Anglia Ruskin University

'A problem shared…': The use of Shared Documents in the post-pandemic classroom.

Thomas Willis-Jones
Student ID: 2031329

A Major Project/Dissertation in partial fulfilment of the requirements of Anglia Ruskin University for the degree of Master of Applied Linguistics and TESOL

Word Count: 15042
Submitted: September 2022

Table of Contents

Abstract

The upheaval caused by the COVID-19 pandemic provided a unique period of instructional experimentation for educators, and served as a catalyst for the increased integration of digital tools into traditional teaching practices. As we return to the 'post-pandemic classroom', the present study focuses on one such digital tool, Shared Documents (SDs), and explores their perceived pedagogical value across the online/on-campus teaching dichotomy. It investigates the beliefs and experiences of a representative group of early SD adopters at a UK Higher Education institution to determine where and how they can best be utilised as a learning technology. Where similar investigations into SD-technology were largely dependent on tutor perceptions, the present study, which employs a semantic approach to Thematic Analysis, provides student perceptions an equal platform, believing that it is only by involving all members of the community of practice to which SDs are introduced that we can determine the factors affecting their effective utilisation. The results indicate three key areas where SDs provide value as a learning technology: gauging student understanding, encouraging communication, and collaborative learning. However, these findings also reveal the legacy of COVID-19 on student working practices, with clear implications for the design and management of SD-mediated activities. Practical recommendations in these areas are offered, as well as implications for research into SD use in the 'new normal' of teaching.

1. Introduction

1.1 Rationale

The need to avoid in-person interactions due to the COVID-19 crisis required educators around the world to shift existing academic provisions to distance learning and Emergency Remote Teaching (ERT) overnight. This upheaval was a provocation to long held instructional practices, and required the use of 'diverse instructional technologies' in order to 'maintain the pedagogical objectives of face-to-face courses' and foster the types of learning experiences that were lost as teaching moved away from the classroom (Chen, 2022, pp.6-7). Where digital tools had often previously been seen as supplementary, 'enhancing additions' to existing pedagogical practices (Knox, 2019, p.358), they quickly became the main stage, with restrictions leaving educators scrambling to find adequate online platforms and tools which were able to span spatial and temporal dimensions. While this period of ERT has been described as 'disruptive', 'unwelcome', and even 'disastrous' (Rapanta et al., 2021, p.717), for many, it 'opened a path for initial digital teaching experiences' and a questioning of 'the natural patterns for teaching and learning' (Rapanta et al., 2021, p.724). The present study is motivated by the belief that the COVID-19 crisis could prove to be a catalyst for an increased 'digitalisation' of education and open up 'new horizons of instructional design' which move away from an online/on-campus teaching dichotomy that 'obscures more nuanced and integrative choices' now available to educators as we enter the 'post-pandemic classroom' (Novak, Razzouk and Johnson, 2012, p.41; Rapanta et al., 2021, p.717).

The focus of the present study is a digital tool which spans this online/on-campus division, Shared Documents (SDs), and perceptions of its value as a learning technology. Learning Technologies can be defined as digital tools that are employed within a learning environment, with Technology Enhanced Learning (TEL) referring to the learning experiences which such technologies facilitate (Laurillard, 2013; Bergdahl, Knutsson and Fors, 2018). SDs can be defined as 'communal', digitally distributable versions of standard Word Processor documents, via platforms such as *Google Docs* or *MS Word,* where content can be viewed and adapted both remotely and simultaneously by multiple users (Guerrettaz, 2021, p.51). While not a bespoke learning technology, SDs have been appropriated by many educators due to their ability to meet the increased need for a text-based means of participation in synchronous (co-located) and asynchronous (distributed) learning environments (Bergdahl, Knutsson and Fors, 2018; Driggs and Brillante, 2020; Solomon and Verrilli, 2020). Due to their applications across multiple contexts, SDs form a valuable central point of investigation into changes in educational practices during this crucial period of research, where educators around the world are attempting to balance technology, pedagogy and a 'new normal' of teaching (Rapanta et al., 2021).

1.2 Research Aims and Objectives

The aim of the present study is to investigate how SD technology is being utilised in the daily practice of some of its early adopters, and use the experiences and perceptions of this community of practice to help identify to which learning environments they add most value. From my own experience as an English for Academic Purposes (EAP) Practitioner, I have held a longstanding interest in the nuances of the TEL environment and the increased convergence of online and on-campus education. Having endured the initial disruption of ERT, I noticed an upturn in the use of SD-technology in my immediate teaching context, not just in online environments but, increasingly, in face-to-face practice as well. The present study, therefore, serves as a broad investigation into SD use in each of these learning environments. Kirkwood (2009, p.109) notes that it is common to find deterministic statements in TEL-related literature which assert how the use of a particular digital tool will bring about desirable changes in learning outcomes, but that the evidence to support such claims is often in short supply. It is crucial, therefore, that the present study takes a critical eye to SDs, and does not just investigate what the technology theoretically enables, but what its users actually do with it in order to better understand how and where it can be best utilised as a learning technology (Laurillard, 2013).

Little has been written on the broad functionality of SDs in their current form, and the various opportunities they provide to facilitate learning. Where investigations into SD-technology have been reported, they often centre on a particular function, such as annotation (Nokelainen et al., 2003; Nokelainen et al., 2005), or are limited in focus to what the technology enables for either online (Solomon and Verrilli, 2020; Driggs and Brillante, 2020) or face-to-face learning (Bergdahl, Knutsson and Fors, 2018). Where the perceptions of users are included in these investigations, these largely focus on those of the tutors, with the omission of student perceptions appearing a clear misstep. The present study argues that only by viewing student perceptions as a crucial research consideration can we better understand their working practices with an emerging technology and properly assess 'the nature and extent of barriers to its effective utilisation' (Kirkwood, 2009, p.118). By placing value perceptions of SDs at the centre of this study, it aims to allow educators to better assess the 'opportunity cost' of SD interventions, and assess the relative value of their introduction to a learning environment against the value of their absence (Baumer and Silberman, 2011). With this in mind, the present study seeks to address the following research questions:

1. *How do tutors and students perceive the use of Shared Documents to facilitate learning?*
2. *In what contexts can this digital tool be used most effectively as a learning technology?*

It will argue that SDs provide value to a range of learning environments, with clear utility in online, on-campus, synchronous and asynchronous learning. However, this value is inseparable from the design

and management of the learning activities SDs facilitate, and a close consideration of the contextual factors of the TEL environment in which they are used. While SDs may be a cumbersome obstacle to face-to-face dialogue, and their use raises questions on the nature of how students collaborate through technology, this should not overshadow the diverse opportunities SDs provide as a flexible feedback mechanism, means of gauging student understanding, and convenient platform to communicate across temporal and spatial boundaries.

1.3 Methodology

A Thematic Analysis of representative tutor and student perceptions from the *Centre for Academic Language and Development* at the University of Bristol was conducted, gathered through a series of surveys, focus groups and semi-structured interviews during the 2021-22 academic year. While Garrison and Kanuka (2004, p.102) note that Higher Education institutions are often 'resistant to change', I believed that focusing on this department (referred to hereinafter as the 'research setting') would lead to fruitful discussions with tutors and students who I have found to be enthusiastic in sharing their expertise and reflecting on their practice. Data was coded via the *NVivo* Qualitative Data Analysis software, following the six-phase approach suggested by Braun and Clarke (2006). While the limited sample size is too small to be a true representation of perceptions across the wider population, the insightful discussions which took place help form a valuable snapshot of experiences and beliefs pertaining to the emergence of SDs as a learning technology.

1.4 Overview of Structure

The study is organised into six chapters. The first introduces the study and gives a brief overview of the rationale, aims, research questions and methodology of the research. The second explores literature which frames this investigation into SD use in terms of wider research into TEL. The third chapter presents the methodology behind the research, outlines its theoretical framework and justifies the decisions taken in its design and completion. The fourth chapter reports the key findings from the research, introducing the main themes identified in the data. These are then further explored in the Discussion in Chapter Five, with key points linked to wider reading relevant to the aims and research questions of the study. The final chapter focuses on the study's implications, its limitations and recommendations for future research.

2. Literature Review

2.1 Introduction

The following chapter aims to outline some of the key issues in the current literature which have shaped the research questions and key design decisions of the present study.

In an attempt to identify Shared Documents (SDs) role as a learning technology, *Section 2.2* initially frames SDs as a form of Social Annotation tool, due to the close parallels between their functionality, and role as a platform for the collaborative annotation of electronic texts (Novak, Razzouk and Johnson, 2012). Where earlier literature in this area saw a clear distinction between SDs and Social Annotation tools, this section demonstrates where this separation has largely now eroded, but also indicates several remaining areas of separation relevant to the present study.

Section 2.3 likens SDs to the notion of technology as a 'Mediating Artifact' found in research into Computer Supported Collaborative Learning (CSCL). It describes SDs' dual role as both a 'cultural tool' and 'mediator of accumulated knowledge' (Ludvigsen and Mørch, 2010, p.291), which is exemplified by a recent teaching intervention by Bergdahl, Knutsson and Fors (2018). The omission of student perceptions from this and similar CSCL studies are explored, and why this motivates their essential inclusion as participants in the present study.

Section 2.4 then takes a critical eye to Puentedura's (2006) SAMR Model, exploring its potential value as both a taxonomy of Technology Enhanced Learning (TEL), and a means of describing and categorising SD use within the present research setting. It explores some of Hamilton, Rosenberg and Akcaoglu's (2016) key criticisms of the SAMR model, such as its lack of accommodation for context. This is connected to Baumer and Silberman's (2011) argument that contextual factors are a key determinant of assessing the value of learning technology versus the value of its absence, which necessitates an ecological perspective when making such an assessment of SDs.

Section 2.5 explores one means of gaining this perspective, Bond and Bedenlier's (2019) *Bioecological Student Engagement Framework*, and outlines the value this conceptual framework provides the present study due to its means of exploring the nuances of the TEL environment in which SDs are used. It argues that by understanding the intricacies of this learning environment, and their effect on student engagement, we can better understand the perceptions of SDs' end-users, and where they can best be employed as a learning technology.

Finally, *Section 2.6* considers the importance of understanding the different actions that take place when students engage with learning materials within a TEL environment. Where Section 2.5 takes a macro view of this environment, this section looks closely at the realities of 'materials-in-use' and how these materials 'shape classroom interaction and activity' (Guerrettaz, 2021, p.39). It describes the notion of 'intra-action' found in recent research into Pedagogical Ergonomics, and the influence materials exert on their users. It then concludes with a discussion of the inseparable relationship between TEL materials and the mediating devices through which they are accessed, and why this consideration is essential to the present study.

2.2 Shared Documents as a Social Annotation Tool

One means of illustrating SDs' potential as a learning technology is in their role as a Social Annotation tool. Social Annotation takes place largely on bespoke platforms that allow 'users to collaboratively underline, highlight and annotate an electronic text, in addition to providing a mechanism to write additional comments on the margins of the electronic document' (Novak, Razzouk and Johnson, 2012, p.40). Social Annotation activities aim to distribute the cognitive load of tackling a challenging text across multiple users, thus enabling a text-based collaboration which 'promotes reading comprehension, critical analysis, and meta-cognitive skills' (ibid.). Annotations can be made both 'private' and 'public', with the latter aimed at fostering student-student and student-tutor interactions, which add a social element and sense of community to textual analysis (Novak, Razzouk and Johnson, 2012, P.48; Kalir et al., 2020). An early example of this was the Open University's '*Digital Document Discussion Environment*' (D3E), which enabled asynchronous text-based discussion in parallel to the 'cut-and-thrust of face-to-face discussion' in Higher Education (Laurillard, 2002, pp.150-151). Novak, Razzouk and Johnson (2012, p.40) drew a distinction between Social Annotation tools and *MS Word* and *Google Docs*, the main platforms for present-day SDs, describing these as 'Text Annotation' tools and not Social Annotation technology, believing that they 'do not provide an online social platform for information sharing'. However, in their present form, both *MS Word* or *Google Docs*-based SDs demonstrate the three features Novak, Razzouk and Johnson (2012) used to define SA tools; the ability to add an additional layer of information into an existing resource via comments and annotations; the ability to mark, highlight and underline an electronic text; and the ability to provide an online platform for peer-sharing and social collaboration.

However, there are several important distinctions between modern SDs and the numerous Social Annotation tools available to educators. Unlike SDs, Social Annotation tools allow the annotation of multiple file types, and are not limited to those compatible with *MS Word* or *Google Docs* (Novak, Razzouk and Johnson, 2012). Though most are primarily text-based, modern Social Annotation tools also enable users to annotate multimedia resources, such as audio and video files (*Annotate.tv*) or online webpages (*Hypothes.is*). Unlike SDs, some Social Annotation tools, such as *Talis Elevate*, also offer the function of viewing platform analytics, which provides educators with in-depth data on the level of engagement of individual students. Social Annotation is also largely reliant on pre-existing texts, with little written on the ability to integrate student-generated work into an annotation activity, something easily achievable via a SD. While Mendenhall and Johnson (2010) conducted a study into the online Social Annotation tool *HyLighter*'s ability to facilitate 'peer-critique' activities of draft work between paired students, this appears an isolated case, with the majority of interventions studied in the current literature focusing on the value Social Annotation tools add to reading comprehension

activities. While some of these interventions demonstrated a fruitful learner-centred approach to such tasks (Nokelainen et al., 2003) and an increase in student motivation (Nokelainen et al., 2005), these were primarily focused on asynchronous learning with 'distributed' students, with little written on their utility in a synchronous, 'co-located' environment (Ludvigsen and Mørch, 2010). In order to find example interventions that demonstrate SDs' functionality beyond mere annotation, and the wider role they could play in the post-pandemic classroom, it is useful to draw further parallels with example technological interventions found in Computer Supported Collaborative Learning (CSCL) research, where a similar technology has been employed.

2.3 Shared Documents as Computer Supported Collaborative Learning

CSCL is concerned with how technology can help facilitate learning in groups in both online and face-to-face environments (Ludvigsen and Mørch, 2010). Related research aims to understand the actions that are mediated through technology, how individuals learn with specific digital tools, their interactions with peers, and how this contributes to the co-construction of knowledge (ibid.). CSCL is clearly influenced by Social Constructivism, the social learning theory that posits that 'successful teaching and learning is heavily dependent on interpersonal interaction and discussion' (Davis et al., 2017, p.67). CSCL research views learning technology as primarily a 'mediating artifact' which facilitates the types of social interaction which, according to Vygotskian epistemology, 'precedes learning and cognition at the level of the individual' (Wertsch, 1986; Ludvigsen and Mørch, 2010, p.291). CSCL research, therefore, holds the dual view of learning technology as both a 'cultural tool', in that it facilitates these essential interactions, and a 'mediator of accumulated knowledge', as it provides a record of the learning which these interactions generate (Ludvigsen and Mørch, 2010, p.291). Both of these descriptions align with the affordances of SDs as a learning technology, and are evident in a recent study on their use in a face-to-face setting by Bergdahl, Knutsson and Fors (2018).

Their study applied design-based research to explore 'how teachers and researchers could [collaboratively] design activities that use learning technologies to support student engagement' (Bergdahl, Knutsson and Fors, 2018, p.101). It involved the design of a single teaching intervention, over two classes, in a co-located setting, where all activities were mediated through student laptops, and the online tools *Socrative* and *Google Classroom.* Although *Google Classroom* was described by the authors as more of a Virtual Learning Environment, its uses in this specific intervention were no different than the affordances offered by SD technology. Throughout the lessons, students were encouraged to record their discussions, which were visible to all, with the teacher able to monitor and interject in student discussions in real-time via a tablet device. Bergdahl, Knutsson and Fors (2018, p.107) noted that by ensuring 'the students' thoughts, questions and ideas' were visible throughout, this 'reflected their learning process' and 'enabled the teacher to follow students' learning in a way

that is not possible in a traditional setting'. As student contributions were visible to all, the authors believed this had a 'triggering' influence which encouraged further engagement (ibid.). Furthermore, a key finding was the variety of interaction that was enabled through the introduction of this shared technology, as it enabled 'student–peer interactions (turning to peers for help), student–peer contributions/interactions (engaging in the learning of their peers) and student–teacher interactions' (ibid.).

However, teachers involved in the study reported the distracting influence of the devices used to access activities, with students often viewed as seeing 'the internet as a saviour', with an apparent 'predisposition to turn to the internet for answers' (ibid.) This seems to be a common view in recent literature: that the devices required for learning technology interventions could potentially hamper traditional learning processes, and that interactions with these devices require careful management to guard against distraction and maintain effective classroom dynamics (Bergdahl, Knutsson and Fors, 2018; Christodoulou, 2020; Driggs and Brillante, 2020). However, crucially, the perceptions of the students were omitted from the findings of Bergdahl, Knutsson and Fors' (2018) study, and so an explanation of the potential reasons for this barrier to engagement was not offered. This was also true of a similar intervention described by van Leeuwen et al. (2013), who sought to describe the complexity of the teachers' situation and how they regulated learning over a longer CSCL intervention. Though this latter study would naturally focus primarily on the teacher's experiences, van Leeuwen et al. (2013, p.1385) did express a desire for greater student involvement in future research, in order to provide a more balanced understanding of the realities of such settings.

While the work of Bergdahl, Knutsson and Fors, and the notion of a 'mediating artifact' appear similar to the use of Social Annotation tools, they are distinct in that their intervention relied upon student-generated work, and illustrated how SD technology, with its diversity of interaction patterns and greater visibility of student work, provides clear value to a face-to-face setting. However, the apparent trend in recent literature of omitting the experiences of students as end-users is surprising, given the concern surrounding the distracting influence of devices which are now commonplace in the contemporary classroom. It would be valuable to engage with students directly to explore their perspective on this so-called distraction, how they perceive the greater visibility of their work in progress, and the variety of interactions SDs offer. This necessitates student involvement, and an evaluation of their experiences, which is given in the present study.

2.4 The SAMR Model

The example interventions in the previous section show how technology can enhance the learning experience and allow for activities that were not previously possible. This aligns with the *Redefinition* level of Puentedura's (2006) *Substitution, Augmentation, Modification, Redefinition* (SAMR) *Model.* Puentedura developed this model as a useful tool for educators to monitor and evaluate their developing proficiency in TEL. In terms of its value for the present study, the SAMR model provides a guiding framework to categorise how teachers perceive and mobilise SDs in their daily practice, and to what extent they are being appropriated into their established 'schemes of use' (Choppin et al., 2018, p.79).

Presented in *Figure 1*, Puentedura divides the model into four levels and two main phases, with *Substitution* and *Augmentation* pertaining to 'Enhancement' through technology, and *Modification* and *Redefinition* pertaining to 'Transformation' through technology. *Substitution* refers to instances where 'technology acts as a direct tool substitute, with no functional change', with the *Augmentation* level relating to substitutions where there is 'functional improvement' (Puentedura, 2006). The *Modification* and *Redefinition* levels then refer, in turn, to instances where technology allows for 'significant task design' and 'the creation of new tasks [which were] previously inconceivable' (ibid.) The SAMR model demonstrates the belief in the potential for technology to 'extend or even transform what can be realised in teaching' and 'make possible learning activities that would otherwise be extremely difficult to achieve' (Kirkwood, 2009, p.108).

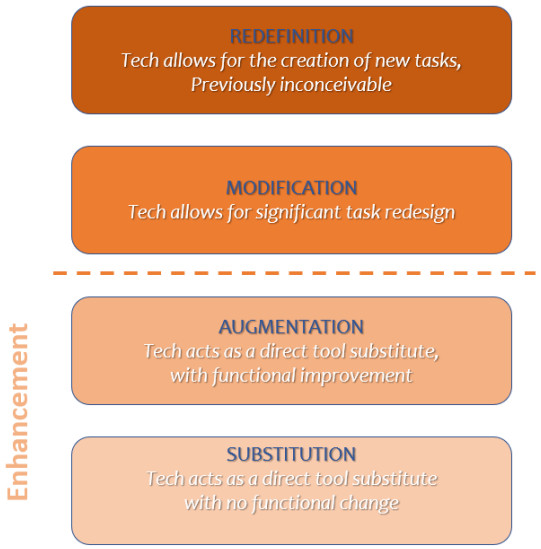


Figure 1: The SAMR Model (Puentedura, 2006)

Its linear progression loosely corresponds to the 'developmental trajectory of stages' which Reich (2020, p.149) believes educators move through as they adopt new technologies: 'entry, adoption, adaptation, appropriation, and invention'. By applying the SAMR model to categorise participants' SD use over the last year, this could test a common claim in recent literature that educators and students approach new technology with a degree of 'conservatism', and thus also test whether these teachers are merely using 'new technology in old ways' to maintain traditional classroom practices or are, in fact, exploiting it to transform the learning experience (Reich, 2020, pp.149-150). Its hierarchical nature, presented as a taxonomy, also 'encourages teachers to "move up" from lower to higher levels of teaching with technology, which according to Puentedura, leads to higher (i.e., enhanced) levels of teaching and learning' (Hamilton, Rosenberg and Akcaoglu, 2016, p.434).

However, Kirkwood (2009, p.114) argues 'such models of e-learning adoption introduce additional opportunities for potential dissonance between teachers' beliefs and practices', where the model could compel them to employ technology which 'they would not normally embrace'. Taking a cautious view on the transformative potential of education technology, Hamilton, Rosenberg and Akcaoglu (2016) note several key criticisms of the SAMR model which challenge its applicability to research and teaching practice. For example, Puentedura (2014) highlighted Mueller and Oppenheimer's (2014) study into student substitutions of longhand notes for typed, digital alternatives as a positive example of a technological *substitution,* believing the switch from one note-taking method to another was seen as a straight swap, with no functional change. However, Hamilton, Rosenberg and Akcaoglu (2016, p.436) note that when providing this as an example, Puentedura did not recognise Mueller and Oppenheimer's finding that the substitution negatively impacted the students' learning, and actually argued against the substitution. This demonstrates a key truth that the SAMR Model does not recognise; that technology changes any situation to which it is introduced.

Baumer and Silberman (2011, p.2272) argue that the positive transformative potential of technology can often be overstated, and that the use of technology 'may at times be more disruptive or harmful than the circumstances they are meant to improve', citing a range of studies documenting instances where technological solutions led to unintended consequences, as the effects on contextual factors were not fully considered. Hamilton, Rosenberg and Akcaoglu (2016, p.436) argue that 'technology frameworks that are designed and put forth without attention to context, such as the SAMR model, often over-generalize their prescriptions and ignore the complex settings in which this technology integration occurs'. Without fully considering these contextual factors, in instances where a technological transformation is intended to create a 'functional improvement', there may also be unintended detrimental consequences.

While the SAMR model could provide a valuable means of recording and describing the developmental trajectory of SDs as a learning technology at the research setting, it is also crucial to consider 'the complex ways technological interventions reconfigure the situations into which they are introduced' and how context may shape both use and perception of a given tool (Baumer and Silberman, 2011, p.2273). This would enable a better assessment of the 'opportunity cost' of SD use, and a comparison of the value of its introduction against the value of its absence in a variety contexts (ibid.). The following section introduces a valuable ecological framework for understanding these contextual factors, and the difficult decision-making process educators must contend with when considering such interventions.

2.5 The TEL Environment

One of the main motivations for the present study, and a significant driving force behind my own early adoption of SDs as a learning technology, was the pervasive issue of student engagement. It was felt SDs could be used as a platform to encourage interaction and engagement in online classes, and lead to a greater parity of contributions in the face-to-face classroom. However, Kirkwood (2009) argues that there is scant evidence about what impact technology alone can have on student engagement, and calls for a more holistic view of the relationship between engagement and Technology Enhanced Learning (TEL). Seeking to address this, Bond and Bedenlier (2019) created the *Bioecological Student Engagement Framework* (see Figure 2), which outlines the influencing factors of a student's TEL environment and their potential impact on different dimensions of engagement. To Bond and Bedenlier (2019, p.2), 'engagement does not occur in a vacuum' but 'is impacted and influenced by many contextual factors, and it is vital that these wider influences be considered when exploring student engagement'. In a later work, Bond et al. (2020, p.3) define student engagement as:

> *'the energy and effort that students employ within their learning community, observable via any number of behavioural, cognitive or affective indicators across a continuum. It is shaped by a range of structural and internal influences, including the complex interplay of relationships, learning activities and the learning environment. The more students are engaged and empowered within their learning community, the more likely they are to channel that energy back into their learning, leading to a range of short and long term outcomes, that can likewise further fuel engagement.'*

This interplay of relationships is presented in Bond and Bedenlier's ecological framework as 'The TEL Microsystem', which highlights the key influencing factors which determine student engagement where 'practitioners are able to exert the most influence' when employing learning technology. The TEL Microsystem could be seen as an example of a 'social context' as defined by Social Informatics research, i.e., an environment which plays 'a significant role in influencing the ways that people use information and technologies' (Kling, 2007, p.205). Social Informatics is concerned with the relationship between technology and society and serves as 'an interdisciplinary study into the design, uses and consequences of information technologies that takes into account their interaction with institutional and cultural contexts' (ibid.). By better understanding the 'social context' of information technology use, Social Informatics research aims to not only describe, but actively generate theories which support 'the design and configuration of information systems that work well for people and help support their work' (ibid.). Breaking down the TEL environment into this matrix of relationships helps us to explore why certain technologies could have 'varied conflicting consequences in different settings', and where SDs could best serve the learning experience (ibid.).

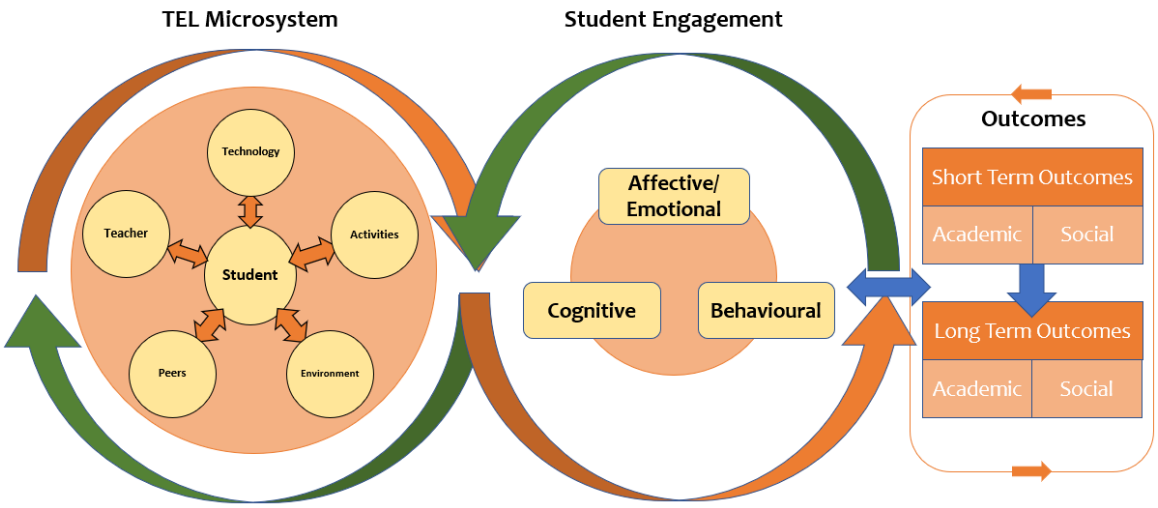


Figure 2: Bioecological Student Engagement Framework (Bond & Bedenlier, 2019)

Bond and Bedenlier (2019) discuss each area of the TEL Microsystem in terms of their potentially significant impact on a student's *cognitive*, *affective* and *behavioural* engagement. In their description, *cognitive* engagement relates to learning strategies, understanding and regulation; *affective* engagement relates to reactions to peers, teachers and a sense of belonging to the learning environment; and *behavioural* engagement relates to participation, persistence and conduct (Bond and Bedenlier, 2019, p.2). The complex ways in which these different dimensions of engagement are influenced by the TEL Microsystem are beyond the scope of this literature review, however, these connections were of paramount importance to the design of the research tools described in the following chapter. *The Bioecological Student Engagement Framework* demonstrates how context influences engagement, and engagement influences learning outcomes within a TEL environment, and so provides a strong theoretical grounding to later discussions of participants' realities and perceptions of using SD technology. Only by exploring this complex network of relationships can one better understand the various experiences of SDs' end-users, and explore where they can best add value as a learning technology.

2.6 Materials-in-Use

While the TEL Microsystem offers an ecological framework to understand the important contextual factors of the environment to which SDs are introduced, it is also important to document what actually happens in these environments, and the specific interactions between tool and users when engaged in an activity. The present study recognises that just as the learning environment exerts influence on the student, so too do the learning resources through which activities are mediated. Guerrettaz (2021) argues that the use of materials is a poorly understood dynamic, and maintains Sørensen's (2009) belief that qualitative research into this area should focus on what happens between objects and users within the classroom. Pedagogical Ergonomics, as a notable example of such research, treats objects

(tools and resources) 'not as a secondary issue in the service of human cognitive development but as central to what happens in classrooms' (Guerrettaz, 2021, p.60). It is concerned with 'materials-in-use', and explores the 'intra-action' between object and user in the attempt to accomplish an activity, a concept which recognises that 'just as a human user acts on the object, the object also influences the user' (Guerrettaz, 2021, p.41). A common example used to describe intra-action is a computer mouse: where extended use of a traditional mouse can cause strain and injure the user in the long term, an ergonomically designed mouse prevents such injury. In the aforementioned case of Mueller and Oppenheimer's (2014) study into digital note-taking, the negative impact of that technological substitution could simply be due to a lack of consideration of how the change of tool leads to different, potentially cumbersome actions with and around that tool. In this case, the action of typing signals formality and, because of this tool substitution, students must contend not just with a different physical interaction, but a cognitive one too (Driggs and Brillantes, 2020). By exploring the actions that are facilitated by materials and, by extension, the digital tools which host them, we can better understand their potential impact on the different dimensions of engagement mentioned by Bond and Bedenlier (2019).

Although Pedagogical Ergonomics routinely refers to intra-action as a phenomenon between 'beings' and 'objects', and focuses on the 'physical' nature of materials, the present study recognises that digital tools necessitate the use of devices, and the presence of these devices contributes, in some form, to classroom dynamics. Therefore, the physical nature of SDs, and the actions which teachers and students take when using them, must also be considered when investigating its perceptions and potential value (Guerrettaz, 2021). Just as the SAMR Model helps to categorise various TEL activities, Pedagogical Ergonomics helps to categorise the different 'modality' of learning materials and the types of actions they enable, presented in *Table 1* (ibid.). Taking the earlier intervention described by Bergdahl, Knutsson and Fors (2018) as an example, SDs could be described here as *Communal* (all students are provided access to the same document), *Universal* (all student work is visible to each other via a screen projection), *Distributed* (each student is assigned a particular section of work), and *Responsive* (all users are free to edit the content of the document which is being used).

1. Modality	*2. Definition*	*3. Example*
Communal	All students receive and use physically different 'objects' inscribed with the same content	worksheets, textbooks
Universal	All students share a physical artifact or tool	whiteboard, videos
Distributed	Different materials for different students, from a set comprising a coherent 'system'	information gap
Responsive	User actions change materials' content	website

Table 1: Modality of Materials Use (Guerrettaz, 2021)

Though not all SD interventions will use the tool in this way, this explanation of material modality helps reveal some of the actions which are possible when it is employed in a TEL environment. Pedagogical Ergonomics could help us to see how different implementations of this technology can 'yield different intra-actions' (Guerrettaz, 2021, p.42), providing a further means of interpreting the relationship between use, perception, and value. Guerrettaz (2021, p.62) maintains that 'teaching is simultaneously art, craft, and engineering of the cognitive, social, and material dynamics of classrooms'. With this in mind, as well as taking a macro view of the contextual factors of the TEL Microsystem, and providing a hypothetical account of what SDs may bring to such environments, the present study must also focus on the micro level realities of 'materials-in-use' in order to identify desirable student-material intra-actions, reveal their effect on engagement, and where they add most value as a learning technology.

3. Method

3.1 Data Collection

In order to gather data on the perceptions of some early implementers of Shared Documents and their potential value as a learning technology, a series of surveys, focus-groups and semi-structured interviews were conducted during a 4-week period toward the end of the 21-22 academic year at the *Centre for Academic Language and Development* (CALD) at the University of Bristol. CALD provides programmes and courses for international and native students, from a pre-undergraduate to post-graduate level, as well as academic development courses for teachers. Student programmes are pre-sessional or in-sessional in nature, run either in preparation for or adjacent to other degree programmes. As the majority of these programmes fall under the English for Academic Purposes (EAP) umbrella, and having seen first-hand how SD technology had thus far been employed within them, it was decided that the scope of the research would be limited to the pedagogical practices of CALD's EAP provisions.

3.1.1 Participants

Fifteen tutors volunteered to participate in the research, though these 'tutors' included more senior faculty members with responsibilities for the design and management of individual programmes. Expressions of interest were gathered from colleagues following an internal presentation which advertised the study's focus and main aims, whereupon email notices with informed voluntary consent forms were distributed, including details of participation and the opportunity for retrospective withdrawal once the research process had begun. Of all those that responded, nine tutors were selected due to their experience of teaching a range of programmes and delivery modes within the research setting, and ability to offer perceptions on SD use in both online and face-to-face

Technology Enhanced Learning environments. The aim was to gather balanced perspectives from different stakeholders, including those that designed programmes incorporating SD technology, and those who employed it 'at the coalface' of their daily teaching.

Students were asked to volunteer to participate from the *International Foundation Programme* (IFP) at CALD, a preparatory, in-sessional programme which international students must complete in order to progress to their chosen undergraduate degrees at the university. Volunteers were drawn from two IFP groups from the Science, Technology, Engineering and Mathematics (STEM) cohort, as this was the sole IFP cohort to encounter a full range of face-to-face, online-only and 'blended' learning modes as they completed this programme. This marked them as potentially valuable contributors to the research, and provided symmetry to the data, as student participants, like tutors, could reflect on their experiences across multiple contexts. For relevant details of each set of focus group and interview participants, see Appendix 1 and 2.

3.1.2 Procedure

Data collection was divided into two blocks, each initially consisting of the same three phases for each set of participants, with tutor participation preceding that of the students. This separation was driven by the practicalities of access to participants, with students only contacted during a gap in their studies, once the bulk of their IFP assignments were completed. Each block consisted of an initial anonymised online survey (see Appendix 3 and 4), distributed via *Microsoft Forms* after an initial piloting, followed by online focus-group discussions and semi-structured interviews that were recorded and auto-transcribed through *Microsoft Teams*.

Survey questions were kept purposefully broad so that they were applicable to the dual contexts of face-to-face and online learning. Questions were targeted at some of the key issues considered in the previous chapter, and sought participants' insights into the potential challenges in the 'new normal' of education. These included:

- *Student Engagement and Digital Distraction*
- *Interaction Patterns and Classroom Dynamics*
- *Feedback Practices*
- *Collaborative Learning*

Focus-group and interview questions (see Appendix 5, 6 and 7) were targeted at the issues that were most prevalent in these early survey responses. Participant selection and group composition was based on a 'purposive sampling' which sought a balanced representation of a range of stakeholders in the students' education at the research setting (Silverman, 2014, p.37). Five EAP tutors and one course designer, known as a 'Subject Lead', were chosen for one of two focus-groups based on their level of

familiarity with SDs as a tool to facilitate learning. Group composition was broadly homogenous, and determined by the participants' overall positive or negative perceptions of SDs, as revealed by their survey responses. The aim was to utilise within-group consensus to allow for the co-construction of meaning as participants shared and compared their experiences, adding richness to the data, with this positive/negative group division also enabling a comparison of a diversity of beliefs across groups (Morgan and Hoffman, 2018, pp.253-4). Discussions centred on the 'nuts-and-bolts' of classroom management, student interaction, and their own adaptations to prescribed teaching material.

Interviews were then conducted with three Programme Co-ordinators, who were chosen due to their responsibility for managing individual courses which utilised SDs at the research setting. The decision to isolate senior tutors into individual interviews was aimed at eliciting their expertise and 'operational knowledge' of the programmes in which SDs were used, and provide an extra perspective of 'insider knowledge' that could help reveal where the intended and actual use of SDs diverged (Monke, 2007; Choppin et al., 2018). These discussions centred on the motivating factors and pedagogical principles behind SD use, although classroom dynamics and teaching practice were also explored, as all co-ordinators had recent experiences of teaching via SDs. This purposive sampling and division of stakeholders also provided a 'safe space' for tutors to give an honest account of their experiences, away from their immediate superiors.

This notion of 'privacy' also led to the omission of focus-groups from the student-facing data collection. The original intention was to directly mirror the research tools used for each set of participants, however, student survey responses indicated some reluctance to share their views in an audience of their peers. Therefore, the five students who volunteered to expand on their survey responses were interviewed separately. While student interview questions were largely drawn from their survey responses, some questions were partly co-constructed with tutors in those earlier interviews. These explored how the students' classroom engagement had been shaped by their recent pandemic experiences.

3.1.3 Ethical Considerations

All those who expressed an interest in participating in the research were asked to return an informed voluntary consent form prior to receiving a link to the initial survey (Appendix 8 and 9). Although this survey was anonymous, those wishing to expand on their answers in a later phase in the research could add their name for future involvement if desired. All focus-group and interview transcriptions were pseudo-anonymised, with references to non-participants redacted. An internal ethical approval process at the research setting was completed before students were contacted for participation. This invitation was further delayed until ongoing academic work had been completed. This alleviated the

potential impact of the research on the successful completion of these assignments, and made clear that the decision to participate in the research held no consequence for the grading of any outstanding work.

3.2 Theoretical Framework

3.2.1 Data Collection

The research was conducted within a critical realist/post-positivistic framework, which required 'a reflective and critical attitude towards one's own beliefs, plans and actions' while seeking the 'truth' of SDs' value as a learning technology (Braun and Clarke, 2013, p.30; Maxwell, 2018, p.23). This reflexivity was an essential part of the decision-making process for both data collection and analysis in an attempt to minimise the 'subjective influences' of my own prior experiences and assumptions of SD use, and the 'insider status' I held within the research setting (Braun and Clarke, 2013, p.30; Roulston and Choi, 2018, pp.237-8). Data collection aimed for a 'triangulation' of data through diverse, complementary data sources that widened the 'conceptual lens' of understanding, whereby later phases of data collection could attend to the unique perspectives of various target groups in turn (Flick, 2018; Maxwell, 2018, pp.19-20).

Tutor and student surveys aimed to provide an initial 'wide-angle picture' of SD use and perception, and serve as a foundation of preliminary input on which the targeted questioning in later data collection stages could be based (Braun and Clarke, 2013, p.137; Morgan and Hoffman, 2018, p.252). These surveys also enabled a purposive sampling for tutor focus groups and interviews, and a triangulation between different target groups whose division was, in part, also influenced by my own 'contextual sensitivity' to the research setting (Flick, 2018, p.535; Silverman, 2014, p.37). In order to provide more detailed data on 'the experiences of participants and the meanings they make of that experience', focus group and interview questions for both tutors and students were broadly 'phenomenological' in nature, and encouraged participants to expand on their earlier survey responses (Roulston and Choi, 2018, pp.234-5). The semi-structured format of interviews allowed for some standardisation of questioning, but also the ability to 'probe responses in an interactive manner' (Carless et al., 2011, p.398). From a critical realist standpoint, rather than seeking a 'single truth' of SD's value, the research aimed to discover multiple truths that were unique to the perspective of different target groups, providing more nuanced data and a fuller picture that would best serve the research questions posed.

3.2.2 Data Analysis

A thematic analysis of the data was employed, given this method's value at revealing the subjective experiences and realities of participants (Braun and Clarke, 2006). As these participants make up

members of a community of practice of which I am part, this necessitated a participatory approach to research, with participants viewed as collaborators throughout (ibid.). Therefore, a semantic approach to the data analysis was adopted, where contributions were taken at face value and themes identified based on what was explicitly stated (ibid., p.97). This frames the research within the 'realist' method of thematic analysis, and so assumes a 'largely unidirectional relationship' between contributions, opinions and experiences (ibid., p.85).

As an early adopter of SD technology, I realise that theme identification is a subjective process, and could be 'coloured' by my own early experiences of using this technology (Bergdahl, Knutsson and Fors, 2018, p.105). Therefore, data was coded inductively, without the use of pre-determined codes. Furthermore, as an emerging approach, the full range of SD implementations for the research setting was unclear at the start of the research process, and this potential lack of uniformity in practice further necessitated an approach that was entirely data-driven. While the SAMR model (Puentedura, 2006) provides a useful tool for categorising individual interventions of such emerging technology, the inclusion of *Substitution, Augmentation, Modification* and *Redefinition* were rejected as priori codes in order to allow for a more general focus on value perceptions.

3.3 Data Analysis

Data was coded following the six-phase approach suggested by Braun and Clarke (2006). After an initial period of data familiarisation, a line-by-line technique was employed using the *NVivo* Qualitative Data Analysis software to generate initial codes of interesting features across the data set. In line with the procedure of Bergdahl, Knutsson and Fors (2018, p.105), the data was revisited for two full cycles of coding to ensure no key information was missed. Once codes were collated into candidate themes and sub-themes, these were reviewed to ensure the coded data 'cohered meaningfully' (Braun and Clarke, 2006, p.91). A candidate thematic map (Appendix 10) was generated to check for points of crossover between themes and ensure they were identifiably distinct. This led to a refinement of these themes, whereby a final thematic map was drawn up (Figure 3) and a detailed analysis of each theme was produced. For a sample page of thematic coding, see Appendix 11.

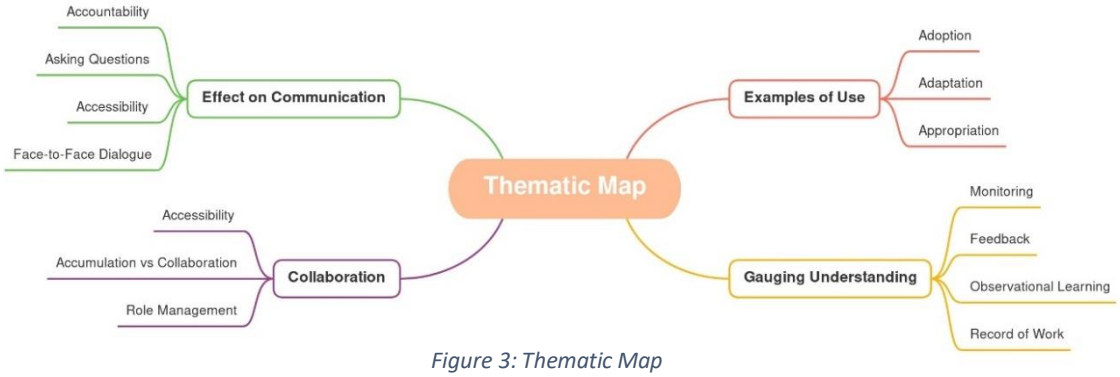


Figure 3: Thematic Map

While the limited sample size and focus on a single research setting somewhat restrict my ability to adequately generalise from the findings presented in the following section, the experiences and perceptions of these early end-users provide a valuable snapshot of the affordances SD technology offers a learning environment. The hope is that other educators, seeking to diversify their pedagogical practices, can use these findings to better assess where SDs may offer value for their own students.

4. Results

4.1 Introduction

The following section outlines several dominant themes that were identified across the data set, which demonstrate specific instances where Shared Documents could improve the learning experience, and key concerns where their introduction may be more problematic. Where direct quotations from survey responses are used, participants are attributed by the initial T (tutor) or S (student) and a numerical value. For all quotations from tutor and student focus groups and interviews, pseudo anonymised names are given. While student engagement was perhaps the most dominant theme across the data set, this often indicated participants' general reflections on the nature of the post-pandemic classroom, rather than specific features of the tool at the heart of the study. Therefore, it will not be attended to in isolation, but only when relevant to discussions around specific interventions using SD technology.

Section 4.2 provides some insights into the developmental trajectory of SDs across the research setting, and its adoption, adaptation and appropriation as a tool for learning. Specific examples of use will be offered, as well as participant reflections on these experiences.

Section 4.3 focuses on SDs role in gauging understanding, which was a key perceived value of this tool for a significant majority of participants. It explores the variety of affordances it offers for monitoring students, providing feedback, and the opportunity it provides for 'observational learning' in both online and face-to-face settings.

Section 4.4 outlines the complex role SDs appear to play in teacher-student and student-student communication. While providing students a valuable alternative means of asking questions and clarifying their understanding, this seems to be contingent on whether contributions are anonymised or attributed. While SDs are seen as valuable in their role as an 'open communication tool' for asynchronous communication, they may be a cumbersome obstacle to verbal communication.

Finally, *Section 4.5* demonstrates key issues reported around student collaboration, and presents contrasting views among students and tutors on this issue. Where students value SDs for their accessibility, and the opportunities they provide for asynchronous collaboration, some tutors question

whether students are collaborating through them at all, and whether these interactions are a true demonstration of collaborative learning, or merely the accumulation of content from disconnected parties.

4.2 Examples of Use

Early examples of use showed a common perception that in online learning environments SDs were an essential tool to facilitate collaborative learning and maintain student engagement. Common motivating factors for their adoption centred on providing students with a text-based means of participation and the opportunity they provide tutors for monitoring engagement by providing access to group and individual output. As T1 summarises, their adoption during the pandemic was driven by '*the absolute need for text-based collaboration in an online-only environment',* which tutors also utilised when 'hybrid' lessons were conducted during the pandemic, where classes were comprised of both online and face-to-face students.

As SDs are 'live' documents and updated in real-time, they enabled tutors to monitor student engagement with tasks while lesson participants were distributed across a range of locations. As T11 notes, '*during the pandemic… it was the only way I could tell my students were engaging'.* The real-time updates of the online document allowed teachers to '*see how they're engaging with it* [the task]*, where they are at any one point, how quickly they're moving'.* This was particularly useful when activities were conducted through 'breakout groups', where students were grouped into distinct online 'rooms', beyond the immediate gaze of the teacher. As T10 notes, they enabled '*me to see what each group is discussing (and their progress) without needing to be present in their breakout room'*. The universal visibility of output on SDs was reported as providing a form of teacher presence that motivated these contributions, without the need to interject in students' formative discussions, with the blank spaces provided on each document described as holding a '*forcing function'* for students. As tutor 'Peter' summarised, '…*with a Shared Document you can see how they are discharging their responsibility… for answering certain things and how they're thinking about it.*'

As teaching shifted back 'on-campus' at the research setting, SDs were reported as being employed both synchronously and asynchronously to aid learning in the physical classroom. As curriculum resources were primarily based on *MS Word* Documents, tutors were able to create additional SD-based materials which matched the aesthetics of existing materials, or make simple adaptations for 'shareable' versions of pre-pandemic material. Examples of reported synchronous uses included '*text reconstructions after doing dictogloss'* (T4), paraphrasing and editing activities which '*promote conciseness'* (T3), '*analyses of exemplars*' (T2), activities where '*a selection of sentences from different student writing* [are presented] *for correction/discussion of language choices'* (T9), and

'*jigsaw/information gap opportunities where different member of a group have something to add to a collective product'* (T2).

However, a more common trend of use in this later stage of their implementation was using SDs as asynchronous support to complement what was done synchronously. Many reported using them as a platform for students to brainstorm ideas in the planning of their assignments, or as a record of the work which took place within a co-located lesson:

> *'I think it is good for students to have a record of everyone's contributions and notes. I often turn the individual worksheet into a Shared Document and post it on the discussion board. That way we can all work together on that worksheet, students can save this worksheet and edit if needed.'* (T7)

This illustrates a common reported belief in the ease in which a SD used during a lesson could be '*tidied up'* (T2), downloaded and edited for later reference, thus providing students with a '*takeaway product*' (T2). Their perceived value as a '*shared class resource*' (T9) and '*repository of information'* (T11) provided tutors the opportunity to extend learning outside of the classroom or, conversely, to integrate asynchronously generated content into a synchronous lesson.

4.3 Gauging Understanding

Many reported that the increased visibility of student output on SDs, and ability to monitor this in real-time, allowed them to experiment with new methods of gauging understanding while a task was in progress, with examples of real-time, delayed, and implicit assessment referred to widely across the data set. Where an on-campus lesson was mediated via a SD, tutors spoke of the ability to monitor and respond to a range of student work, just as online tutors could monitor and guide multiple online breakout group discussions at once. A majority valued the 'comment function' of SDs as a way of maintaining a guiding teacher presence in a formative discussion without needing to intervene physically. Where output was being generated, these '*meddling comments'* (T7) allowed tutors to quickly highlight and link to comment boxes which responded to student work and guided them in a desired direction. This opportunity for real-time assessment of learning was also visible in an example intervention offered by interviewee 'Ruth', where tutors were able to respond to the emerging needs of a large group of students, as evidenced by their contributions to a SD:

> *'…the lead academic who I was team-teaching with could actually then do some global feedback on what was coming out on the documents, on the tables and things, and make them all see each other's work as well. So that was useful from a large group perspective.'*

Others reported using SDs for the delayed assessment of student work. By monitoring work-in-progress, T15 believed that '*Shared Docs can help me to carefully consider, organise and prioritise the*

feedback that I give'. In both online and on campus settings, the accessibility of SDs allowed tutors to share their targeted feedback to an entire group once a task had been completed. To do so, on-campus tutors reported utilising the Interactive Whiteboard (IWB) in classrooms just as online tutors used the 'Share Screen' feature. This also enabled the use of implicit assessment, where focused feedback on a specific student's work could be shared, to the benefit of the wider group. This was valued by tutor 'Peter', who argued that '*by looking at other people's work,* [students] *can reflect on their own and think about how to apply it*'.

In terms of observing other's work via SDs, although some tutors expressed caution that students may be negatively influenced by other's ideas, and some students were concerned that by making their work visible to an audience of their peers it exposed their ideas to '*theft*', the vast majority saw this transparency as a key value of SDs. While student 'Alex' admitted the temptation to '*steal*' the ideas of others, they felt that the visibility of their peers' work allowed them to '*build an idea off some other idea'*, and that when completing activities via a SD they '*get inspired by my peers' answers, and it just encourages me to be more creative*'. This echoes the views of T6, who felt that SDs '*sometimes have the power to inspire'* and that through sharing work on a single platform '*students can see others at work and it provides impetus and motivation*'.

This perhaps explains the motivation behind the widely reported use of SDs as a platform for 'Peer Review' activities in both online and face-to-face contexts, with many exploiting the increased visibility of student work to benefit the peer review process. Many participants reported using SDs for the first time to accommodate the logistical difficulties of conducting peer review online, which they then extended to their face-to-face practice. While some students felt such an approach, which moved beyond a paired student-student experience and made feedback visible to all, exposed their weaknesses to a wider audience, a majority of students appeared to value this expanded approach to peer review. As student 'Rita' comments *'…maybe I'm giving feedback on another piece of students writing, and then you can read that other feedback and think "oh yes, that applies to my work as well"'*. This perception was shared by the tutor 'Sarah', who explained her rationale for making feedback visible to all during her peer review classes:

> *'This is a great idea because students could see the section of another student's piece of work, plus the teacher feedback comments, plus the peer feedback comments. So the richness and the diversity of that feedback that a student can see is absolutely fantastic.'*

However, some tutors felt that in other instances where more formative ideas were sought from students, this increased visibility of output was not always conducive to gauging a true sense of students' understanding. Some participants reported that student output could often be

'*performative*' when shared via the public space of a SD, and that this could often be exacerbated through the process of typing a response. Outside of peer review activities, they believed students would often feel the need to provide the '*right*' response to guard against negative judgement in an audience of their peers, hampering the tutor's ability to see what the student really thought. This can be seen in the experiences of one student, who described the thought process when sharing their understanding via a SD:

> *'I'm just careful for every word I type because everyone is watching or can see it. Like, for example, during the class activities, everyone is really watching the documents. So every word you type it, everyone will see it.'* ('Christian')

This notion of the affective influence of sharing ideas to an audience of peers was also central to a key point raised by multiple tutor participants: how best to encourage students to explicitly communicate things they do not understand.

4.4 Effect on Communication

When participating in online sessions, some students reported a lack of clarity on how to participate and communicate points of uncertainty, and valued SDs as a complementary repository for their questions on the contents under discussion. These experiences were summarised by student 'Rita':

> *'I didn't feel comfortable asking questions online because I did not know when it was the appropriate time to ask. I didn't want to interrupt them mid-teaching. I definitely feel more confident asking questions on a Padlet or a Shared Document than in an online lecture because I'm afraid that I'm asking in the wrong time. As in, when I'm asking in a shared doc, it's accessible to everyone and everyone can answer my question as soon as they see it, so I'm not interrupting anyone.'*

Where SDs were used as a platform for such participation, both in online and on-campus contexts, there was some debate around the level of accountability built into the design of the materials, with no clear consensus on whether student questions and responses should be attributed or anonymised. Some tutors felt that by attributing responses to the students, this would encourage engagement and instil a responsibility to participate, remedying a commonly held belief that, especially in online sessions, some students could become '*free riders*' (T5) or '*passengers'* (T10) during a task. On the value of attribution, tutor 'Katie' believed that:

> '*…for less contentious things and answers, then it's quite useful because then students can see something is expected of them… what I have noticed is that when people's names are up there, you get more people contributing. When you don't have names up there, you tend to get the same few people contributing.'*

A minority of students also reported feeling validated when their questions and ideas were attributed on SDs. Student 'Alex' noted '*I really want to have some credit when I ask questions'* and felt that, in SD mediated group tasks, the attribution of work is '*a positive way to do things, because even in groups if we mess up, we mess up as a group'.* However, like the majority of students, he still valued the opportunity to respond and ask questions anonymously in order to avoid judgement for asking '*silly questions*'. This experience was summarised by student 'Lucia', whose use of the word 'deliver' is telling:

> *'Sometimes I find it difficult to deliver whatever I want to know. Like I don't really know how to deliver it through Shared Documents… I don't really like to share with people things that I don't yet know. Like some students get embarrassed, so I usually like to ask the tutor. I find it easier to deliver and also that none of my classmates could know what I'm struggling with.'*

This is representative of many students' views when their ideas and questions were attributed to them by name: that by being named, their weaknesses were exposed to the wider group, which discouraged them from communicating things they did not understand. Therefore, an equal proportion of tutors valued the 'safe space' of anonymity, where SDs were used as a platform for questions:

> '*And I think being able to respond anonymously on a Shared Document does give people the chance to ask a question or say something that they maybe wouldn't.'* ('Marina')

Despite this lack of consensus, the overall perception of SDs as a platform for more extended dialogues between tutors and students, beyond the boundaries of a set lesson, was much more uniform across all participants, with a majority seeing this as a key reason for their adoption. Student 'Clarke' saw SDs as a platform for '*semi-formal*' interactions with their tutor, halfway between the formality of an email query and a face-to-face tutorial. Students appeared to value the accessibility SDs provided when communicating with their tutors, with this channel of asynchronous communications seen as a convenient means of allowing interaction around busy schedules:

> *'Since there is only so much that can be done during class time, shared documents can act as an open communication tool between students, tutors and their classmates outside of the classroom.'* (S8)

However, a key finding was a widespread concern of the negative influence of SDs on verbal communication within the classroom. While many tutors introduced them as a means of generating contributions in synchronous online classes where students were reluctant to speak, there was concern that when used in a physical classroom, SDs could exacerbate students' reticence to communicate verbally. In these environments, while some saw SDs as a useful platform for '*well-considered dialogue*' (T5), many more felt that they denied students the opportunity for '*spontaneous*

communication' (T6). Tutors noted that the reluctance to speak they noticed in students in online classes was still visible as they returned to the normality of on-campus learning, believing students struggled to readjust to this physical setting. The reality of this adjustment was referred to by student 'Alex':

> *'When I came here, I found it hard to communicate with the people and to work with them to cooperate and, specifically, I needed time to cope with the situation until everything was fine.'*

As T4 attempts to explain, '*I think students have got so used to being online that when faced with a shared doc in class, they may not feel the need to engage in dialogue despite being F2F* [face-to-face]*'*. Furthermore, many students felt it was easier to write than speak and, although there was some reported success of using SDs to provide less communicative students an outlet for their ideas when faced with more dominant peers, for many this led to a reliance on the technology:

> '*In our class many students just depended on Shared Documents and refrained from speaking in general. Like, some of my classmates, I have heard them speak like once or twice throughout the whole semester because they're so dependent on the Shared Documents and that they've lost the ability to communicate verbally because they don't feel as confident as typing it out on a paper.'* ('Rita')

Some tutors were concerned that by providing students with a 'comfort zone' which accommodated their initial reluctance to speak, they were being denied the opportunity to develop both their oral communication and interactive skills, as tutor 'John' summarises:

> *'…if we kind of take away that opportunity, that kind of necessity, rather, to orally communicate, then are they ever going to develop that greater confidence in communicating with people who are, say, more extroverts? Because otherwise we're just going to be continually putting them in their comfort zone. And if we do that, then are they going to become more confident communicators?*'

There was also widespread concern on student dependency on technology in general, and calls for a more carefully managed involvement of devices in the classroom. Just as a reluctance to speak was seen as a legacy of the COVID-19 educational experience, so too was a common trend of students 'defaulting to technology' rather than seeing their peers as a possible resource in the classroom. While many concerns on the distracting influences of devices were not limited to SDs themselves, there was a common concern that when lessons were mediated through this tool, it opened students up to distraction.

4.5 Collaboration, Interaction and Accumulation

One of the most frequently reported uses of SDs at the research setting was to facilitate group work, both in terms of small-scale collaborative tasks and extended group projects. Here, just as in their effects on communication, the solutions SDs provided to existing issues appeared to lead to unforeseen complications. The values of collaborative learning, and the importance of peer-to-peer interaction, were widely reported by tutors, with many seeking to employ SDs to '*encourage collaboration and hence promote the socio-constructivist view of learning'* (T11). However, there were concerns amongst tutors that the increased accessibility of communication offered by SDs may actually hinder intended collaborative interactions. This necessitated a closer investigation of students' working practices to ascertain whether these concerns were warranted.

In online contexts, with restrictions on how students were able to interact, many tutors deemed SDs particularly important to facilitate group work and bridge spatial boundaries:

> *'…shared docs were essential for those students who were only on an online course to work collaboratively, and I think that's where they worked really successfully, where they couldn't physically meet and be in the same space. They only had the shared docs as a resource to actually co-construct together.'* ('Ruth')

This functionality was extended by some to their face-to-face practice, where certain lessons were conducted via SDs to encourage collaboration and diversify the types of interactions available to students. Although there were limited reported examples of tutors using SDs to guide an entire lesson, tutor 'Sarah' found them particularly valuable at mediating collaboration where classes were comprised of students of different ability levels:

> *'When it's in a group situation in the class with mixed ability, I found they use the shared docs quite well and they contribute to those quite well. I've noticed when they're used collaboratively and for group work, they do work really successfully where you've got mixed abilities.'*

When students were asked on the role SDs played in their collaborative work, their responses often centred on practical considerations, and their ability to streamline communication in longer-term collaborative projects. A majority of students referred to the speed, convenience and efficiency they offer their normal working patterns:

> '*Shared Documents are a great way to do projects with your peers virtually. Sometimes in the IFP, students have different schedules regarding to their subjects, and the Shared Documents really makes the process of making projects more flexible and easier.'* (S3)

While some encountered technical difficulties when employing this technology for group work, such as issues with assigning 'access rights' when sharing with peers, and occasional frustrations with the 'overwriting' of text, a majority of students demonstrated resourcefulness to use and generate their own SDs to overcome challenges when collaborating with their peers, employing a range of SD platforms beyond *MS Word* and *Google Docs*. The extract below from student interviewee 'Lucia' is representative of many students' reported experiences when using SDs on collaborative projects:

> '*We used to struggle to catch up during the poster project because most of the group members weren't there during the class, so we used to procrastinate the work until they come. So we started using the Shared Document so everyone could work individually from their home. We talked as a group, everyone got a part that that person will work on…. So it made it easier and faster for us to just work on that Shared Document and it's easy to use.'*

However, this example may also be indicative of wider concerns shared by tutors, that the apparent streamlining of interaction SDs offer could in fact hinder the intended collaborative process. The following quotes show that students greatly valued SDs' remote qualities for group projects, and appreciated the convenience of not needing to come together to plan and draft work:

> '*…excellent for group projects. The group members don't need to gather, everyone can work from wherever and whenever they want.'* (S3)
>
> *'They help us to do the work on our own time without worrying about gathering with group mates in the same time.*' (S6)

Yet some tutors questioned whether this was collaboration at all, or merely individual work mediated through a shared space. The following quotes seem to show a symmetry between tutor concerns and student working practices:

> '*On the IFP, groups often divide a task up between them so they each 'engage' with it in a sense, but don't always engage with each other in the process, which rather defeats the point of it being a Shared Document.*' (T15)
>
> '*It's like dividing the work, then each one do their part. We do that because it takes less time than doing all the work all together. So if each one had a part to do, it's easier*.' ('Alex')

By providing a shared space through which collaboration could take place remotely, tutors felt this ran the risk of work being accumulative, rather than collaborative, which limited opportunities for meaningful interaction:

> *'…perhaps we need to clarify the difference between "interaction" and "collaboration" (there is crossover of course, you have to interact to collaborate but can you interact with*

the document and in a group without probably truly "collaborating"- probably yes). So they quite often encourage interaction but not always collaboration (depending how we define this!)' (T2)

In summary, while there was clear agreement on the value SDs provided in terms of online collaboration, there was no broad consensus amongst participants on whether they helped or hindered collaboration in face-to-face contexts. Tutors felt that effective learning via SDs, whether related to collaboration or any of the main themes identified in this chapter, was highly dependent on task design and a careful attention to how these tasks are managed. Their suggestions, as well as a deeper analysis of the issues revealed in this chapter, will be reported in the following discussion.

5. Discussion

5.1 Examples of Use

The results show a general consensus on the utility of Shared Documents as a learning technology in online contexts. Here, their widespread use appeared to be geared towards maintaining the research setting's pedagogical principles and social constructivist view of learning. Whether prescribed material for a specific programme or teacher-generated material for isolated interventions, the reported examples of online SD use demonstrate Middlebeck's (2019) vision of technology's ability to maintain the 'social experience' of the classroom. Although many interviewed felt that online interaction through a document is no substitute for the spontaneous interaction of the traditional classroom, the examples of online use in the previous chapter could be argued as being in alignment with the first two stages of Puentedura's (2006) SAMR Model: *substitution* and *augmentation*. In the latter case, with technology acting as a direct substitute with functional improvement, where online activities were mediated through a SD, they provided a universal record of work, and evidence of both the process and product of learning. Unlike with traditionally distributed worksheets, tutors that employed SDs in this way were able to clarify, supplement and extend the learning that had taken place within the confines of a set lesson, and draw cohesive links from one lesson to the next.

Tutors' early experiences of SDs during the period of Emergency Remote Teaching appeared to provide them a more nuanced understanding of the capabilities of the technology, which enabled them to appropriate it in their 'schemes of use' as they returned to face-to-face teaching, and experiment with activities that moved beyond Social Annotation (Choppin et al., 2018, p.79). While it is argued that the process of adopting technology begins with teachers using 'new technology in old ways' and attempting, initially, 'to fit the new resources into established patterns of practice', there was an apparent readiness among tutor participants to utilise SDs not merely as a substitute for traditional practices, but to provide new opportunities for learning which were inconceivable without

its introduction (Reich, 2020, p.149; Choppin et al., 2018, p.83). An example of this is the expanded approach to peer review activities, which utilised SDs to harness the motivational force of observational learning. According to one senior tutor participant, this capacity of tutors to adapt their practices to match the technology seemed to be grounded in what Bergdahl, Knutsson and Fors (2018, p.109) believe is an essential step when introducing a technology to an educational context: the clear communication of the goals and vision for its use which guide and inform teacher practices.

Reich (2020, p.159) argues that 'good learning designs have low floors and high ceilings', in that they are 'easy to start working with while allowing for more complex engagement over time'. This is evident in the examples of use reported in the present study, where the relative ease of use and adaptability of SDs appeared to accelerate the transition from initial adoption to adaptation and eventual appropriation. While this may indicate they are a natural fit for those seeking to create a more social experience within online provisions, diversify their existing face-to-face curriculum resources, or guard against potential disruption similar to that caused by the COVID-19 pandemic, these decisions should not be made without taking an ecological view of the Technology Enhance Learning environment, which considers the lived realities of students when using SDs. These realities, revealed by the inclusion of students as participants in the present study, will be addressed in the following sections.

5.2 Gauging Understanding

SDs' capability for increased visibility of student work provided tutors with useful data on students' understanding, and demonstrated Lewis and Hargrove's (2020, p.94) belief that 'simply knowing there is a problem creates an opportunity to address it'. Tutors utilised this to maintain a learner-centred approach to teaching. This was seen as especially useful when teaching online, where the shared platform and design of spaces to be filled created a '*forcing function*' that encouraged students to '*discharge their responsibility*' for participation, matching the 'triggering influence' mentioned by Bergdahl, Knutsson and Fors (2018, p.107). By providing an outlet for online students to 'translate their understanding into public performance', these contributions could be channelled back into the lesson and used as a resource to enrich the learning process (Nichol and MacFarlane-Dick, 2006, p.214). The 'comment' feature of SDs, and the ability to annotate student work in real-time, was seen as particularly valuable, with tutors employing it in a wide variety of activities to provide feedback and maintain dialogue with students around their work. This aligned with a common perception that tutors were facilitators of learning, rather than transmitters of knowledge. The comment feature was a powerful online 'feedback mechanism', where tutors could intervene in a task without interrupting (Carless et al., 2011). This ensured monitoring was an active process, one which maintained a teacher presence which 'manages the environment and focuses and facilitates learning experiences' (Garrison and Kanuka, 2004, p.98).

This also appeared to add value where SDs were employed for face-to-face teaching, showing them as a useful tool to gauge understanding across different contexts. The reported uses for real-time, implicit, and delayed assessment showed the flexibility of SDs, and how they can provide tutors a variety of opportunities to utilise feedback. The ability to view student work in progress allowed tutors to support students in their responses to a task and address possible misconceptions in real-time (Badillo, Rugani and Solomon, 2020). By also allowing students to comment on their peers' contributions, tutors could view these interactions and comment on students' 'academic practice', not only the responses being generated (Laurillard, 2002). Where Social Annotation research highlighted instances where such comments could be a distracting presence for students, this was not evident in the present study, with this parallel channel of communication seen as a key value (Novak, Razzouk and Johnson, 2012). This greater visibility of work also encouraged the use of both implicit assessment, with the representative sampling of student exemplars, and delayed assessment, where student responses could be provided with targeted feedback after a task's completion. Students largely valued the ability to observe others' work, with the general consensus being that this both motivated and inspired their own work, thus aligning with Carless et al.'s (2011, p.405) assertion that these types of feedback practices 'promote students' self-regulatory capacities'. SDs also enabled 'dialogic feedback' on student work to take place asynchronously, with students provided the opportunity to reply to tutor comments in their own time. This alleviated the apparent 'terseness and finality of one-way written comments', and was seen as particularly valuable by students as they generated content for formal assignments (Carless et al., 2011, p.395).

However, tutors were also concerned with how best they could encourage students to explicitly communicate their formative thinking and address areas of uncertainty throughout a lesson, not just when output has been generated. One suggestion, provided by Lewis and Hargrove (2020) is the introduction of regular 'pause points' to a lesson, where SDs could be used as a platform to elicit responses from students which punctuate the lesson with brief moments of critical reflection. By eliciting this reflection on a SD with some rudimentary guiding questions, the tutor can be provided with an ongoing form of needs analysis, which consolidates student understanding and fosters an environment of active participation (ibid.). Similar to the 'reflective interludes' proposed by Hibbert (2013), SD-mediated pause points provide a structured opportunity to gauge understanding, and further encourage student self-monitoring (Nichol and MacFarlane-Dick, 2006, p.207). As Driggs and Brillante (2020, pp.68-9) point out, by 'inserting mileposts throughout the course of a lesson, these reference points along the route make the distance covered more visible to the travellers'. However, student concerns about exposing their weaknesses to an audience of their peers necessitate both a

careful consideration of whether student contributions in such uses of SDs are anonymised or attributed, and how the value of regular reflection can best be communicated to the students.

5.3 Effect on Communication

Based on the present findings, some functions of SDs which provide opportunities to gauge student understanding can also be employed to encourage communication. However, the results show a clear division on the perceived appropriacy of an SD intervention in this area, dependent on whether it was used online or face-to-face and for synchronous or asynchronous communication. Of all main themes identified in the present study, the perceived value of SDs to facilitate communication was most inseparably linked to the contexts of use and the individual characteristics of the students who used them.

Similar to the introduction of 'pause points' to a lesson, SDs could be used to alleviate some of the reported difficulties students encountered in synchronous online lessons when not provided with a clear means of asking questions. These examples are illustrative of the 'intra-action' of materials in Pedagogical Ergonomics research (Guerrettaz, 2021). Without an appropriate communication channel for queries and clarifications when attending an online lesson, students lacked confidence to interject, and felt they were interrupting the tutor guiding the lesson. As a result, they found that tutors would often increase their talking-time to fill the void, and interactive online lessons became one-directional transmissions of knowledge. This appeared demotivating for students, and exacerbated their apparent pre-existing reluctance to speak that several tutors saw as being a 'legacy' from their earlier ERT experiences. By introducing SDs as a platform for questions and clarifications, students can be given a clearer means of participation which can be used to encourage and harness student curiosity, and increase levels of engagement.

In terms of facilitating synchronous face-to-face communication, the results show significant resistance to the introduction of SDs, with tutor concerns echoed by the reported difficulties students encountered when communicating with their peers during SD mediated tasks. The widespread consensus that SDs became a cumbersome obstacle to verbal communication when used in a face-to-face setting was a key finding. It further demonstrated the notion of the 'intra-action' of SDs, with students often drawn to interact with the document itself rather than with their peers (Guerrettaz, 2021). At times, SDs appeared to exacerbate the reluctance to speak in less communicative students, with many routinely turning to 'the internet as a saviour' (Bergdahl, Knutsson and Fors, 2018, p.106). This reliance on technology, at the cost of social interaction, also demonstrates Baumer and Silberman's (2011) belief in the potential disruptive influence of technology on the circumstances they are meant to improve. It appears SDs are better suited as an asynchronous point of departure for

synchronous discussions, where well-considered contributions outside of the class can be used to foster communication within it. However, even in these instances, a close attention to device management is still advised, with one participant suggesting a clear 'Heads Up, Heads Down' approach, which ensured a clear delineation between when devices can and cannot be used.

While these results may indicate that the introduction of SDs to facilitate verbal communication is, at best, problematic, this is at odds with the value they provide as a channel for asynchronous communication. When discussing communicative education technology, Laurillard (2002, p.147) believed that 'the pedagogical benefits of a medium rest entirely on how successfully it maintains fruitful dialogue between the tutor and student, or between students' and, in terms of asynchronous communication, this is where SDs appear most valuable. Participants' earlier experiences of online, hybrid and asynchronous learning seemed to serve as a catalyst for an expanded view of the classroom, where learning was not limited to the confines of a set lesson. This encouraged them to utilise SDs as an additional outlet for teacher-student and student-student dialogue that could take place at times convenient to their users. The value students attributed to SDs' ability to focus asynchronous dialogue on content, rather than its creators, was another notable finding which appeared to lessen students' feelings of judgement around their work.

5.4 Collaboration, Interaction and Accumulation

The increased visibility of student output and convenience of communication which SDs provide also appear to add clear value when collaborative tasks take place online. They were seen as an essential platform for text-based collaboration in such environments, as they could be used to 'mediate and encourage social acts' between distributed students, and substitute for the collaborative practices of the classroom (Laurillard, 2013, p.195). The reported widespread use in face-to-face group projects also spoke of SDs possible utility as a complementary tool to aid collaboration in co-located settings. Where tutors employed them as a means of monitoring student progress throughout group projects, this continuous accessibility of student work provided a 'record of both activity and product' created in and around the classroom (ibid.). Bergdahl, Knutsson and Fors (2018, p.107) describe the motivational effect this has on students as 'the notion of being seen', with the shared platform of output generating accountability which ensured students remained engaged throughout a task.

While the results indicate that SDs were largely popular to aid collaboration in both online and face-to-face contexts, the minority's concerns that questioned how students used them to arrive at the end point of group projects were proven to be valid. Where students heralded the remote qualities of SDs, and their ability to add efficiency when working together, the accounts of their collaborative working processes aligned with tutors' fears that SDs were merely being used for the accumulation of

individual work, denying students the meaningful experience of true collaborative learning. As Laurillard (2013, p.188) points out, in such collaborative projects, 'while output is the principal driver of the learning cycle, the process is what makes learning happen'. This suggested a possible dissonance of task expectations between students and tutors (Kirkwood, 2009). Where students valued SDs for the ease they provided in the creation of a final product, tutors saw the steps taken to reach it, and the interaction between individuals, as equally crucial.

As with all major themes identified in the present study, it was important not just to explore what SD technology afforded collaborative work, but what students actually do with it when working together. As Laurillard (2013, p.199) argues, learning technology enables, but does not drive or ensure success. The accounts of student employment of SDs throughout the study, both synchronously and asynchronously, begin to reveal the extent to which technology is now an inseparable part of their working practices in and around the 'post-pandemic' classroom. These working practices indicate the students' clear ability to do what Kirkwood (2009, p.115) describes as a 'cost-benefit analysis' of using learning technology; weighing the benefits gained from doing a task against the 'costs incurred' in terms of time, effort and inconvenience. To accommodate this technological pragmatism, and guard against the remote accumulation of individual work in group tasks, it is crucial that the value of collaborative effort is clearly communicated to students. To ensure meaningful peer-to-peer interaction takes place, SD-enabled group tasks should be designed which encourage the 'higher order' skill of synthesising ideas in the creation of a shared product, where individuals are accountable to their teammates for their contributions, and reflections on the collaborative process accompany any assessment of a final product (Adams, 2015).

6. Conclusion

6.1 Summary

A primary aim of this study was to investigate the perceived value of Shared Documents in both online and face-to-face learning environments and ascertain where they can be best utilised as a learning technology. The results clearly demonstrate SD-technology's potential to foster effective learning experiences in the post-pandemic classroom, either, when online, as the main mode of delivery or, when face-to-face, as a companion tool to complement existing practice. Both tutor and student participants showed a willingness to leverage the opportunities provided by SDs to diversify their working practices. The essential inclusion of student participants in the present study, and the accounts of their lived realities when using SDs, provide important insights into the potential barriers to effective SD utilisation in educational contexts. The findings reveal that SDs provide most value as a learning technology when used as a flexible feedback mechanism; as a means of gauging students'

thinking-in-progress; as an alternative communication channel which can run asynchronously or in parallel to a set lesson; and as a mediating artifact in collaborative tasks and projects, provided the value of collaborative learning is clearly communicated to students. However, the findings on the negative impact of SDs on students' verbal communication, and the issue of accumulative work where collaboration was intended, are problems which must not be ignored.

6.2 Recommendations

These results hint at the legacy of students' COVID-era experiences and their influence on how they learn, which should form a key part of the decision-making process for educators seeking to introduce learning technology into the post-pandemic classroom. Educational institutions seeking to use SDs to diversify their modes of delivery must first ensure that the goals and global vision of such a decision are clearly communicated to practitioners so that there is clear alignment between the intended and actual use of the technology (Bergdahl, Knutsson and Fors, 2018). Those seeking to experiment with smaller-scale SD interventions should consider the 'intra-action' between students and SDs, and are advised to seek student feedback on these interventions in order to better track changes between lessons and variations between groups to which SDs are introduced (Guerrettaz, 2021). This can help ensure that the introduction of SDs is not merely the introduction of technology for technology's sake, but of clear pedagogical value to the needs and working realities of the students.

6.3 Predictions

My original perception of SDs has broadened through conducting this study, moving from an initial view of SDs as simple, shareable *MS Word* and *Google Docs* files to bespoke platforms such as *Padlet*, *OneNote* and *Talis Elevate,* each with their own strengths and limitations. The wealth of shareable platforms that educators can now utilise to benefit their practice hint at a greater trend of SD-like platforms playing an increased role in education moving forwards. One of the key strengths of this study was providing an equal platform for students as participants, which allowed for a direct comparison of their beliefs and lived realities with those of their tutors. Although descriptions of students as 'digital natives' can often be over-emphasised, the reports of the working practices of student participants revealed a technological pragmatism in employing digital tools to counter the various pedagogical and logistical problems they face (Rapanta et al., 2021, p.721). Middlebeck (2019) described the ongoing 'arms race' between technology and education, noting that with every leap in technology, education is chasing to catch up. SDs are a simple means of leveraging the increased role technology plays in so many students' working lives. One senior participant (a Programme Co-ordinator) revealed their vision for the future use of SDs within Higher Education, wherein they could serve as a platform for large-scale 'interactive lectures' which move away from the traditional

transmission of content, and utilise the functionality of SDs to integrate student output and enrich the lecture experience overall. Notably, at the time of writing, the Social Annotation tool *Talis Elevate* is being rolled-out to aid the instructional practices of tutors within the university where the present study took place, with a view to accommodating such blended approaches to education in future programmes.

6.4 Limitations

As an investigation into an emerging technology, the present study was reliant on participants who had consistent experience of using SDs in an educational setting, which resulted in a relatively small sample size which does affect the generalisability of the findings. While the inclusion of international students was intended to harness their diversity of previous learning experiences during the pandemic, these students are not representative of other age-groups and stages of academic development. Moreover, the educational content of lessons under discussion was primarily English for Academic Purposes. As EAP practice, and language pedagogy as a whole, is 'broadly about doing' and strongly influenced by social constructivist views of learning, this may have affected the particular attention paid to *communication*, *interaction* and *collaboration* across the data set (Guerrettaz, 2021, p.40). It is unclear whether these findings would be replicated if similar interventions took place in contexts where the teacher-centred transmission of content is more valued, and/or over a broader range of subjects. Furthermore, having taken a semantic approach to Thematic Analysis, the present study was wholly reliant on the reported experiences and beliefs of participants, and so lacked observational data on specific interventions which could have provided greater detail than mere anecdotal evidence.

6.5 Implications for future research

In order to better understand SDs' value as a learning technology, the present study has considered their application in a range of TEL environments, including online and face-to-face contexts, and both synchronous and asynchronous uses. It could, therefore, serve as a point of departure for more detailed investigations into the nuances of SD use in each of these distinct areas. However, as the post-pandemic classroom appears an environment which is in some way connected to all of these areas, it may be more fruitful if future research limits its focus to one of the main themes of *gauging understanding*, *effects on communication*, or *collaborative learning*. In either case, to test the generalisability of these findings across different target groups, a longitudinal study based on a triangulation between observations of interventions and tutor and student reflections is advised. This would bring together objective and subjective data, leading to a fuller picture of the 'opportunity cost' of a SD's introduction (Flick, 2018, p.542). Furthermore, as peer-peer interaction was a central theme

influencing many of the perceptions of SD use, the 'dialogic approach' to materials investigation found in research related to Computer Support Collaborative Learning, which analyses student interactions in and around a mediating technological platform, could better reveal the 'intra-action' of SD use, and the decisions students make as they interact with SDs to meet a learning outcome (Ludvigsen and Mørch, 2010; Guerrettaz, 2021). This could provide further valuable data on what students *do* with the technology, not merely what it enables, and deepen our understanding of the pedagogical implications of its continued use as a learning technology in the post-pandemic classroom.

7. References

Adams, N.E., 2015. Bloom's taxonomy of cognitive learning objectives. *Journal of the Medical Library Association: JMLA*, 103(3), pp.152-153.

Badillo, E., Rugani, J., and Solomon, H., 2020. Accountability Loops and Checking for Understanding. In: D. Lemov. ed. 2020. *Teaching in the online classroom: Surviving and thriving in the new normal*. Oxford: John Wiley & Sons. pp. 99-123.

Baumer, E.P. and Silberman, M.S., 2011,. When the implication is not to design (technology). In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* pp. 2271-2274.

Bergdahl, N., Knutsson, O. and Fors, U., 2018. Designing for Engagement in TEL - A Teacher-Researcher Collaboration. *Designs for Learning*, 10(1), pp.100-111.

Bond, M., and Bedenlier, S., 2019. Facilitating Student Engagement Through Educational Technology: Towards a Conceptual Framework. *Journal of Interactive Media in Education*, 2019(1): 11, pp. 1–14.

Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., and Kerres, M., 2020. Mapping Research in Student Engagement and Educational Technology in Higher Education: A Systematic Evidence Map. *International Journal of Educational Technology in Higher Education*. 17(1), pp.1-30.

Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), pp.77-101.

Braun, V. and Clarke, V., 2013. *Successful Qualitative Research.* London: SAGE

Carless, D., Salter, D., Yang, M. and Lam, J., 2011. Developing sustainable feedback practices. *Studies in higher education*, 36(4), pp.395-407.

Chen, M., 2022. Digital affordances and teacher agency in the context of teaching Chinese as a second language during COVID-19. *System*, p.102710.

Choppin, J., McDuffie, A.R., Drake, C. and Davis, J., 2018. Curriculum ergonomics: Conceptualizing the interactions between curriculum design and use. *International Journal of Educational Research*, 92, pp.75-85.

Christodoulou, D., 2020. *Teachers vs Tech?: The case for an ed tech revolution.* Oxford: Oxford University Press-Children.

Davis, M.L., Witcraft, S.M., Baird, S.O. and Smits, J.A., 2017. Learning principles in CBT. In: S., Hofman and G., Asmundson, eds. *The science of cognitive behavioral therapy,* . Cambridge: Academic Press.

Driggs, C., and Brillante, J., 2020. Culture of Attention and Engagement. In: D., Lemov. ed. 2020. *Teaching in the online classroom: Surviving and thriving in the new normal*. Oxford: John Wiley & Sons. pp.56-79.

Flick, U., 2018. Triangulation in Data Collection. In: U., Flick. ed. 2018. *The SAGE Handbook of Qualitative Data Collection*. London: SAGE. pp.527-544.

Garrison, D., and Kanuka, H., 2004. Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7(2), pp.95-105.

Guerrettaz, A.M., 2021. Materials-in-action: Pedagogical ergonomics of a French-as-a-foreign-language classroom. *The Modern Language Journal*, *105*(S1), pp.39-64.

Hamilton, E.R., Rosenberg, J.M. and Akcaoglu, M., 2016. The substitution augmentation modification redefinition (SAMR) model: A critical review and suggestions for its use. *TechTrends*, 60(5), pp.433-441.

Hibbert, P., 2013. Approaching reflexivity through reflection: Issues for critical management education. *Journal of Management Education*, 37(6), pp.803-827.

Kalir, J.H., Morales, E., Fleerackers, A. and Alperin, J.P., 2020. "When I saw my peers annotating": Student perceptions of social annotation for learning in multiple courses. *Information and Learning Sciences*, *121*(3/4), pp.207-230.

Kirkwood, A., 2009. E-learning: you don't always get what you hope for. *Technology, Pedagogy and Education*, 18(2), pp. 107–121.

Kling, R., 2007. What is social informatics and why does it matter?. *The Information Society*, *23*(4), pp.205-220.

Knox, J., 2019. What does the 'postdigital' mean for education? Three critical perspectives on the digital, with implications for educational research and practice. *Postdigital Science and Education*, 1(2), pp.357-370.

Laurillard, D., 2002. *Rethinking university teaching: A conversational framework for the effective use of learning technologies*. Oxford: Routledge.

Laurillard, D., 2013. *Teaching as a design science: Building pedagogical patterns for learning and technology.* Oxford: Routledge.

Lewis, H., and Hargrove, B., 2020. Pause Points. In *Teaching in the online classroom: Surviving and thriving in the new normal*. John Wiley & Sons. pp. 81-98.

Ludvigsen, S. and Mørch, A., 2010. Computer-supported collaborative learning: Basic concepts, multiple perspectives, and emerging trends. *The international encyclopedia of education*, 5, pp.290-296.

Maxwell, J., 2018. Collecting Qualitative Data: A Realist Approach. In: U., Flick. ed. 2018. *The SAGE Handbook of Qualitative Data Collection*. London: SAGE. pp.19-32.

Mendenhall, A. and Johnson, T. E., 2010. Fostering the development of critical thinking skills, and reading comprehension of undergraduates using a Web 2.0 tool coupled with a learning system. *Interactive Learning Environments*, 18(3), pp.263–276.

Middlebeck, D., 2019. Reinventing education for the digital age. TEDxMünster. [online] Available at: <https://www.ted.com/talks/david_middelbeck_re_inventing_education_for_the_digital_age> [Accessed 5 May 2022].

Monke, S., 2007. The expert interview as a method of qualitative social research. *Grin,* [blog] ND. Available at: <https://www.grin.com/document/1158768> [Accessed 3 August 2022].

Morgan, D., and Hoffman, K., 2018. Focus Groups. In: U., Flick. ed. 2018. *The SAGE Handbook of Qualitative Data Collection*. London: SAGE. pp.251-263.

Mueller, P.A. and Oppenheimer, D.M., 2014. The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. *Psychological science*, *25*(6), pp.1159-1168.

Nicol, D.J. and Macfarlane-Dick, D., 2006. Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in higher education*, 31(2), pp.199-218.

Nokelainen, P., Kurhila, J., Miettinen, M., Floréen, P. and Tirri, H., 2003, July. Evaluating the role of a shared document-based annotation tool in learner-centered collaborative learning. In *Proceedings 3rd IEEE International Conference on Advanced Technologies.* IEEE. pp. 200-203.

Nokelainen, P., Miettinen, M., Kurhila, J., Floréen, P. and Tirri, H., 2005. A shared document-based annotation tool to support learner-centred collaborative learning. *British Journal of Educational Technology*, *36*(5), pp.757-770.

Novak, E., Razzouk, R. and Johnson, T.E., 2012. The educational use of social annotation tools in higher education: A literature review. *The Internet and Higher Education*, 15(1), pp.39-49.

Puentedura, R., 2006. Transformation, technology, and education. *Hippasus,* [blog] 18 August. Available at: <http://hippasus.com/resources/tte/> [Accessed 8 June 2022].

Puentedura, R., 2014. Learning, technology, and the SAMR model: Goals, processes, and practice. Hippasus, [blog] 29 June. Available at: <http://www.hippasus.com/rrpweblog/archives/2014/06/29/LearningTechnologySAMRModel.pdf> [Accessed 8 June 2022].

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L. and Koole, M., 2021. Balancing technology, pedagogy and the new normal: Post-pandemic challenges for higher education. *Postdigital Science and Education*, *3*(3), pp.715-742.

Reich, J., 2020. The Curse of the Familiar. In *Failure to Disrupt*. Cambridge, MA: Harvard University Press. pp.148-168.

Roulston, K. and Choi, M., 2018. Qualitative Interviews. In: U., Flick. ed. 2018. *The SAGE Handbook of Qualitative Data Collection*. London: SAGE. pp.233-259

Silverman, D., 2014. *Interpreting Qualitative Data*. 5th ed. London: SAGE

Solomon, H., and Verrilli, B. 2020. Synchronous and Asynchronous Learning. In: D. Lemov. ed. 2020. *Teaching in the online classroom: Surviving and thriving in the new normal*. Oxford: John Wiley & Sons. pp. 15-35.

Sørensen, E., 2009. *The materiality of learning: Technology and knowledge in educational practice*. Cambridge: Cambridge University Press.

van Leeuwen, A., Janssen, J., Erkens, G. and Brekelmans, M., 2013. Teacher interventions in a synchronous, co-located CSCL setting: Analyzing focus, means, and temporality. *Computers in Human Behavior*, 29(4), pp.1377-1386.

Wertsch, J.V. ed., 1986. *Culture, communication, and cognition: Vygotskian perspectives*. Cambridge: Cambridge University Press Archive.

Appendices

Appendix 1: Participant Tutor Details

Pseudonym	Tutor role and characteristics	
Katie	**EAP Tutor**	*3+ years' experience in role at the Research Setting*
	Contributes to the delivery of a range EAP units, across various EAP programmes at the research setting. Collaborates in the design and development of the Centre's materials, assessment and CPD under supervision from various Subject Leads and Course Co-ordinators.	
Ben	**EAP Tutor**	*8 years' experience in role at the Research Setting*
	Contributes to the delivery of a range EAP units, across various EAP programmes at the research setting. Collaborates in the design and development of the Centre's materials, assessment and CPD under supervision from various Subject Leads and Course Co-ordinators.	
Marina	**EAP Tutor**	*12 years' experience in role at the Research Setting*
	Contributes to the delivery of a range EAP units, across various EAP programmes at the research setting. Collaborates in the design and development of the Centre's materials, assessment and CPD under supervision from various Subject Leads and Course Co-ordinators.	
Lucas	**EAP Tutor**	*1 years' experience in role at the Research Setting*
	Contributes to the delivery of a range EAP units, across various EAP programmes at the research setting. Collaborates in the design and development of the Centre's materials, assessment and CPD under supervision from various Subject Leads and Course Co-ordinators.	
John	**EAP Tutor**	*1 years' experience in role at the Research Setting*
	Contributes to the delivery of a range EAP units, across various EAP programmes at the research setting. Collaborates in the design and development of the Centre's materials, assessment and CPD under supervision from various Subject Leads and Course Co-ordinators.	
Victoria	**Subject Lead**	*5+ years' experience in role at the Research Setting*
	Responsible for the design of specified EAP courses, materials and assessments at the research setting, in close conjunction with a Programme Co-ordinator. Also responsible for teaching and related duties on these and other course	
Peter	**Programme Co-ordinator**	*10+ years' experience in role at the Research Setting*
	Responsible for the organization, delivery, design, and development of a programme within the research setting. This programme contains 20+ discipline specific strands with connections to numerous academic schools across the wider university.	
Ruth	**Programme Co-ordinator**	*7+ years' experience in role at the Research Setting*
	Responsible for the organization, delivery, design, and development of several programmes within the research setting, with both EAP and subject-specific sub-units.	
Sarah	**Programme Co-ordinator**	*5+ years' experience in role at the Research Setting*
	Responsible for the organization, delivery, design, and development of a programme within the research setting, with various EAP-specific sub-units.	

(Source: *Adapted from internal role descriptions at the Centre for Academic Language and Development, University of Bristol, 2022*)

Appendix 2: Participant Student Details

Student Interview Participants

Pseudonym	Gender	Country of Origin	Age	IELTS overall	IELTS Listening	IELTS Reading	IELTS Writing	IELTS Speaking	Degree choice - at application stage
Clarke	M	China	20	5.5	6	5.5	5.5	5.5	BEng (Hons) Civil Engineering
Lucia	F	Taiwan	24	6.5	7.5	6	5.5	7	BVSc Veterinary Science
Christian	M	Saudi Arabia	18	6.5	7.5	6.5	5.5	6	BSc (Hons) Geophysics
Alex	M	Kuwait	19	6.5	8	6.5	5.5	6.5	BSc (Hons) Geophysics
Rita	F	Saudi Arabia	19	7	6.5	7	7	7	BSc (Hons) Geophysics

(IELTS – International Language Testing System)

Grades indicate students IELTS attainment prior to enrolment at the International Foundation Programme at the research setting.

Appendix 3: Online Tutor Survey

The purpose of this survey is to gather your views on a specific online tool that has been widely utilised during the current academic year: Shared Documents. This tool provides educators with significant flexibility in their teaching practice, with its collaborative functionality enabling students and teachers to interact remotely, in both synchronous and asynchronous contexts. There have been increasing calls for a wider implementation of Shared Documents in our face-to-face teaching. However, I feel it is important to hold this technology to account, and a deeper investigation into its value is warranted. My research aims to explore our attempts to balance technology, pedagogy, and the 'new normal' of teaching, and how earlier online experiences have influenced our current face-to-face teaching practice. Before completing the survey, please ensure you have read and completed the Participant Information Sheet and Participant Consent Form. Thank you for your participation!!

1. In what ways do you employ Shared Documents in your current teaching practice at the Centre?
2. Do you feel they have any advantages over traditional, individually distributed worksheets? Why? Why not?
3. What were the main motivating factors for you to adopt this technology as part of your current teaching practice?
4. How well do your students engage with the Shared Documents you employ in your teaching?
5. In what ways can Shared Documents encourage student collaboration?
6. What effects do they have on student-student and teacher-student dialogue?
7. Do they offer any benefits in the ways we provide feedback to students?
8. What challenges have you encountered when employing this technology in your teaching practice?
9. Should Shared Documents play a greater role in our face-to-face teaching at the Centre? Why? Why not?
10. Would you be willing to be contacted regarding possible participation in a later focus group / interview to discuss some of your ideas in more detail? If so, please add your initials below.

Appendix 4: Online Student Survey

The purpose of this survey is to gather your thoughts and opinions on using a specific online tool we have used to aid your EAP learning during the current academic year: ***Shared Documents***. Examples of these include the *Assessment Reference* and *Planning Documents*, *Tutorial Q&A documents*, and Collaborative 'Shared' versions of your *Workshop Worksheets*.

This survey is not an assessment of your learning, nor an evaluation of the EAP units where you have used Shared Documents, but instead an investigation into your *experiences* of using them in and out of the classroom.

The information gathered through this survey will help me understand how Shared Documents can be used most effectively to benefit learning, as well as identifying areas that pose difficulties for students. Therefore, it will focus on their *Strengths*, *Weaknesses*, *Opportunities for learning* and *Challenges of use*.

When completing the survey, try to provide reasons for your answers and justify your answers where possible.

All responses will be anonymous. Please ensure you have read and completed the *Participant Information Sheet* before completing the survey.

Thank you for your participation!

1. How much did you engage with the Shared Documents that were used in your EAP Units this year? Consider your engagement both in and out of the classroom.
2. What would encourage you to contribute more to the types of Shared Documents we have used this year?
3. Do you feel they have any advantages over traditional, individual worksheets? Why? Why not?
4. Do you feel confident communicating things you do not understand on the Shared Documents? Why / Why not?
5. How did you use Shared Documents to collaborate with your classmates this year? What support did they provide and what challenges did you face?
6. How do you think this online tool can help develop communication with a) your tutors and b) your classmates? Consider communication both in and out of the classroom.
7. In addition to normal channels of Feedback (Turnitin, tutorials etc), how effective do you think Shared Documents could be to provide feedback on your work? Consider both tutor and peer feedback.

Appendix 5: Tutor Focus Group Questions

Focus Group Questions
1. To what extent have your recent online teaching experiences influenced your on-campus teaching? - *Have you noticed differences in student behaviour / engagement due to their experiences of online learning during the pandemic?*
2. What are your experiences of using and designing Shared Documents as a teaching resource? - *Did you mainly use them as a synchronous or asynchronous resource, or a combination of both?* - *Did you engage with student contributions to Shared Documents outside of the classroom?*
3. Do Shared Documents offer certain teaching/learning affordances which individually distributed materials do not? - *Are there certain tasks which Shared Docs lend themselves toward as a resource / teaching material?* - *How do you feel Shared Docs can be used to check for understanding?*
4. Do you feel the constant presence of laptops is a threat to traditional forms of dialogue in the classroom? Are there any ways which they can encourage dialogue (i.e. student-student or teacher-student dialogue)?
5. The need for greater student accountability was a key theme in the early Tutor Survey responses on the use of Shared Documents. How could this be better realised in their design / delivery?
6. Have you encountered any meaningful student collaboration via the Shared Documents you have used this year?
7. Is there anything you would like to add on the use of Shared Documents in the classroom which has not been covered by the previous questions?

Appendix 6: Tutor Interview Questions

Tutor Interview Questions
1. To what extent have your recent online teaching experiences influenced your on-campus teaching? - *Have you noticed differences in student behaviour / engagement due to their experiences of online learning during the pandemic?*
2. What are your experiences of using and designing Shared Documents as a teaching resource? - *Did you mainly use them as a synchronous or asynchronous resource, or a combination of both?* - *Did you engage with student contributions to Shared Documents outside of the classroom?*
3. Do Shared Documents offer certain teaching/learning affordances which individually distributed materials do not? - *Are there certain tasks which Shared Docs lend themselves toward as a resource / teaching material?* - *How do you feel Shared Docs can be used to check for understanding?*
4. Do you feel the constant presence of laptops is a threat to traditional forms of dialogue in the classroom? Are there any ways which they can encourage dialogue (i.e. student-student or teacher-student dialogue)?
5. The need for greater student accountability was a key theme in the early Tutor Survey responses on the use of Shared Documents. How could this be better realised in their design / delivery?
6. Have you encountered any meaningful student collaboration via the Shared Documents you have used this year?
7. What types of adaptations do you make to Shared Documents when using them in a lesson? What motivates these changes?
8. Have you or your students experienced any technical issues when using Shared Documents? If so, how did you overcome them?
9. Do you favour any other online tools in your teaching practice which offer similar affordances? What advantages do they offer compared to Shared Documents?
10. Is there anything you would like to add on the use of Shared Documents in the classroom which has not been covered by the previous questions?

Appendix 7: Student Interview Questions

Student Interview Questions
1. How important is technology to the way you learn? - *Do you feel the pandemic has had any effect on the way you learn?*
2. Do you feel confident communicating things you do not understand on the Shared Documents? - *What would give you more confidence to contribute things you do not understand in these shared spaces?* - *Do you feel that what you write on the Shared Documents has to be 'correct'?*
3. In addition to the normal channels of Feedback (Turnitin, tutorials etc), how useful have Shared Documents been as a way of receiving and providing feedback on your work?
4. Do Shared Documents have any advantages over traditional, individually distributed worksheets? - *What learning activities do you think Shared Documents are particularly useful for? (e.g. Peer Review, Group Projects, Sample Analysis etc)*
5. What effect does the use of Shared Documents have on communication with a) your tutors and b) your classmates? - *How could Shared Documents be used to encourage more interaction between students?*
6. How did you use Shared Documents to collaborate with your classmates this year? What support did they provide and what challenges did you face? - *Are Shared Documents a useful way of encouraging student collaboration?* - *Did you create any of your own shared spaces to collaborate with your peers?*
7. Do you feel the use of laptops & technology by students should be more carefully managed by teachers? Why / Why not? - *Can you think of any other online tools that teachers should use in the classroom? What would they add to the learning experience?* - *To what extent does the appearance of a learning resource, such as Shared Documents, affect the amount you engage with it? Should the materials be more creative in their design?*

Appendix 8: Participant Information Sheet and Consent Form (Staff)

Participant Information Sheet (Staff)

Who is the researcher and what is the research about?
My name is Thomas Willis-Jones and I'm a master's student at Anglia Ruskin University, and an EAP Tutor at the Centre for Academic Language and Development (CALD) at the University of Bristol. This research study is to be presented as a dissertation on 16 September 2022 as part of my MA Applied Linguistics and TESOL.

My research aims to investigate your perceptions, and those of our students, on the use of Shared Document technology to facilitate learning in the 'post' pandemic classroom. I'm curious to learn more about how you use this technology in your teaching; be that on campus, online, synchronously or asynchronously, and whether calls for its wider integration into our materials is warranted

What type of data are being collected?
As tutor and student perceptions of these learning resources are at the centre of this research, the data collected will be comprised of your views and opinions on their first widespread implementation during the current academic year, and other instances where you have employed this delivery mode.

I would, therefore, like to invite you to complete an initial *pulse survey* to share your views. There will also be a later opportunity to dig deeper into your experiences in a Focus Group/Interview via Teams, with these discussions recorded and transcribed for data analysis.

Who is being asked to participate?
CALD Programme Coordinators, EAP Tutors and EAP Teachers who have designed or taught via Shared Documents this year.

In addition, IFP students will be asked to volunteer some of their views on the use of Shared Documents throughout the current IFP year.

Will I be identifiable?
All data collected via the recording and transcription of the Focus Groups and Interviews will be anonymised. Furthermore, any personally identifying information that is mentioned during these periods of data collection will be redacted to protect the anonymity of participants.

Are there any risks involved?
I do not anticipate any risks to participants during the process of this research. I, the researcher, will hold all information and data collected securely and in confidence. All efforts will be made to ensure that you cannot be identified as a participant in the study. Neither your data nor your participation will be used for evaluative purposes within CALD.

Right to refuse or withdraw

This participation is completely voluntary. There is no obligation to take part if you do not want to and can decide not to answer any of my questions. Furthermore, if you change your mind about your participation and the use any of your data, you can contact me at any time from now until July 31st (after which I will begin the final writing up process of the dissertation).

Right to ask questions or report concerns

You can ask me about this research study before, during and after this research is completed and I will be happy to answer your questions. You can contact me at any time by email tom.willis-jones@bristol.ac.uk. An ongoing record of the research in progress can be found via the *Research in Progress* page of the *grp-CALD-CPD Sharepoint* site: [redacted]. A summary of the results of this study can also be sent to you upon request.

If you have any concerns about your rights as a research participant, or if you have a complaint, you may contact

- my research supervisor at Anglia Ruskin University, [redacted]
  and/or
- the Deputy Director of CALD, [redacted]

It is your choice to decide whether or not to take part. If you do decide to take part, you will be able to keep a copy of this Participant Information Form and you should indicate your agreement by signing the attached Participation Consent Form. You can still withdraw at any time. You do not have to give a reason.

Important Information

Until the research process is finished, and the dissertation is complete, all data from recordings and transcriptions will be stored on a password-protected USB drive, where it will be deleted after 3 months. No recordings will be published.

Participation Consent Form (Teacher)

I confirm that I have been given, read and understood the information form for the above-mentioned study and have asked and received answers to any questions raised.

I give my consent to participate in this research on the use of Shared Documents in the post-pandemic classroom. I understand that I am participating in the research on a voluntary basis, and I am free to withdraw at any time before July 31st without giving a reason.

I understand that the researcher (Thomas Willis-Jones) will hold all information and data collected securely and in confidence that all efforts will be made to ensure that I cannot be identified as a participant in the study, and I give permission for the researcher (Thomas Willis-Jones) to hold relevant personal data.

I understand that my data and participation will not be used for any other evaluative purposes within the Centre for Academic Language and Development (CALD) at the University of Bristol.

Name: ……

Signature: ……

Date: ……

Signature of researcher:

If you have any questions about this research, please contact:

Thomas Willis-Jones (EAP Tutor)
[redacted]

Tel: [redacted]
Email: tom.willis-jones@bristol.ac.uk

Appendix 9: Participant Information Sheet and Consent Form (Students)

Participant Information Sheet (Students)

Who is the researcher and what is the research about?
My name is Thomas Willis-Jones and I'm a master's student at Anglia Ruskin University, and an EAP Tutor at the Centre for Academic Language and Development (CALD) at the University of Bristol. This research study is to be presented as a dissertation on 16 September 2022 as part of my MA Applied Linguistics and TESOL (Teaching English to Speakers of Other Languages).

My research is focussed the use of Shared Documents and how they help facilitate learning in our English for Academic Purposes (EAP) teaching at CALD. My research will focus on student and teacher perceptions on the use of Shared Documents, and will investigate how they help to motivate discussion, collaboration and provide feedback for students.

What type of data are being collected?
My research is focussed on gathering your views and opinions about the use of Shared Documents as a learning resource at CALD, and how they can be better used to improve your learning. Therefore, data will be collected via two phases. Firstly, anonymous online surveys, followed by a second phase voluntary interviews with individuals and a single focus group (a small group interview). Participation in the survey does not require participation in the focus group or interview.

In order to record your views and opinions, interviews and focus groups will be recorded and transcribed for data analysis. These will be conducted either face-to-face or via Microsoft Teams, at the convenience of participants.

Who is being asked to participate?
Volunteers from IFP groups which have regularly engaged with different types of Shared Documents (both as part and in addition to face-to-face Workshops) during the current academic year.

Furthermore, a range of CALD colleagues, including EAP Tutors and Programme coordinators will be asked to participate to share their views and opinions on our use of Collaborative Online Documents.

Do you have to participate?
Absolutely not. Participation in this research is completely voluntary. This means that there is no obligation to take part if you do not want to. You can decide not to answer any of my questions if you do not wish to do so.

How will this affect your studies?
The decision to participate in this research will have absolutely no effect on your grades or progression to a future degree at the University. Similarly, the decision to *not* take part will have no effect on your grades or progression to a future degree. All participation in the research is voluntary.

Furthermore, the date and time of the interviews and focus groups that contribute to this research will be arranged at a time convenient to you, in order to minimise the impact on your ongoing studies at the university.

Will I be identifiable?

All survey responses will be anonymous and you will not be identifiable from your responses. All data collected via the recording and transcription of the Focus Groups and Interviews will be anonymised. This means that no personally identifying information will be recorded. Anything that is mentioned by participants that may identify you during these periods of data collection will be removed from the data to protect the anonymity of participants.

Are there any risks involved?

I do not anticipate any risks to participants during the process of this research. I, the researcher, will hold all information and data collected securely and in confidence. All efforts will be made to ensure that you cannot be identified as a participant in the study. Neither your data nor your participation will be used for evaluative purposes within CALD.

Right to refuse or withdraw

If you agree to participate but later change your mind about your participation or the use any of your data, you can contact me at any time from now until July 31st (after which I will begin the final writing up process of the dissertation).

Right to ask questions or report concerns

If you would like to know more about this research study before, during and after it is completed, I will be happy to answer your questions. You can contact me at any time by email [redacted]. A summary of the results of this study can also be sent to you upon request.

It is your choice to decide whether or not to take part. If you do decide to take part, please indicate your agreement by signing the attached Consent Form. Please keep this Participant Information Form to remind yourself of your rights as a research participant. You can still withdraw at any time. You do not have to give a reason.

Important Information

Until the research process is finished, and the dissertation is complete, all data from recordings and transcriptions will be stored on a password-protected USB drive, where it will be deleted after 3 months. No recordings will be published.

Participation Consent Form (Students)

I confirm that I have been given, read and understood the Information Form for the above-mentioned study and have asked and received answers to any questions raised.

I give my consent to participate in research on the use of Shared Documents in English for Academic Purposes (EAP) units at the University of Bristol. I understand that I am participating in the research on a voluntary basis, and I am free to withdraw at any time before July 31st without giving a reason.

I understand that the researcher (Thomas Willis-Jones) will hold all information and data collected securely and in confidence that all efforts will be made to ensure that I cannot be identified as a participant in the study, and I give permission for the researcher (Thomas Willis-Jones) to hold relevant personal data.

I understand that my data and participation will not be used for any other evaluative purposes within the Centre for Academic Language and Development (CALD) at the University of Bristol.

Name: ……

Signature: ……

Date: ……

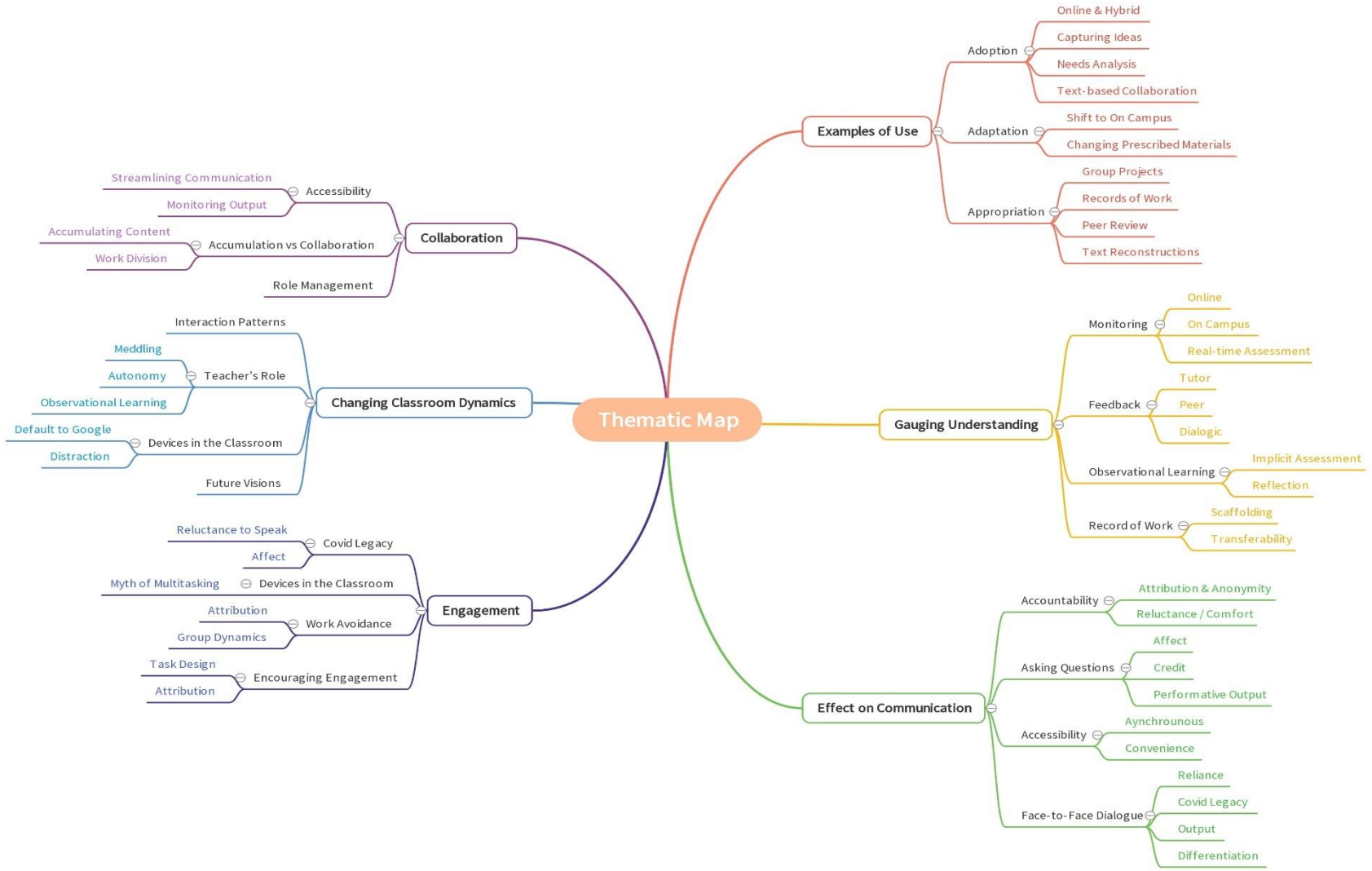
Signature of researcher:

If you have any questions about this research, please contact:

Thomas Willis-Jones (EAP Tutor)
[redacted]

Email: tom.willis-jones@bristol.ac.uk

Appendix 10: Candidate Thematic Map



Appendix 11: Sample page of Thematic Coding

Sub-theme: Observing Others' Work

<Files\\Edited Student Research Interview 5_2022-05-05> - § 4 references coded [5.68% Coverage]

Reference 1 - 2.09% Coverage

Yeah, I definitely feel more confident asking questions on a Padlet or a shared document than in an online lecture because, as I mentioned earlier, I'm afraid that I'm asking in the wrong time. As in, when I'm asking in a shared document, it's accessible to everyone and everyone can answer my question as soon as they see it, so I'm not interrupting anyone. So yeah, I think it's way better to ask… to have, like, a space where we can ask on a shared document.

Reference 2 - 1.50% Coverage

Yeah, because sometimes when I download the individual worksheet, I just, like, make mental notes instead of typing things out while when it's in a shared document, I get inspired by my peers' answers, and it just encourages me to be more creative and answer the questions on the document instead of just like taking a mental note.

Reference 3 - 1.71% Coverage

Yeah, absolutely. Yeah. Yeah. I believe shared documents have provided me plenty of feedback, whether it's from a tutor or a like a peer feedback because as I mentioned in my reflective essay that students are more prone to make the same mistakes. So when you receive peer feedback, they might have done the same mistake so it's nice to have their opinion on what I've written.

Reference 4 - 0.37% Coverage

Oh, I have definitely benefited from the feedback that you gave to other students.

<Files\\Final Student Survey Results> - § 18 references coded [9.58% Coverage]

Reference 1 - 0.28% Coverage

2	Maybe 80%, sometimes, when I face some confusion, I have a chance to find a matched example.

Reference 2 - 0.66% Coverage

15	I feel the Shared Documents were useful during in and out of the classroom because it is a space to share information from the tutor and peer idea, which made me use a lot of during the term.

Reference 3 - 0.36% Coverage

14	The information and update on time from the tutor. The most useful thing in the Shared Document is the shared idea and would have motivation from the others.

Declaration

A Major Project/Dissertation in partial fulfilment of the requirements of Anglia Ruskin University for the degree of Master of Applied Linguistics and TESOL

'*A problem shared…*': *The use of Shared Documents in the post-pandemic classroom.*

Thomas Willis-Jones
Student ID: 2031329

I understand that the piece of work submitted will be considered as the final and complete version of my assignment of which I am otherwise the sole author. I understand both the meaning and consequences of plagiarism and that my work has been appropriately attributed unless otherwise stated. I have not knowingly allowed another to copy my work. I am unable to add to or amend any work once it has been submitted.

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree.

This work contains material that is the copyright property of others which cannot be reproduced without the permission of the copyright owner. Such material is clearly identified in the text.

Conflict of Interest: The author declares no competing interests