Nitel Sosyal Bilimler-Qualitative Social Sciences
Yıl:2022, Cilt:4 Sayı:1
Year:2022, Vol:4 Issue:1

NSB QSS

Makale Türü/Article Type: *Araştırma/Research* **DOI**:10.47105/nsb.1103294

Atıf/Citation: Çiftçi, A. & Demirdiş, B. (2022). Primary school teachers' perception on the role of ICT in collaboration in England. *Nitel Sosyal Bilimler, 4*(1), 19-32. https://doi.org/10.47105/ nsb.1103294

Primary School Teachers' Perception on the role of ICT in Collaboration in England

[a]Abdullah Çiftçi [b]Bahaddin Demirdiş[1]

[a]*Dr., Akdeniz University, Turkey*
[b]*Dr., University College London,, United Kingdom*

Abstract

Technology is ubiquitous and taken-for-granted part of everyday life and education that has become intrinsic in daily life. In many areas, especially education, information and communication technologies (ICT) are seen as being a significant agent for change and improving pedagogical practices, as there has been positive discourse around their value. Teachers' accounts of everyday classroom use of technology are being explored to build a theoretical, pedagogical, and practical understanding of educational practice that involves technology as an intrinsic component of the classroom. As technology continues to evolve, educational praxis and pedagogy change alongside it. It is therefore important to explore what the role of technology is, as reported by practitioners in mainstream schools within an intensive and particularly challenging urban context. The current study aims to understand teachers' use of technology in their daily classroom practices to contribute to collaboration between teachers and pupils. Twelve interviews were conducted with primary school teachers in England. The participating teachers came from five different schools based in South and North London, and one school in West London. The findings of the current study showed ICT supports interaction and collaboration; thus, pupils can learn from each other with the supportive pedagogical features of ICT. However, collaboration is limited to creating posters and slides, and also there is limited practices of collaboration between pupils with and without special educational needs and disabilities (SEND), so collaboration that supports problem-solving skills and the development of metacognitive skills was reported as typically absent.

Keywords: ICT, collaboration, inclusive, education, England

[1]**Sorumlu Yazar/Corresponding Author:** Bahaddin Demirdiş, University College London, United Kingdom utnvdem@ucl.ac.uk

Gönderim Tarihi/Received:14.04.2022 **Kabul Tarihi/Accepted:**09.05.2022 **Yayımlanma Tarihi/Published:**30.06.2022

İngiltere'de İlkokul Öğretmenlerinin Bilgi İletişim Teknolojilerinin (BİT) İşbirliğindeki Rolüne İlişkin Algısı

Öz

Teknoloji, gündelik hayatın ve her yerde olduğu gibi eğitimin bir parçası olarak kabul edilmektedir. Günlük hayat adeta teknoloji ile bütünleşmiştir. Birçok alanda ve özellikle eğitimde, bilgi ve iletişim teknolojilerinin önemi hakkında olumlu bir bakış açısı olmakla birlikte, BİT, değişim adına pedagojik uygulamaların geliştirilmesi için önemli bir araç olarak görülmektedir. Bu araştırmada teknolojinin sınıftaki günlük kullanımına ilişkin öğretmen algıları, sınıfın içsel bir bileşeni olarak teknolojiyi içeren teorik, pedagojik ve pratik bir eğitim uygulaması anlayışı oluşturmak için araştırılmıştır. Mevcut çalışma, öğretmenler ve öğrenciler arasındaki iş birliğine katkıda bulunmak için öğretmenlerin günlük sınıf uygulamalarında teknoloji kullanımını anlamayı amaçlamaktadır. İngiltere'de ilkokul öğretmenleri ile 12 görüşme yapılmıştır. Katılımcı öğretmenler Güney ve Kuzey Londra'da bulunan beş farklı okulda ve Batı Londra'daki bir okulda çalışmaktadır. Araştırmanın bulguları, bilgi ve iletişim teknolojilerinin etkileşimi ve iş birliğini desteklediğini göstermiştir. Öğrencilerin bilgi ve iletişim teknolojilerinin destekleyici pedagojik özellikleri ile birbirlerinden öğrenebileceği belirlenmiştir. Diğer yandan, mevcut iş birliğinin sadece posterler ve slaytlar oluşturmakla sınırlı olduğu, ayrıca özel eğitim gereksinimleri olan ve olmayan öğrenciler arasında sınırlı sayıda iş birliği uygulamaları gerçekleştiği anlaşılmıştır. Sonuçta tipik olarak problem çözme becerilerinin ve üst bilişsel becerilerin gelişimini destekleyen bir iş birliğinin sınıflarda olmadığı keşfedilmiştir.

Anahtar Kelimeler: kapsayıcı eğitim, BİT, iş birliği, İngiltere

Introduction

Since the Salamanca Statement (1994, a UNESCO conference that led to the Salamanca Statement and Framework for Action on Special Needs Education), inclusive education has been a much-debated topic (Ainscow et al., 2019). Pupils with SEND who need extra support due to their special condition, have been included in mainstream schools to eliminate social exclusion and promote equality by celebrating diversity in the classroom (Ainscow, 2005; Magnússon, 2019).

'Inclusive education' is based on the idea of providing a supportive and adequate education for all in order to combat discrimination at every level of society, especially in education (Kauffman et al., 2018). Inclusive education is defined as an educational practice which builds upon the social theory of justice and promotes the ideal that all children, regardless of intellectual, physical, learning and emotional abilities should have equal access to learning opportunities (Loreman et al., 2006). Inclusion, however, is a controversial issue that has prompted debate around what constitutes the most supportive educational setting for pupils with SEND (Florian, 2019; Hornby, 2015). For example, debates persist about the educational benefits of inclusion for students with and without SEND, as well as the problem of equal education. For instance, students with SEND who attend inclusive settings typically develop a greater sense of self-esteem as a result of their teachers' higher expectations and their better interactions with other students (Armstrong & Tsokova, 2019). The benefits of inclusion go beyond social and emotional development. Additionally, students with SEND who attend regular education demonstrate greater academic progress (Henninger & Gupta, 2014).

On the other hand, inclusion of children with SEND into regular education does not always result in meaningful educational access (Strogilos, 2012). Schwab (2018) discussed some of the disadvantages of inclusion from the perspective of students, parents, and teachers, stating that because typically developing students frequently reject and are less welcoming in classrooms to students with SEND (Avramidis et al., 2017), students with SEND do not belong in mainstream education (Garrote et al., 2020). This finding implies that inclusive education may be detrimental to students' social development. Schools must be able to deal with challenges such as behavioural issues, learning difficulties, and developmental problems in order to increase success in learning, improve pupils' skills, enhance knowledge, support communication, and establish a positive relationship between pupils with and without SEND (Anastasiou & Kauffman, 2011).

Implementation of inclusive educational practices in mainstream schools has a deep-rooted history around the world. Furthermore, these reforms aim to provide equal access to educational opportunities for all students. The successful implementation of inclusive education depends on teachers, children, families and school administration and their successful interaction. As Mitchell (2014) argues, the teacher plays a particularly important role in the implementation of inclusive education. Furthermore, numerous studies conducted (e.g. Blömeke et al., 1998; Stronge et al., 2007) have shown that the quality of a teachers' practise

has a greater effect on a student's achievement and effectiveness of classroom teaching compared to other factors such as class size, composition and background. For example, collaborative group work and peer tutoring can also increase the effectiveness of classroom teaching. Increasing interaction between classroom members will help to build a positive atmosphere for learning, in which pupils can learn from each other. Encouraging pupils to self-regulate their learning, personalising access, and having ownership of technology can help create teaching activities that will support collaboration and, as a result, increase effectiveness (Beauchamp, 2012).

Effective teaching requires collaboration between pupils, teacher, pedagogy, classroom, subject knowledge, teaching methods, learning styles, and assessment (Muijs & Reynolds, 2017). Theories of learning and intelligence have an impact on teachers' understanding of learners and the process of teaching. If teachers employ an interactive teaching strategy, they will use questioning and discussion to allow pupils to structure their learning while actively participating in educational activities that their pedagogical understanding impacts their teaching strategies. Collaboration between teachers and pupils is important for effective teaching, and involves frequent questioning, communication, and higher-order questions and statements, as well as directing pupils to reflect on their understanding of the topic (Muijs & Reynolds, 2017).

Indeed, collaboration has become commonly associated with interactive digital activities, as collaboration can be most effectively promoted and facilitated with technology (Dafoulas & Shokri, 2016). Users of technology interact with either software or other users, which increases the opportunities for collaboration, as we are leading to an era that collaboration with machines is a reality (Luckin, 2018). Unlike machines, teachers can become tired, so teaching-wise machines are seen as more desirable. Interactive educational programs create opportunities for unlimited and flexible learning; however, there is a risk of this becoming the new normativity that creates new barriers while removing old ones (Houlden & Veletsianos, 2019; Mercer et al., 2010). On the other hand, collaboration between pupils has been found to be a significant aspect of classroom learning, as pupils need to learn how to interact with their peers and gain social skills. Full participation of all pupils can be achieved by creating dialogue and collective reflection, which can be facilitated with the interactivity that technology provides (Kennewell et al., 2008). Having an understanding of pupils' emotional and social needs can further increase the effectiveness of collaborative activities and reduce behavioural problems (Kennewell et al., 2008).

Technology is employed by teachers throughout the whole process of learning; they use it while planning learning activities, and in the classroom for presenting information and administering those learning activities. Although the introduction of devices such as iPads is recent, teachers and students have integrated them into their lives to the extent that they are seen as an expected feature of the classroom (Tay, 2016). Indeed, in UK primary schools, technologies such as IWBs and tablets are widely used (Gillen et al., 2007). Yet this pervasiveness is not evidence that the use of ICT in education is effective at improving collaboration between teachers and pupils. It demonstrates that there has been a deficiency in evidence-

based literature in recent years of providing a comprehensive picture of the use of technology in collaboration. The current study aims to understand teachers' use of technology in their daily classroom practices to contribute to collaboration between teachers and pupils. It will attempt to arrive at an in-depth understanding of the rationale behind technology-based practices and their educational value in terms of improving classroom collaboration.

Methodology

Research Design

Qualitative research is primarily concerned with meaning-making; in other words, making sense of the world, phenomena, and experiences by including individuals as meaning-makers of their own lives (Biggerstaff & Thompson, 2008). In qualitative research, the researchers' interpretation of the meanings attributed to events is an element that they consider not as a problem but as a potential strength (Bhattacharya, 2017). The aim is to create a real understanding of the field being investigated, focusing on data from the experienced individuals and their engagement with the researcher (Willig, 2017).

Qualitative techniques influence the method of acquiring and interpreting data through the researchers' own beliefs and thoughts (Bhattacharya, 2017). Furthermore, in qualitative studies, researchers embrace the idea of many realities (Willig & Rogers, 2017); this is a position that recognizes what experiences are unique to each individual, and which individuals give different meanings to their experiences. This is the 'reality' for those people involved, which is valued and investigated, and which is supposed to represent a relativistic ontology, by focusing on the subjective account of experience by individuals (Willig, 2017).

Participants

Teachers from London were invited to participate in the research via their schools' administrations. The reason for choosing London-based teachers was to avoid the need to travel outside of London, but all participants were from schools in different parts of London. Hundreds of emails were sent to schools to invite them to participate in the study, but a limited number of responses were received, and only those who had the time and were willing to participate were interviewed. The participant teachers (n=12) came from five different primary schools based in South and North London, and one school in West London. The group of participants included seven females and five male teachers and participants' ages ranged from 30 to 47 years old.

Data Collection

Interviewing is a significant component of social research, used to generate data on people's views of the phenomenon under study, and invite them to reflect on their assumptions and beliefs (Fontana & Frey, 2005). Interviews include humans and their experiences of everyday life; indeed, the modern world is an 'interview society', because people are frequently asked about their experiences (Fontana & Frey, 2005).

As stated by Fontana and Frey (2008), the interview is one of the most useful and sufficient methods for understanding the human mind and mentality. Specifically, it is considered as a powerful process for investigating the attitudes, opinions, beliefs, feelings, experiences and knowledge of humans. Furthermore, interviews support the exploration of information from any type of research (Mason, 2002). The practice of conversation is central to the acquisition of knowledge about others, as it enables people to communicate details about how they experience the world and explain the reasons why they act, feel, and think in a certain way. Through conversation, interviewing involves the interchanging of views (Brinkmann, 2014), and is used to understand what lies behind people's actions and to ask about their behaviours, opinions, and feelings (Robson & McCartan, 2016).

The interview questions in this research concern the attitudes towards collaboration to create inclusive education, how they manage children with SEND in their classes by using ICT and inclusive education practices in their schools. The interview was designed as semi-structured, open-ended, and based upon the literature. They are made in order to allow the teachers to express their perceptions, opinions, and attitudes calmly and freely (Kumar, 1999).

Procedure

The interviews lasted between approximately 45 minutes to 1 hour and 35 minutes and yielded in-depth data. Interviews that are too long can be problematic as, after a certain point, participants might lose interest, which might impact the quality of their responses. In this study, two interviews with teachers exceeded 1 hour and 30 minutes; however, there was a break in each, and both participants were willing to talk and demonstrated interest in the continuation of the interviews. In general, interviews lasted approximately one hour.

Data Analysis

In order to analyse the interviews, a thematic analysis was conducted. Thematic analysis is used for reporting themes, identifying and analysing them from the data (Braun & Clarke, 2006), and providing details about the interviewees, such as their experiences in life (Robson & McCartan, 2016). In addition, thematic analysis was deemed an especially suitable technique for the current research, as it had the benefit of permitting analytical theoretical flexibility based on both the data and literature-based theory.

Researchers used thematic analysis to help organise the enormous quantity of qualitative material included in the interview transcriptions. The initial part included becoming familiar with the interview data. Taking notes on primary ideas about the data throughout the transcribing process helped in making sense of the data and identifying major problems and themes. A further examination and re-examination of the interviews was conducted to generate a full picture of its content (Froggatt, 2001). Thus, the data were transcribed and then read and re-read. In the second step, with the study objectives in mind, researchers began thematic coding, which grouped all of the data from each teacher's interview into broad categories (nodes). Then researchers subdivided the major categories. The third step included the discovery of topics.

Researchers organised codes into probable topics and acquired all data pertinent to each potential subject throughout this procedure. This procedure included systematic coding of any data characteristics of relevance throughout the whole data collection.

Researchers were able to highlight relevant remarks and arrange them in the appropriate sub-categories using NVivo. According to Kvale and Brinkmann (2009), this organisation technique facilitated the processing of the data while also facilitating the detection and comparison of distinct patterns. The fourth step was evaluating themes, in which researchers compared each theme to the coded extracts and the whole data set to create a thematic map of the analysis in this section. The fifth step was identifying and naming the themes, during which time was spent refining the intricacies of each subject to provide precise definitions and names. Finally, the sixth step included writing the report, which involved selecting interesting excerpts related to the study topics and conducting a literature evaluation.

Ethical issues

The research included only adult participants, who gave their informed consent to participate. The University College London Ethics Committee approved the current research after determining that the Participant Information Sheet, Questionnaire Introduction, and Interview Consent Form (ref no: Z6364106/2017/11/99). Participants were informed about how the data would be stored, confidentially and on encrypted computers. They understood that they would not be misled for any reason during interviews, and that the conversation would be a natural conversation between two equal parties.

Findings

The very basic idea of collaboration is to teach very basic social skills such as turn taking and negotiation in groups. It is taught by creating interaction among students so that they learn how to deal with each other and participate in communication effectively. As Teacher4 that stated school is for socialising and she said that ‘we’ve got to learn to work together. And it’s one of the big things about coming to school rather than being home-schooled.’ They need to learn how to negotiate, turn-take because ‘all of that is, those social skills are vital for problem solving’ (Teacher9).

Collaboration is used to create interaction between pupils for improving social skills development so that pupils learn from each other in their social context. Teacher1 stated that pupils should be given the opportunity for collaboration and the teachers should not avoid using collaborative practices due to the possibility of risks. She stated that this attitude gives pupils to learn from each other and they warn each other when someone misbehaves (Teacher8). In some cases, the idea of collaboration can be very basic as one participant stated that they use talk partner activities to create discussion among students, allow them to improve their ideas and to elaborate on their ideas and meaning with talk partners. Discussion with peers helps to interact with peers meaningfully and exchange ideas in relation to a social situation (Teacher7).

> We have collaboration in the classroom through talk partners. So, a teacher will deliver some kind of learning, she will then stop the session and say discuss this with your talk partner (...) because you need to share your ideas before you can write them down. (Teacher9)

For collaborative activities, creating groups of mixed abilities and pupils of different skills have a positive impact on the group achievement. Changing roles between pupils with different skills is also found vital for effective collaborative activities to give chances to every pupil for experimenting different roles in the group. Having the same role each time would decrease the effectiveness of collaboration as the main idea of group work is making group members learn from each other (Teacher8). The group participants have impact on the collaborative practices, so one of the teacher stated that especially during ICT-based activities tech-savvy group members do the main part of the work and collaboration cannot be implemented effectively.

> You pair them up and what find is you have 2-3 kids in the classroom who are super competent and they can do everything independently. And then you have other kids that just will sit back and let somebody else take charge. (Teacher1)

Collaboration and ICT

ICT-based collaborative activities are being praised by educators for effectiveness. Teacher2 stated that pupils are more willing to collaborate if it is computer lesson or project-based learning. On digital devices, tasks are done more quickly so it enhances the collaboration and participation, but it is not necessarily only the result of computer-mediated teaching it can be enhanced with a book as well (Teacher2). Applications provide features of image and text manipulation and design for collaborative activities.

> I know there're apps out there where you can have children working together as a team to create maybe a newspaper article or a project. (...) They all have to decide work together and how it works, what it looks like. Writing articles to put in there, making pictures to put in there, which pictures are they gonna put in there. (Teacher10)

Pupils have difficulties in collaborating, especially if they want to use the devices themselves and they do not want to share with their peers (Teacher4). Structure and available equipment are not designed specifically for collaborative activities so that teachers can use these devices for collaboration. The devices are used in the school anyway, but the pedagogical underpinnings of collaboration are not considered so that a collaborative environment can be created within the classroom.

> And that's exactly what happens when you attempt to do collaborative learning on iPad. They get better, but it takes a long time to teach them and you have to be utterly determined that they're going to learn to do this. (...) Teachers also need to learn how to do it themselves. (Teacher4)

Collaboration and SEND

As communication skills and turn-taking during conversation are improved through collaboration, pupils with SEND are also supported through similar strategies. There is 'a program called 'talk about' which is very much about working together' to understand themselves and their emotions. They gradually learn more and more about how to communicate with others, how to take turns, how to manage their emotions when they don't get what they want (Teacher12).

According to one participant pupils can have attitudes of avoiding working with pupils with SEND and behavioural problems. Pupils with behavioural problems get told off and their peers do not want to work with them because they don't want to get told off. However, Teacher7 stated that pupils see pupils with special needs as their friend and they do not avoid working with them. Teacher1, on the other hand, stated that mixed ability groups increase the outcome of collaboration but also there can be some behavioural problems from lower ability pupils.

> They still see that child with special needs as their friend and they want to help them. (...) So, there is not really any issue with behaviour apart from chatting. (Teacher7)

Teacher3 stated that she doesn't like group practices because 'for the children who aren't as good and aren't as confident, they can hide in a group.' Same teacher found it difficult to monitor every child in group practices and individual work is more effective because 'struggling pupils can get away with not-being challenged as much.' She thinks in principal collaboration does not work because some children do not learn enough by avoiding participating in.

> The children I've taught with any behavioural issues, they get worse because they can't keep up with the learning as much and they're behind and that's when they shout out, they don't want to do the work. (Teacher3)

Collaborative Activities

ICT is commonly used to create collaborative activities, participants in general stated that they use activities of creating poster or presentation as a group activity and pupils are willing to share their end work to the rest of the class, even in some cases they presented it to the whole school in an open event. Pupils make presentations or writing a speech together and they show the end product to the class, so 'it is for an audience and there is a reason why they're doing that' (Teacher3)

> I put a competition on who can create the best poster. Other ways, you can use ICT with visualiser again, children can come out underneath and can explain their story or show what they've done. (Teacher2)

Teacher4 use iPad for collaborative Microsoft *PowerPoint* design but for effective collaboration short sharp timing is necessary. Keeping children busy with sharp timing and specific target help reduce the behavioural problems. Teacher7 also stated that creating slides is the common collaborative work, pupils research about a topic and then create their slides for the topic as a group work. In addition to presentations, pupils 'love making trailers on iMovie', and 'that is a really good way for expressing themselves' (Teacher5).

> If you give them like you have 40 minutes to create this PowerPoint, you get nothing from them. You say 3 minutes to bring a plan to me what you're going to do. On this plan who is doing what A you put yourself down as doing absolutely everything, is that going to work. (Teacher4)

Pupils learn by watching how their peers do the activity and teachers use collaboration to make them learn from each other. Due to lack of devices, they work on the same devices, so when using iPad teachers need to design collaborative work (Teacher5). Partner talk is the common collaborative activity to discuss and share ideas or solve problems (Teacher6). Some pupils might prefer to work alone or just with

another peer and some pupils can work very effectively with bigger groups as well. However, Teacher6 believes that computerised learning is more of individualised learning.

> They love to help each other. If someone gets stuck and can't find the right website or they can't type the word because they don't know how to spell it, they often jump up and help each other. So, it can become a group learning situation, but a computer is something that you don't talk to people and you can do all your work on your own which has its benefit of course. But it can lead to individualised learning. (Teacher6)

One participant claimed that collaboration can be between individuals rather than between individuals and computers. Collaboration with AI is an unrecognised concept for some teachers.

> Not robots, not ICT, not iPad, so they might be my personal experience, but a lot of collaboration needs to be person to person, especially at KS1 and KS2. (Teacher6)

Discussion

Collaboration is a very central theme in technology-based education and almost all forms of collaboration include technology in some way whether fully technologically mediated or including computers (Warwick et al., 2011). Interaction is the by-product of technology and education is transferred to the technological domain so as collaboration. Pupils must be engaged in education that can be achieved through the interactive features of technological design. School is the place that we learn to work together and socialise, but they think it can be achieved more effectively through face-to-face interaction. Teachers are not fully convinced that ICT promotes collaborative works, therefore, training or guidance is necessary to make teachers more confident about using ICT for collaboration.

Collaboration is essential for managing behaviours; therefore teachers should not be intimidated because of the risk that collaboration involves. If there are pupils with SEND or behavioural problems teachers might avoid using collaboration, teachers avoid collaborative activities because it is difficult to monitor every child and some pupils hide in the group. At this point, teachers' assistants should support them to allow collaborative activities. In addition, using mixed ability groups and peer supported groups should be more effective, but by making sure that pupils change roles and share responsibilities. There are some pupils who avoid being in the same group with SEND although there are pupils more willing to work with those pupils. For example, during technology-based practices, tech-savvy pupils do the main work and collaboration cannot be implemented effectively. Talk partner activities, discussions with peers to elaborate on their ideas and defend their position in an argument are commonly used. It is very effective to improve communication and social skills including learning turn-taking and negotiation.

Teachers stated that if an activity involves ICT pupils are more willing to take part and the user-friendly interface of applications draws pupils into educational activities. The affordances of ICT which will be discussed later in this chapter are referred to by teachers as the features that draw them to using ICT for supporting pupils. Self-regulation is essential to take the ownership of the learning as it involves interpersonal regulation and arrangement of social interaction (Jarvela et al., 2015). As it is discussed earlier, executive function is related to managing their behaviours and controlling their emotions in a social

situation. Executive function is essential for collaboration because collaboration relies on learners' ability to interact and share responsibility. Participants argued that there are disputes over sharing the device among pupils and it is due to lack of self-regulation.

Interview findings also suggested games, coding activities, creating slides, brain-storming ideas (specifically if it includes iPad) are effective collaborative activities. The most common practice among teachers is to ask pupils to create slides, making keynote presentations and creating posters or newspapers. One of the original ideas of collaborative activity is that teachers asked pupils to present their philanthropy project. They used filming and creating videos (i.e. creating trailers over iMovie) and editing over GoogleDocs with a partner to avoid behavioural issues and communication breakdowns. Teachers suggested that for effective collaboration timing and planning activities are very significant. One teacher also claimed that collaboration can be between individuals rather than individuals and computers.

Conclusions

ICT helps design bite-size learning, and pupils with different skills can learn on their pace with bite-size learning. It demonstrates that the pedagogy of ICT is design-based, bite-size and multimodal. ICT supports interaction and collaboration; thus, pupils can learn from each other with the supportive pedagogical features of ICT. This is the definition of effective teaching for teachers and the use of ICT which is equal to effective teaching for participants. However, the collaboration is limited to creating posters and slides, and also there is limited practices of collaboration between pupils with and without behavioural problems. Games are common educational practices and teachers use them for collaboration.

Easiness, speed, connectivity, flexibility, multimodality, interactivity, remote control, distant presentations, and the feeling of newness are features that draw teachers into using ICT, and with the opportunities which are created by ICT, teachers and schools feel an obligation to use ICT. Easiness is the combination of all features because when everything comes together it is easier to use ICT, so teachers are looking for all-in-one packages. Technology means the state-of-the-art devices that give the feeling of newness and modern, but it can provide these feelings by combining all features that were mentioned. Educators are looking for colourful but meaningful and appropriate content and platforms that increase engagement, interaction and collaboration as participants see the role for ICT to provide these features all together. However, having access to these features have not led to effective educational practice because teachers have difficulties to design their lesson to make most of these features, and there are no examples of project-based or problem-based student-centred activities.

ICT is the future of education and the remote learning platforms will get more attention therefore considering the problems around ICT-based education. Collaboration is very minimal during ICT-based activities and the literature that claims that ICT is where collaboration will thrive is not reflected in the schools. Technology has not removed all barriers because still there are schools, teachers and pupils that have difficulties in accessing technology although it is an imperative for education. Effective teaching is the

combination of a clear pedagogy, supportive technological infrastructure, positive inclusive school ethos, guided teachers and classroom environment that is sensitive to needs. The trend in denaturalisation of education will bring different settings in which pupils are on their own to direct their learning, but schools are accepted as best places to socialise and integrate into society.

Limitation and recommendations

Observations would enhance the triangulation with additional sets of data, but the data would be unmanageable as a few observations made during school trips. Interviewing pupils would also provide their understanding of education and technology as the aim is to support their learning, but it was difficult to get their consent so, it was also unmanageable due to time constraints. There is a need to observe classrooms to analyse educational praxis, because seeing ICT when it is being used would enhance one's understanding of the role of ICT in supporting pupils. The next phase will be cross-referencing the findings with observations made in schools that are using technology in technologically enhanced classrooms, in order to compare different practices. It is essential to analyse the discourse around ICT in schools that integrate ICT fully into their classrooms in line with whether the so-called potential of ICT is being realised.

Author Contributions

All authors contributed equally to the manuscript and approved submission.

Conflict of Interest Statement

The author/s confirm they have no conflict of interest to declare

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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