Empowering Young English Language Learners through Interactive Whiteboards and Children's Literature in a Primary School Setting -An Action-Research Study

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Abstract

This study focused on the characteristics of an action-research study concerning fostering English language reading and writing intervention programme through the use of storybooks and interactive whiteboards in a primary state school, located in northeast Portugal (mid-socio-economic status setting), where four groups of children (N= 92) participated in the academic year 2021-2022, after the National strategy for introducing foreign languages in primary schools was launched.

Despite the 'innovations' the Portuguese official curriculum suggests, teaching of English as a foreign language in Portugal seems to remain attached to merely teaching a set of isolated words throughout the years. Hence, in this paper it is argued that storybooks aided by Interactive Whiteboards' (IWBs) videos of the stories display, subtitled in English have the clear potential to address the current lack of interactive communication in EFL classes. These classroom-based storybook reading sessions were carried out over an academic year. This targeted, controlled experiment examined the effects of a print referencing environment. The sample comprised 85 primary school children attending, Year 2 and (7 years old), (n=50) and Year 3 (8 years old), (n= 35), located in a city centre, Northeast Portugal. The participant, EFL Teacher, following a semi-bilingual syllabus, and the other teachers in 14 other classrooms *did not use* a print referencing style during 120 large-group storybook reading sessions during a 30-week period. The researcher's Field Notes evidenced that the teachers in the comparison classrooms neither read storybooks at all nor used the same interactive, narrative, fluent style of reading, but used instead their own set of isolated words to teach English, without a clear focus on reading.

However, in order to effectively incorporate IWBs in EFL classes, school administrators should consider providing constant technical assistance for teachers in the event of difficulties, as well as teaching them on how to use new software that are a part of dealing with IWBs.

Keywords: children, english language teaching, young learners, interactive whiteboards (IWB), digital storytelling

1. Introduction

In the last few years, interactive whiteboards (IWBs) have been introduced in some Portuguese state schools as part of a pilot project run by the Ministry of Education, in the academic years 2016/2017, aiming at counteracting the adverse effects of poverty and de-motivation, such as quitting school rates whereas enhancing learning quality (Cruz & Duran, 2010; Sakr & Scollan, 2019). Interactive whiteboards (IWBs) are amongst the most widely used technology in education around the world. Technology is playing a crucial role in our lives, and it is becoming increasingly important for future generations to be digitally savvy. The 21st century students are digital natives in terms of technology and they are able to manipulate many screens at the same time (Stroka & Koni, 2022).

Mohami, AL-Katheri et all (2024) Badawy, Otero and Guerrero (2013, 2017) and Moss et al. (2007), argue that the use of technology in education has led teachers to choose and adopt new pedagogical approaches, strategies, tools, materials, and equipment to integrate them in a way that fulfils the needs of their pupils as 'digital beings'.

The Use of IWB in Language Classrooms

Since 1991 when Smart Tech Inc. manufactured the first interactive whiteboard, many empirical studies have been conducted at different milieus with different participants and for various purposes revealing mixed-outcomes as to the usefulness of IWB. Within pedagogy, an IWB can be employed - as a tool to enhance teaching and as a tool to support learning (Higgins, Wall, & Smith, 2010).

Jennifer Lisi (2010) followed a quantitative and qualitative research on the efficiency of the IWB in teaching the French language. She surveyed the attitudes and perceptions of teachers of FSL (French as a Second Language) towards the IWB. In her research analysis, she arrived at the conclusion that teachers appreciated the IWB mode of enriching FSL instruction as well as learning. She also acknowledged the necessary training that teachers needed to undergo in an attempt to benefit from its optimal potential. On the other hand, teachers had mixed attitudes towards - the ambition for technology use in the FSL classroom. IWB is used in the language classroom to enhance interactivity where interaction acts as a focal point in classroom, to influence students' motivation, attention, engagement and to attend to

their multiple intelligences (Albaaly, 2010).

According to the available literature, it is our viewpoint that technology has proved its efficiency in teaching English as a Foreign Language (EFL). Various technological tools such as blogs, webquests, wikis, IWBs, PPTs, and others have been highly instrumental in facilitating the teaching/learning process of the English language. In fact, integrating technology in pedagogical practices enables EFL students not only to practice the English language within the confined walls of the classroom, but to transcend them and use it outside the classroom using their personal PCs, mobiles, ipads, and others either to 'surf the internet' for various educational websites, blogs, videos, and wikis; to download instructional applications that provide heaps of activities and exercises on the different skills of the English language; or to refer to PowerPoint presentations for various purposes such as getting organized information about language topics.

However and similarly to the Portuguese context, Moss and his team (2007), in their intervention in London's secondary schools, identified some early difficulties experienced in the installation of IWBs and the supply of training associated with the short timeframe in which funding became available have not substantially impacted on the uptake of IWBs.

In Portugal, the long-term goals of the EFL classes are to use the target language appropriately to handle real world information in a wide range of interactional transactions. This holistic approach has led to new insights into how interpersonal interactions and the IWB affordances, interactivity and multimodality, intertwine and affect classroom interaction. This issue arises due to the fact that a new generation inhabits the present society, the so called "Generation Z". These pupils were born in a moment when technology plays a key role in their lives and is a part of everything: "(…) communication with other individuals is made mainly resorting to Internet (Almeida, Delicado, Alves & Carvalho, 2014; Torres, 2017).

This generation expresses a preference by instant learning through the use of technology since its interaction with the world is made in a very different way from previous generations.

Based on this educational scenario, the present study has as main aims to answer the following research questions:

1. In what way can *tablets* and *whiteboards* be used in the teaching and learning process in the EFL classroom?
2. To what extent is using the *IWB* central in encouraging digital storytelling, fostering classroom interaction and real communication in EFL classes?

2. Literature Review

2.1 Information and Communication Technology and Education

Information and Communication Technology (ICT) has gone through significant innovations and transformed our society, namely the teaching and learning process (Grabe, 2007). As a part of this, schools and other educational institutions which are supposed to prepare students to live in "a Knowledge society" need to consider ICT integration in their curriculum (Ghavifekr, Afshari & Amla Salleh, 2014). Together with preparing students for the current digital era, teachers are seen as the key players in using ICT in their daily classrooms. This is due to the capability of ICT in providing dynamic and proactive teaching-learning environment (Arnseth & Hatlevik, 2012), as in the current digital world, it is no longer possible to understand the teaching and learning process without resorting to ICT, thus fostering lively oral interaction and making the foreign language learning process more noteworthy. There is no doubt that technology in this contemporary society is used more and more widely, especially for the purpose of teaching and learning. This is because modern technology offers many tools, such as PCs, Interactive Whiteboards, Tablets, that can be used in classrooms to improve teaching and learning quality (Bruniges, 2003).

In addition, ICT has the potential to prepare students for life in the 21st century. Through learning ICT skills, students are ready to face future challenges based on proper understanding (Grimus, 2000; Yuomeyse, 2021). Bransford, Brown, and Cocking (2000) believe that ICT use can help students to develop the competencies needed for the current globalization. This is because ICT can help students to develop their skills, boost up their motivation and widen their knowledge and information (Grabe & Grabe, 2007).

2.2 The Case of Portugal

In line with globalization and the information highway, the Portuguese education system is planned to educate students as the future workforce who are technology- savvy, innovative and conversant in technical know-how (Viana et al., 2015). This is to enable the nation to be creative and competitive for the current globalization. Hence, the need for effective ICT-based curriculum is one of the main elements in strategic planning for ICT integration in the Portuguese education system. As a matter of fact, in the academic year 2008/09 the Portuguese Ministry of Education launched the introduction of the "Magalhães" computer in the 1st cycle of basic education, under the *e.escolinha* programme, within the framework of the Technological Education Plan, defined by the XVII Constitutional Government. In their study about the use of the "Magalhães" Computer, Viana et al., 2015; 2018 reached the conclusion that "the computer is valued by all social actors (families, teachers and students). There are signs of positive school effects, but also social effects in the long term, which will, however, have to be confirmed in the future".

Therefore integrating technology in education is a complex task due to its dynamic nature. Hence planning for ICT integration in education is considered as a key element for improvement and development. A more recent trend in some innovative private schools is the use of tablets, as there is the general perception about the role of technological devices in educational contexts.

Although it is currently taken for granted that technologies are among the primary tools to be considered by teachers when designing

instruction, limited attention is given to best practices or lessons learned from previous initiatives. Yet, while they are providing the needed technical infrastructure, they are paying little attention to pedagogical variables and considerations. This is highly evident in the latest innovations to hit the educational scene: tablets and smart mobile devices (Tamim et al., 2015).

As argued by Esteves (2012), in Portugal there has been a drawback in the use of the "Magalhães" computer. This was due to the fact that these new technologies "were rarely used in the classroom context. In turn this was because teachers lacked continuous professional development at the ICT level. As a consequence, despite the desire expressed by the pupils to use ICT, it was found that the CPD in ICT was clearly insufficient" (Hammond, 2015). In addition, in her case study, Machado (2014) found that 97% of the students said they only used Magalhães in extracurricular activities and in Information and Communication Technologies (ICT) lessons. Despite the initial enthusiasm of the teachers, unfortunately Magalhães Computer seems to have had no significant use in the classroom as a learning context. Furthermore, when students were asked about the frequency of the computer use in the classroom, 42% answered "never", 15% stated "less than once a week" and 30% "once a week". The options "several times a week" and "every day" options only obtained 1% and 2% respectively, which leads us to the hypothesis that ICT use is practically an exclusive of ICT as an extracurricular activity, considering that pupils have this subject at school once a week.

In Portugal, previously it was launched the the modernization programme in Portuguese schools, named The Technological Plan of Education (TPE), integrated in a coherent way, the technological infrastructure of the schools involved in it, providing content, e-services and enhancing ICT skills of both students and teachers. On July 23rd, 2007, the public presentation of the TPE took place. Its approval was published at the Council of Ministers on September 18th of the same year. The goal was to enable more innovative and interactive teaching practices (Castro e Santos, 2010). In a study regarding the Technological Educational Plan, it was highlighted that:

> "[...] teachers and all other educational agents have the right to sufficient preparation so that they can benefit from their professional activity, whether in the preparation of classes and in other school and school management activities, but also, and especially as regards the work of the students themselves, promoting the creation of learning situations and opportunities where the potential of technologies go beyond what is usually broaden the horizons on what to learn and how to learn (GEPE, 2008, p. 32).

Furthermore, the investment now seems to be targeted at equipping schools with tablets and Interactive Whiteboards, to support the language learning and teaching process.

The "Tablets in Teaching Project" was implemented at the beginning of the 2019/2020 school year. Despite being called an "experience in the use of digital school manuals and tablets", it immediately covered almost all students who were starting on Key Stage 2, with the prospect of extending it until the end of Key Stage 3. The main advantage found was the reduction in the weight of backpacks. By avoiding the harm caused by students carrying excessively loaded backpacks, other postural problems arose, in physical and even mental health. The main difficulties experienced by teachers and guardians were: compromising very important aspects of reading, such as the vision of the book and the perception of its structure/organization; page layout and graphic options; control over the use of tablets; monitoring the study and preparation for assessment moments, added to too much daily time spent in front of small screens (Morais, 2021; accessed in 11/02/24). However, in our own view IWBs overcome the advantages of tablets, as they are easier to access and control for everyone in the classroom.

Therefore, the present study sits at the interface of technology, pedagogy and education, thus seeking to understand the potential positive effects of digital storytelling, through the use of children's literature, in young learners' (Key Stage 1; years 2 and 3 of primary school) reading and writing.

2.2.1 IWB and Motivation

Teachers have been using computers for their teaching purposes for some time now. Since the average age of primary school teachers is 42.5 years old (Březinová, 2009; Vicente e Melão, 2011) it means that most teachers started using computers later in their teaching careers and generally require training in order to become at least equal in ability to their students.

The participant teachers in the previous study (Hammond, 2015) provided feedback on using IWBs directly to the IWBs producers so here are some of their ideas:

- it encourages active student participation in a learning activity

- it lets students become teachers and educate their peers with the help of a tool

they really like and seem to know a lot about

- students are engaged into learning

- It allows watching the video of the story whilst interacting with it. It may be paused many times, for children to read subtitles in English, re-played so that children focus on the details, for instance, doing oral gap-filling, thus enhancing fluency in English. There is also time to have a classroom discussion, survey or analysis before discovering the correct answers

- it offers the possibility of recording a lesson and work with the recording afterwards

- it is a great tool for visual learners because of the large screen

- it is very easy to use either with a special pen or children's own fingers

Having mentioned some positive feedback about IWB does not mean that classical pedagogical methods are wrong and we should completely forget about them. Pupils could learn about different methods such as Total Physical Response (TPR), the Grammar-Translation Method, the Direct Method, the Audio-Lingual Method, Task-based learning, communicative language learning, desuggestopedia, among others. The view adopted here is the Communicative Approach or Communicative Language Teaching, based in lively oral interaction in the English classroom, leading to academic achievement.

In addition, it is our own view that the use of children's literature (storybooks narrated fully in English) intertwined with IWB should definitely be one of them, as in the present study the gathering of both methods in the classroom provided outstanding results in terms of EFL literacy development, specifically reading and writing achievement.

3. Participants

The participants were 80-(*n=80*) Portuguese native-speaking children, 31 girls and 49 boys, attending the second grade of primary school (7 years old), immersed in a mid-socioeconomic setting, Northeast Portugal, the English Teacher as the participant Researcher, children's parents and the Head of School, so the sample was selected based on convenience sampling.

4. Materials and Methods

Materials consisted of authentic storybooks, such as *We're Going on a Bear Hunt; The Gruffallo; The Gruffalo's Child, The Very Hungry Caterpillar*, the Interactive Whiteboard to show the videos of the storybooks, play story-based games and children's notebooks. These books were chosen as they are widely used in the UK to foster native language literacy. According to the collected data from the participant children and the participating teachers (one cohort using storybooks and another cohort not using them, but just textbooks), it was observed that storybooks used alone for a digital age "generation Z" might become boring if they are not used with plenty of interaction, such as plenty of mimicry and lively oral interaction. Plus, the base idea was to expose children to as much of an English environment as fully as possible. A powerpoint about the story might not not be engaging enough to motivate such lively children in the process of learning English.

Initially pupils were de-motivated and demonstrated no interest in English language lessons. Therefore, and deriving from my own PhD studies in Pedagogy and Curriculum Development applied to Teaching English and relevant literature, the participant Teacher-Researcher has drawn an action-research plan (Figure 1) to counteract negative attitudes in the classroom and nurture the enjoyment for English language learning. She requested permission to the Head of School to implement the necessary changes and collect the data.

Figure 1. Action-research cycle (Dickens & Watkins,1999)

In terms of resources, the participant researcher owned a significant part of the used resources, the storybooks, whereas the school provided access to the Interactive Whiteboards. The Action-research plan was designed bearing in mind the compulsory school subjects, such as Social Study/Sciences and/or Mathematics, and these would be the starting point to teach that same content in English, thus creating meaningful learning, and a cross-curricular approach, inspired in Content and language integrated learning (CLIL), through English Across the Curriculum (Figure 2). As one of the topics from Social Study/Sciences students enjoy the most is Wild Animals, there was resort to the book "We're Going on a Bear Hunt" to introduce wild animals, followed by asking the children what other animals they knew and if they knew their names in English.

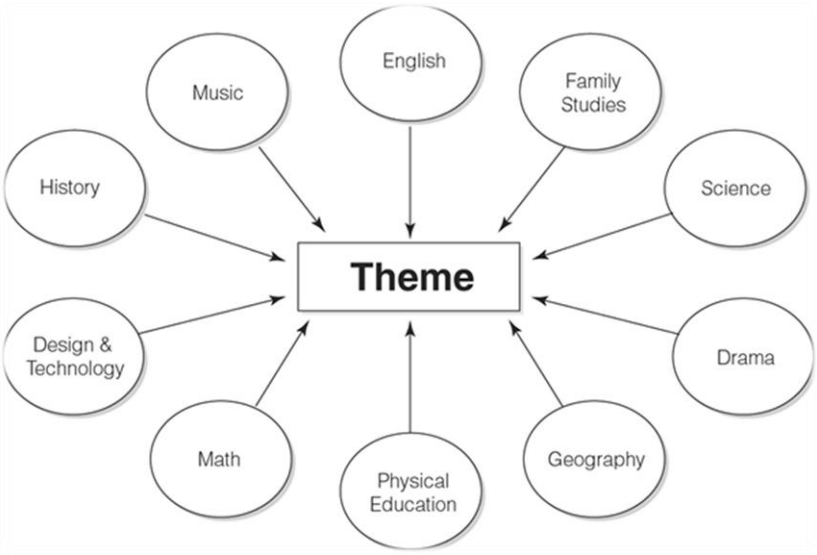

Figure 2. Content and Language and Integrated Learning: English Across the Curriculum

Although it is always possible to integrate English lessons into different curricular areas, such is not the regular procedure in the vast majority of Portuguese EFL classrooms. As such, this is exactly where 'we' hit the spot and the novelty of this study emerges.

In a second part of the lesson, the video of the story was played through the Interactive Whiteboard and the children happily joined in, by reading and singing the parts of the story (video link: https://www.youtube.com/watch?v=0gyI6ykDwds) (Figure 3). At the time of the study students did not own their own tablets, computers or mobile devices. Plus, these, on the hands of such young students, can easily get off track as they might easily distracted by 'Tik Tok', 'Instagram' and other online distractors without the teachers' permission. As previously mentioned, the introduction of the "Magalhães" computer in the classroom was a major disaster, and no other state initiatives with such aims has been launched by the Portuguese Government, not even in Higher Education where all students have their own tablets.

Figure 3. Beginning of the video

In addition to watching the video, Total Physical Response Songs were also used, by acting the scenes of the book and producing the sounds of the animals as a complement to reinforce the topics studied (Wild Animals). After the initial stage of the lesson, where the storybook was narrated fully in English, with the teacher explaining through kinesics, a second stage, where children would follow up the video of the story through the IWB, the English Teacher would pause it and request children's interaction. This was the most prolific stage of the lesson, where lively aural interaction could be witnessed. Following from this task, children were required to do a worksheet, where they needed to match the Wild Animals to their names and afterwards to write the names of the animals according to the habitat they live in, their eating habits and overall features, such as colour and number of legs (Figure 4).

In addition, children were asked to recreate the story in their notebooks, by drawing the events of the story and writing down what happened

on each page, thus enhancing their cognitive skills, as they needed to recall content to be able to carry out the task.

As the length of the English classes was only 60 minutes, pupils were required to carry out a matching and writing task (Figure 4).

5. Results and Discussion

Despite all these innovations and children's early achievements in reading and writing, some children demonstrated significant difficulties in doing the required task and extra support needed to be provided, thus reinforcing and encouraging them to pronounce aloud the names of the wild animals in the provided worksheet. One of the main difficulties was that some children were not used to stories being narrated to them fully in English and they would request the English Teacher to explain/translate into Portuguese. In the Portuguese educational system, it is common to use the native language as medium of instruction and only teach key vocabulary in the target language, English.

The present study represented a novelty in the school setting, considering that:

1. Children were not used to being fully taught in English;
2. Watching and listening to storybooks narrated in English was a highlight for the participant children;
3. Children found that watching the videos from the stories, subtitled in English was engaging and enabled them to participate fully in the English lesson, prompting lively oral interaction and fostering reading and writing skills.

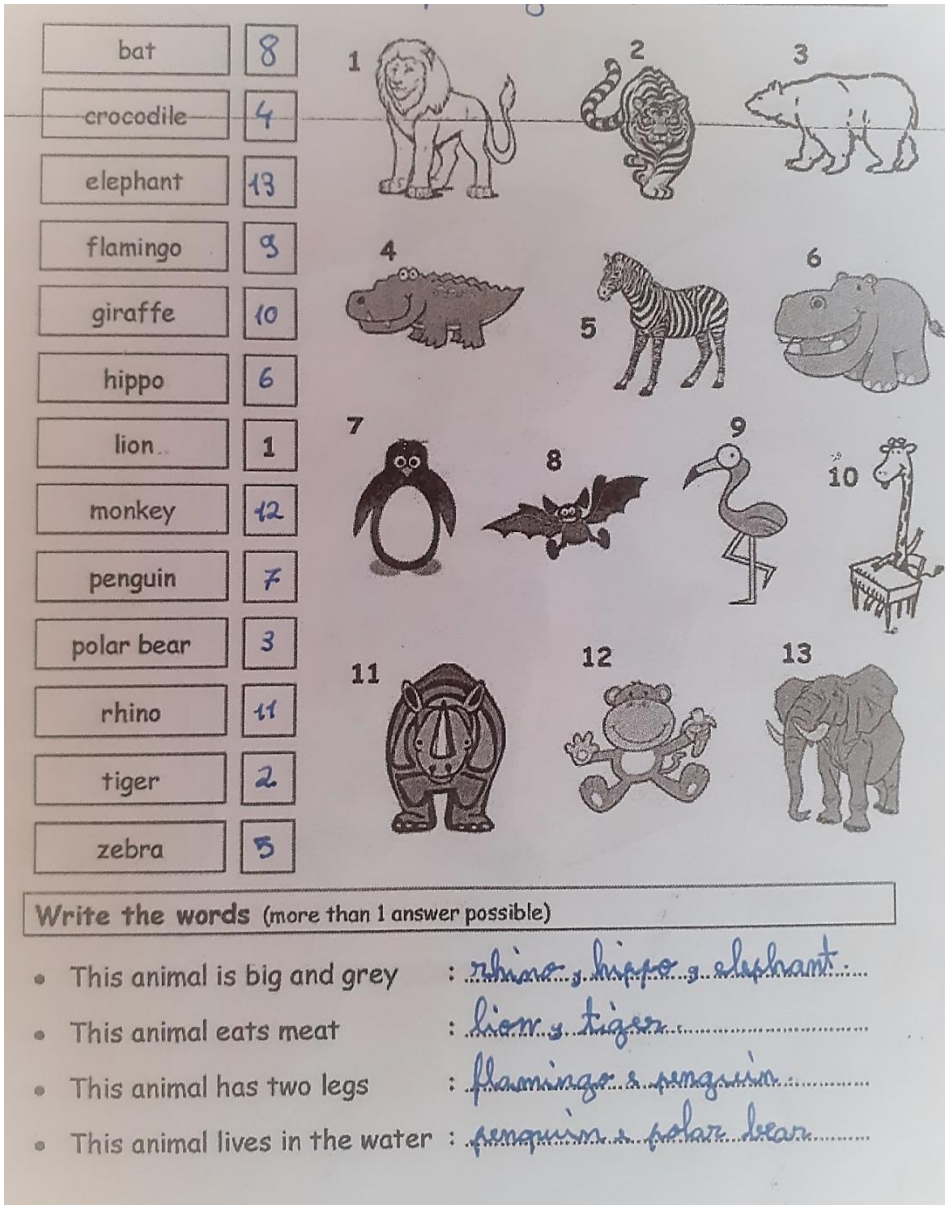

Figure 4. Match the names of the Wild Animals to their Numbers and then write the words

6. Conclusion

In this paper we sought to analyze the potential links between paper storybooks and IWBS, looking at the usage of the IWBS as a digital guide not as a full replacement of the traditional paper book, but rather as a powerful pedagogical instrument to it. Being a completely novel and unexplored technology in the school setting, with the aim of changing teaching and learning nowadays, it urged to know their full potential and challenges.

Bearing in mind previous research and the collected data, the current findings put in evidence that the IWBS in association with children's literature might well be the best resource able to catch pupils' attention and be both motivational and interaction agents. For teachers, the IWBs might be an excellent pedagogical resource in the application of innovating strategies (i.e. allowing pupils to watch videos from the narrated storybooks) was well as fostering pupils' encouragement to develop their literacy and own thinking in English.

From the collected data, it is also clear that this innovation in the classroom helped to sustain and foster the "love" for English, also helping to prevent barriers to learning English at this early stage of learning English, hence avoiding negative effects in pupils' prospective English Language Learning.

The findings of the present study lead us to consider that the use of children's literature (i.e. storybooks) intertwined with IWB are not only a key pedagogical asset in providing children with the necessary literacy skills in English (reading and writing), but also an enhancer of emotional attachment to the English Language.

As a recommendation, the ideal situation would be to create opportunities for further Teacher Training at this early stage of education, thus creating an awareness of the vital role of traditional authentic storybooks intertwined with Interactive Whiteboards.

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Authors' contributions

I was the only author responsible for study design and revising.

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Obtained.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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