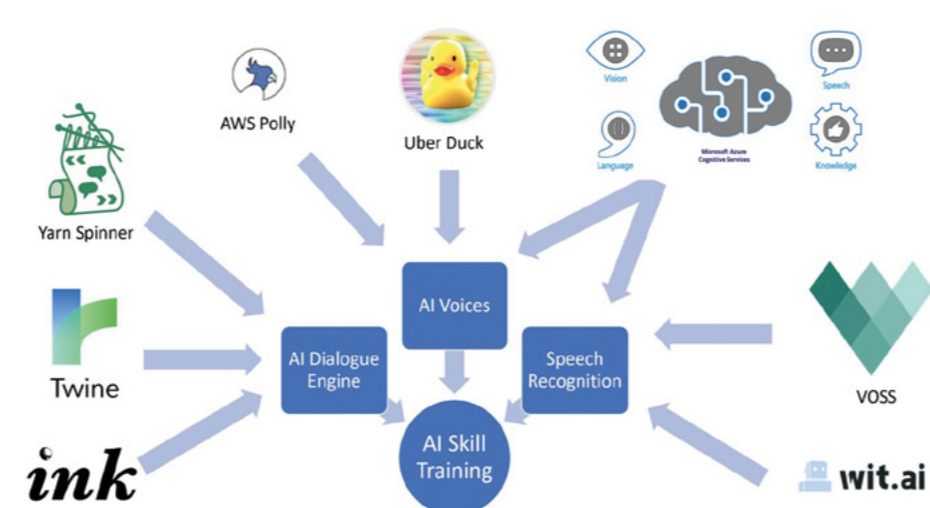
Potential benefits are:

- Mainstreaming of restorative practice training in schools
- Maintenance of existing restorative practice approaches
- Cost-effective solution to CPD
- Provision of a solution which accords with the general principles of the UNCRC, Welsh Curriculum and Rights Respecting Schools programme

Provision of a tool which reflects children's understandings of restorative practice

Further exploitation/next steps

Further potential is as follows:

- The tool reflects real-life scenarios in a safe way and could form an important part of a blended teacher training package
- Modification of the tool so that it further provides training on matters that relate to the well-being provisions of the 2022 Curriculum for Wales, e.g. processes for safeguarding
- Portability of the tool across school cluster and/or county areas so that usage of restorative approaches (which the literature indicates are highly positive) can be mainstreamed and embedded at little cost to schools, which already have tight budgets
- The tool could form part of an induction package for supply teachers so that teaching practice is not disrupted in schools and that awareness of restorative practice is raised amongst teachers operating within Wales
- Translation of the tool has been identified as a future development so that bilingual provision is offered
- The flexibility of the development process means that the tool could be updated to take account of local area needs such as language and/or pressing social needs
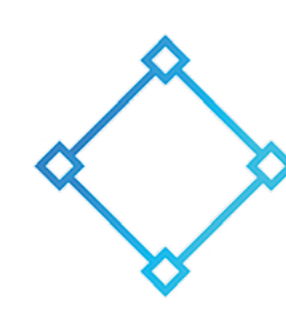
Based upon experience at Blaen y Maes School, if restorative practice is fully embedded, there are significant potential implications in terms of school attendance, attainment and exclusion rates.

Investigators: Dr Marc Holmes, Prof Anthony Charles, Alaina, Turner, Elsa Morgan-Pientka, Mar Gonzalez Franco, Seb Vowles

Project group

Microsoft, Swansea Council and Swansea University