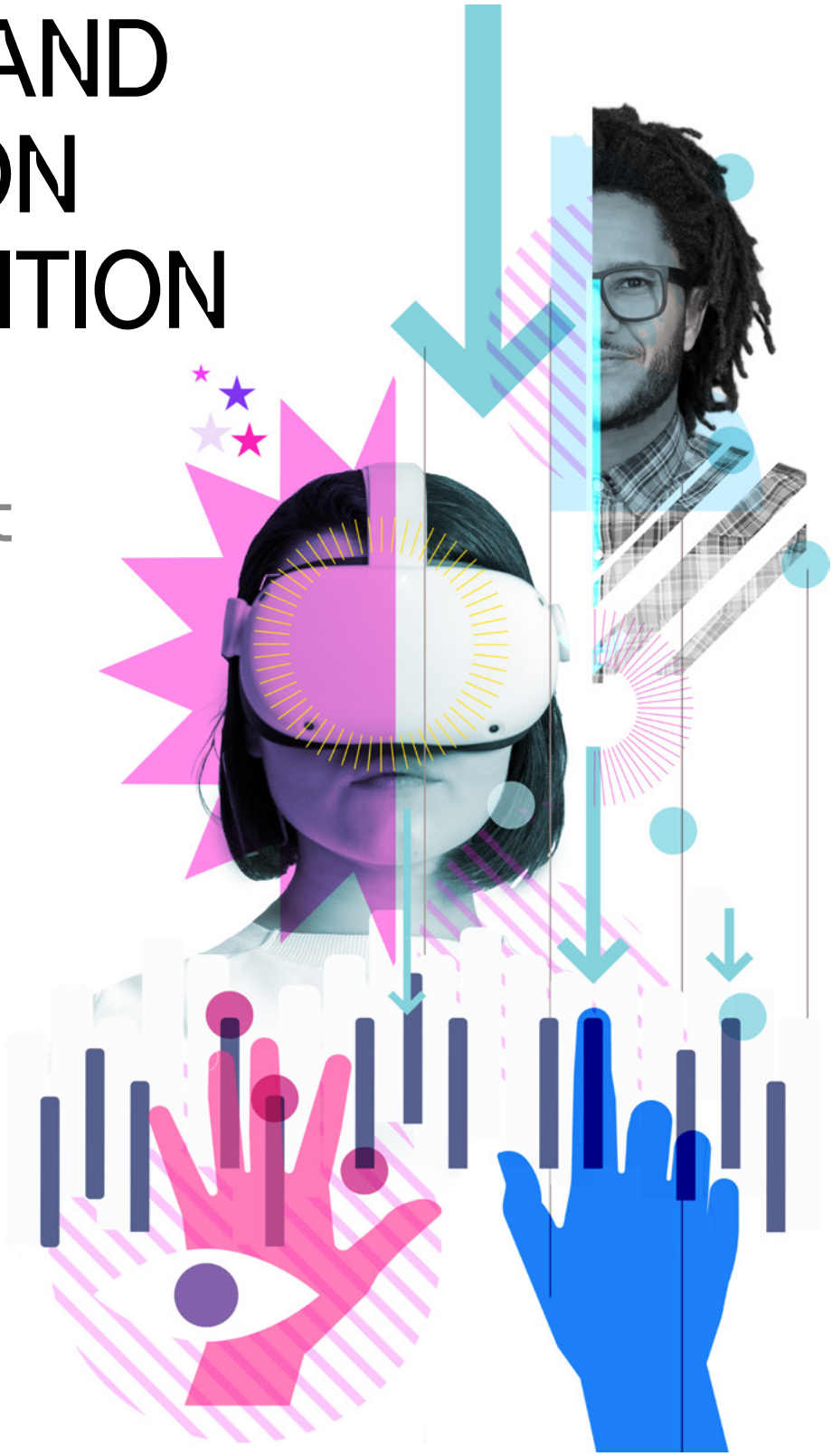
AUGMENTED REALITY AND IN-PERSON PIANO TUITION

Project Report

February 2024



OVER THE DIGITAL HORIZON

wiltshire music connect

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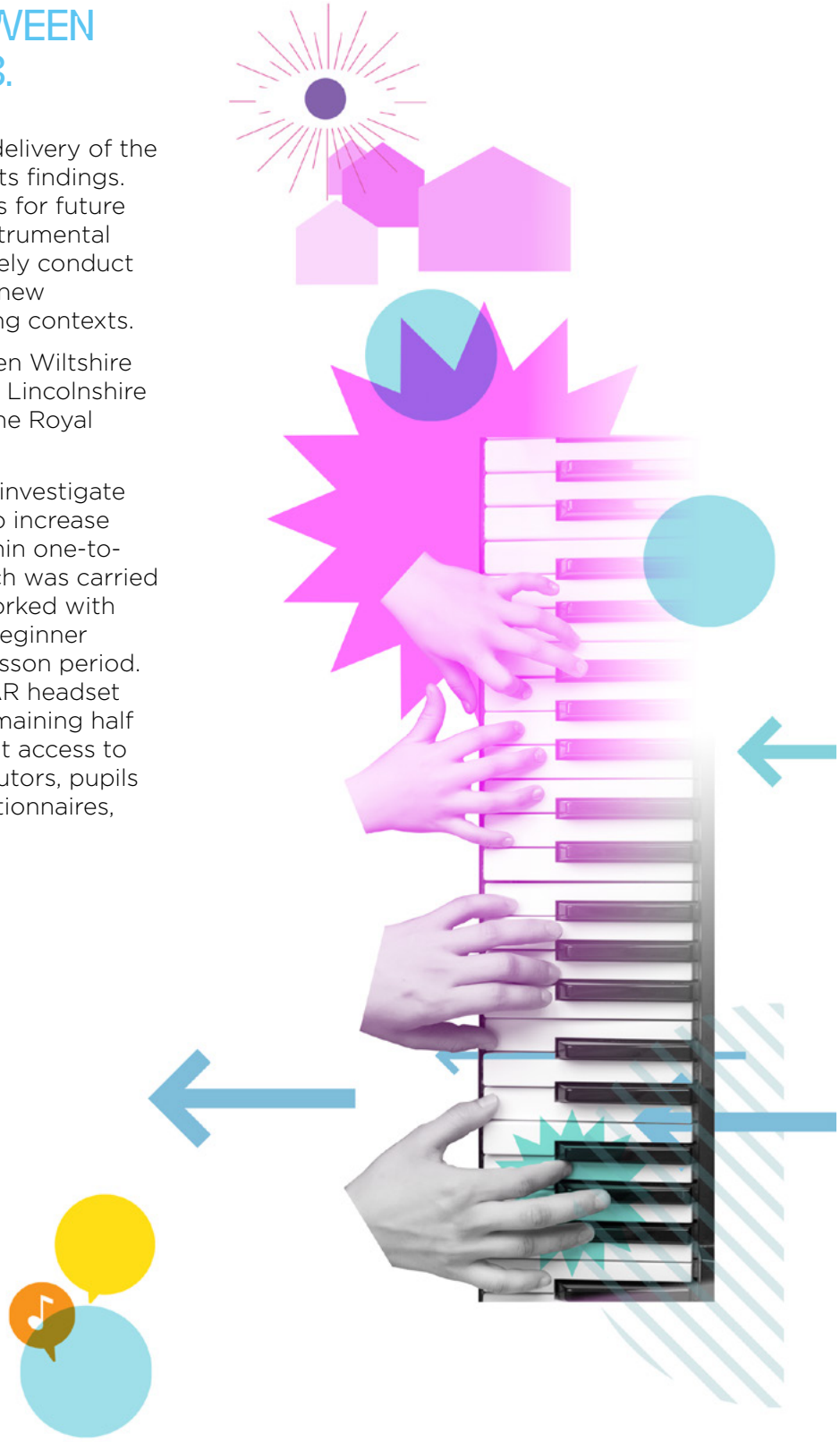
EXECUTIVE SUMMARY

INTRODUCTION
THE AUGMENTED REALITY PIANO RESEARCH PROJECT THAT TOOK PLACE BETWEEN JULY 2022 – JULY 2023.

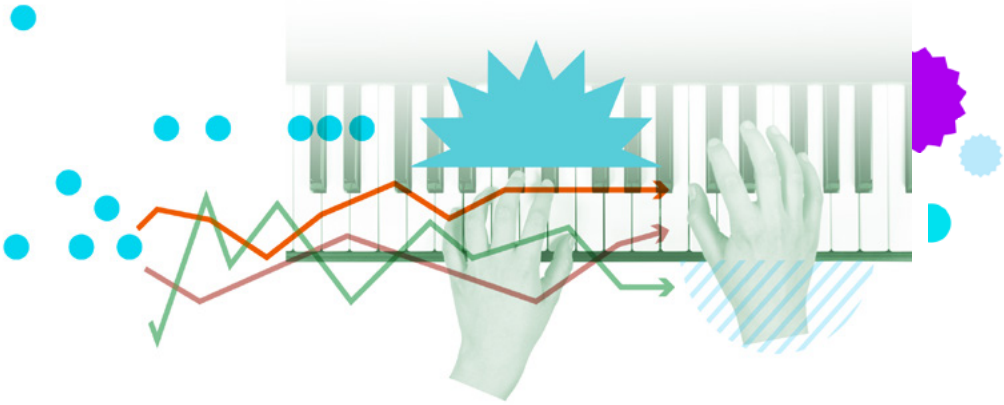
This report outlines the design and delivery of the project and describes and analyses its findings. It ends by offering recommendations for future use of augmented reality (AR) in instrumental teaching, and how hubs can effectively conduct future research in the adaptation of new technologies into instrument-teaching contexts.

The project is a collaboration between Wiltshire Music Connect, Leicestershire Music, Lincolnshire Music Hub, Norfolk Music Hub and the Royal College of Music.

The project was initiated in order to investigate the potential of augmented reality to increase pupil engagement and progress within one-to-one instrumental tuition. The research was carried out between April–July 2023 and worked with 6 experienced piano tutors and 32 beginner piano pupils aged 13–16 over a ten lesson period. Half of the pupils had access to an AR headset both at home and in lessons. The remaining half undertook traditional lessons without access to AR. Data was gathered from piano tutors, pupils and parents using a mixture of questionnaires, interviews and lesson diaries.



KEY FINDINGS



AR can enhance some areas of teaching and learning

The research shows that, for some pupils, AR increases pupil engagement, supports more rapid repertoire acquisition and increases pupil autonomy both within lesson and at home.

AR can inhibit some areas of teaching and learning

It was common for tutors to report that the AR software led to incorrect technique, especially fingering and hand position. The app allows pupils to learn pieces without using western staff notation, leading to a slower development of sight-reading skills.

AR changes the way pupil and tutor interact

Several tutors stated that the AR gave the pupil more autonomy both within lessons and at home. Some tutors felt this led to a lack of tutor control over the learning process, and reduced the ability of tutors to give instant feedback while pupils were playing.

AR does not increase overall pupil progress

The data does not indicate that pupils who had access to AR made more progress over the ten week period than those without. However, this may partly be due to the acclimatisation period to the headset for both tutors and pupils in the early stages of the research.

AR is more useful for some pupils than others

Tutors stated that some pupils showed significant engagement and progress when the technology was introduced, but that others preferred and seemed more suited to traditional lessons. They also suggest that AR may be particularly useful for pupils who have already acquired basic technique and/or those that may struggle with staff notation and/or traditional teaching methods, for example those with specific learning difficulties.

CONCLUSIONS

The research has identified key areas of challenge and potential for music hubs, technologists and individual tutors who are interested in using augmented reality as a teaching tool.

For tutors

The research has identified the areas that AR can currently support teaching: increased engagement; more rapid development of both beginner repertoire and more complex, familiar pieces; increased autonomy over the learning process for some pupils. It has also identified the limitations of the technology and areas that still require a traditional, tutor-led model.

For music hubs

The research suggests that there is significant potential for this technology, but that further development needs to take place before AR matures into a technology that will be taken up more consistently.

For the research community

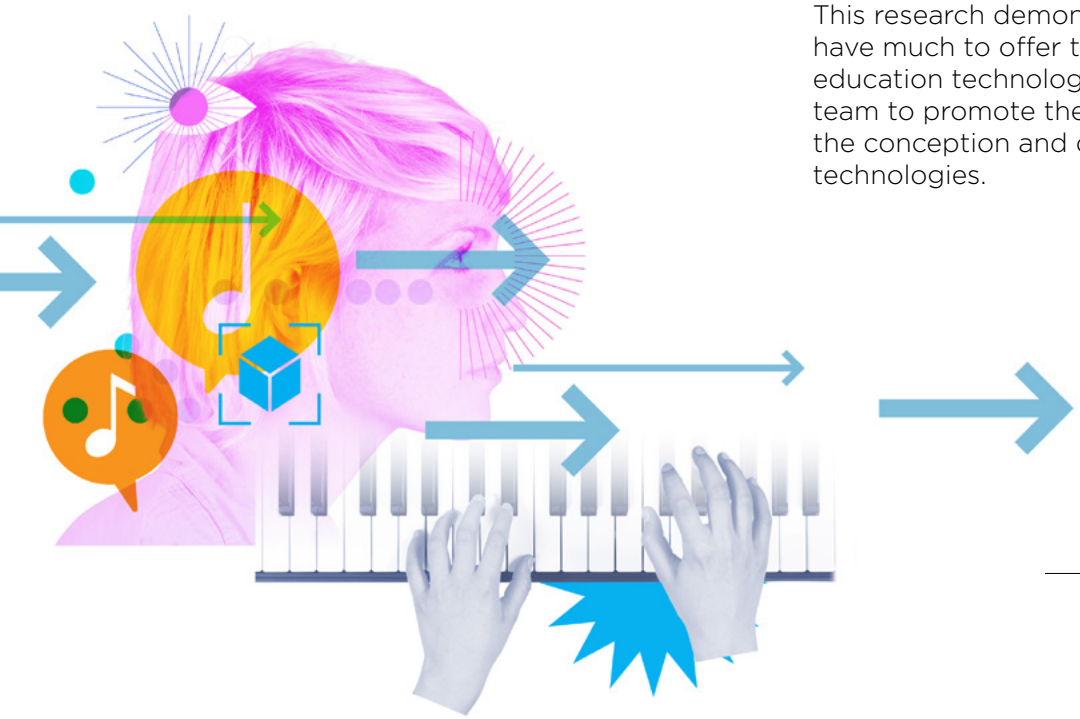
Several areas of further study have been identified, including using the technology with non-beginner pupils and those who may find traditional lessons less accessible.

For the developers of AR instrumental teaching products

The research offers an extensive list of suggestions for future features and areas of pedagogical focus.

For both the education and technology sectors

This research demonstrates that piano tutors have much to offer the developers of music education technology. It is the aim of the research team to promote the voices of educators during the conception and development of future technologies.



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