

A Digitally Enabled Learning Approach to Understanding Social Media Interface Design

Artifact Report

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1. Introduction

This paper investigates the potential of digitally enabled learning to allow adolescents to explore their digital literacy concerning the comprehension of social media interface design. Digitally enabled learning is defined as 'learning that is enabled through digital media, tools or technology' (Walsh, 2014). This approach will enable adolescents to explore and reflect on their choices concerning their social media use, through understanding aspects of social media interface design that may impact these choices. This includes topics such as design mechanisms that are meant to cause behaviour change, social media algorithms and the 'filter bubble' effect, and the motivations of social media companies. These aspects are explored through an online learning tool that is designed to be used in a classroom setting.

To achieve this, the Double Diamond design approach will be employed as a means of iterative and participatory inquiry to explore the role of digitally enabled learning in this area. The following research questions will be addressed:

1. What factors influence adolescents' digital literacy?
2. What factors influence adolescents' satisfaction with online learning?
3. In what ways can learning about UX design improve digital literacy?
4. To what extent can UX design practice elicit unique (tacit) perspectives on adolescents' use of digital technology?
5. What role do Social Constructivism, Service Design, and Learning Experience Design play in developing an online learning platform?

Semi-structured interviews were conducted with Secondary School Headteachers to conduct primary research. Primary and secondary research and used to inform information architecture of a prototype, which was then developed into a working interactive prototype. Furthermore, this report will discuss recommended further research and other design solutions that could contribute to a more comprehensive educational approach.

1.1 Background and Context

The effects of social media usage on mental wellbeing, particularly among adolescents, is a widely debated topic, and the concept of "Screen Time" - the amount of time spent on screens daily - has been a critical point of discussion (Weinstein, 2017). However, it is essential to note that this debate often fails to consider the issue's nuances, instead oversimplifying it to convince people of a particular perspective (Weinstein, 2017). This is despite the fact that research has shown that the link between social media usage and mental wellbeing is small and negative (Orben, 2022). This can be attributed to imprecise language in research (Orben, 2022), which often fails to capture the full scope of the situation. As such, it is essential to be aware of the issue's complexities rather than relying on broad generalisations. When these complexities are explored, studies indicate that certain elements, such as the capacity to connect, share, learn, and be authentic online, can have a beneficial effect on mental wellbeing; on the other hand, overusing filters, feeling excluded from others' activities on social media, and experiencing instant gratification from likes and comments can have a detrimental effect (Granic et al., 2020; Hodes & Thomas, 2021). Moreover, it is essential to note that the use of social media can have a different impact on different individuals depending on their circumstances and the platform and context of its usage (Przybylski & Weinstein, 2017).

Research has also determined that moderate screen time is advantageous for adolescents, known as the 'Goldilocks Hypothesis.' This hypothesis suggests that adolescents should adhere to an optimal amount of screen time, not too much or too little. Too little access to or engagement with screen time and social media can negatively impact their development by limiting their ability to interact with peers. Therefore, it is imperative to ensure that adolescents have some access to and engagement with social media, as it can benefit their growth and wellbeing (Przybylski & Weinstein, 2017).

This is demonstrative of a gap between popular debate and research around screen time and social media use. This is contributed to and further complicated by the prevalence of sensationalism, making it difficult to find reliable sources (Barthorpe et al., 2020). This oversimplification surrounding the impact of social media on mental wellbeing and a disconnect between public opinion and research findings suggests that there is a lack of understanding of how social media works, particularly in terms of interface design - what it is designed to do, why, and to what end. This demonstrates a need for greater education about the User Experience (UX) Design of social media platforms as part of Digital Literacy education. The UK Government has attempted to tackle this through the Online Media Literacy Strategy, which defines digital literacy as the ability to critically engage with and make informed decisions in the digital world (*Online Media Literacy Strategy*, 2021). This is often related to the psychological implications of behaviour change

mechanisms used on social media – design aspects meant to change user behaviour and keep them on platforms longer (*Online Media Literacy Strategy*, 2021). However, this document does not provide any solutions or educational resources. Therefore, further research and design projects are necessary to investigate potential solutions, which is what this paper explores

2. Social Media And Digital Literacy: A Headteacher's Perspective

2.1 Research Approach

The research approach for this project involved a series of semi-structured interviews conducted with two Secondary School Headteachers and one Deputy Head. This demographic was chosen as a purposeful sample based on the aspects of Service Design, and Social Constructivism explored in the Literature Review. The interviews were conducted over a period of five weeks. During this time, ideation and prototyping took place between interviews, and the prototypes were adapted afterwards with new insights. A social constructivist approach suggests the development of digital literacy amongst adolescents, particularly concerning their understanding of social media, is heavily influenced and shaped by the environment in which they live (Idaresit Akpan et al., 2020).

Consequently, secondary school headteachers were identified as appropriate participants for this research, possessing the ability to monitor and observe the use of social media among the target group (13–15-year-olds in Scotland) in a school setting. Service Design is a methodology that advocates for considering service providers and users during the research and design process (Gov.Scot, 2020). As any digital literacy educational solutions require the participation of educators, Headteachers should be included in the research and design phase to ensure that the best possible outcomes are achieved. Additionally, by actively engaging with Headteachers in the research and design process, it ensures that any digital literacy educational solutions are tailored to the needs of both the educators and the students.

The goal of the primary research is to use the findings discovered through these interviews to help answer the following research questions:

1. What factors influence adolescents' digital literacy?
2. In what ways can learning about UX design improve digital literacy?
3. In what ways can UX Design offer a unique perspective on adolescents' use of digital technology?

This research will provide in-depth insight into the context of use for the accompanying prototype. Identifying the context of use will involve an extensive examination of the day-to-day environment in which the technology is used. It is essential to understand the context of use to identify gaps in digital literacy education and provide insight into learners' potential interactions with the online learning platform. As such, these research questions would benefit from a qualitative approach, as this allows for in-depth insights and understanding experiences, perspectives, and motivations of participants. Qualitative methods often uncover insights that could be missed by more quantitative methods (source).

Before the research interviews, the participants received a participant information sheet (see Appendix 1). The research interviews followed a discussion guide (see Appendix 2), which included information on how the data would be stored, the purpose of the research, and gave the participant an opportunity to ask questions and provide verbal consent prior to the recording starting.

The first question in these interviews asked participants how students can positively use social media to support their development. This open-ended question was designed with generative techniques, often used in the Empathise stage of the Double Diamond design approach. Generative techniques help gain contextual insights and limit researcher bias while allowing participants to give unfiltered opinions. This provides an opportunity for rapport-building by asking follow-up questions that dive deeper into the participant's view.

The interviews then move on to two questions about existing levels of digital literacy and students' day-to-day social media use. This provides further insights into what elements of digital literacy adolescents are good at and what they need to improve. This will also highlight gaps in the educational system, such as what teachers are capable of, their resources, and how they implement this in the curriculum.

Discussing the professional observations of the participants regarding social media use among students will provide valuable insights into how adolescents use and navigate social media. This allows for an analysis of how education on interface design could positively impact this and what gaps in digital literacy influence social media use.

2.2 Data Analysis

An in-depth analysis was conducted to answer the research questions outlined above. The interview transcripts were carefully recorded and reviewed for accuracy (see Appendices 2, 5, 8). Afterwards,

the data collected was analysed using four themes: pupils, teachers, digital literacy, and social media. All three participants' data were compiled into one document to ensure robust and reliable findings (Appendix 9). Similarities and differences were highlighted and noted as a result of this process.

In the first interview, the participant highlighted individual teachers had varying levels of understanding of social media. However, teachers generally felt pupils knew more than them and did not listen to them regarding their social media use. Digital literacy education lacks a framework and is left to individual schools and teachers to tackle, causing them to feel lost. The school uses an EU framework, but there is a lack of understanding of how to tackle this framework. The participant also highlighted that parents and teachers should lead digital literacy education to encourage a learning-focused use of social media, with clear boundaries and an emphasis on the responsibilities of social media use. There is a need for more understanding of the big picture of social media and how it impacts the classroom. Young people are not aware of the impact that social media is having on them, and they think they need to be available all the time. This causes interruptions both at school and at home. A lack of boundaries or guidelines regarding social media causes this, leading to social media being a 'free-for-all.' In addition, a lack of checks and balances means that young people are not being looked after.

The second interview revealed several issues related to technology use among students, parents, and teachers. Students struggle to focus and don't understand the separation between school and personal technology, often writing essays in text speak and trusting Wikipedia. They use different social media than teachers and parents, and while they understand healthy phone use, they struggle to implement it due to peer and home pressure. Students learn a lot about safe communication and trusted sources but don't implement what they learn into their behaviour. School-issued iPads are easily bypassed and are not helping students learn. Social media use causes issues, such as fighting over energy drinks and student fallouts. Parents have little influence over social media control at home, and fallouts occur because of social media. Teachers have had to implement rigorous mobile phone policies and do not see any benefits from social media. They try to encourage parents to come and learn about social media, but there isn't much appetite for it among parents.

The third interview revealed several adverse effects of social media on pupils, such as problems with attention caused by a compulsion to check mobiles, a decline in abilities in critical discussion and conflict resolution caused by a lack of face-to-face communication, and self-esteem and anxiety issues that prevent pupils from attending school or participating. Teachers require more specific resources to deal with digital literacy education effectively. Fallouts emphasised by social media

often result in police involvement. Teachers feel they need to point out apparent negative aspects of social media to students and that students don't identify this without help. Digital literacy skills are mixed, with only basic application skills taught and little understanding of the impact of digital technology use. There is an assumption that pupils are "digital natives," which can lead to a misled belief that they have the necessary skills to use digital technology effectively. Algorithmic personalisation and the compulsion to check notifications are the two core issues with social media. Social media companies do not monitor enough damaging content, such as sexist content hidden behind humour.

2.3 Findings

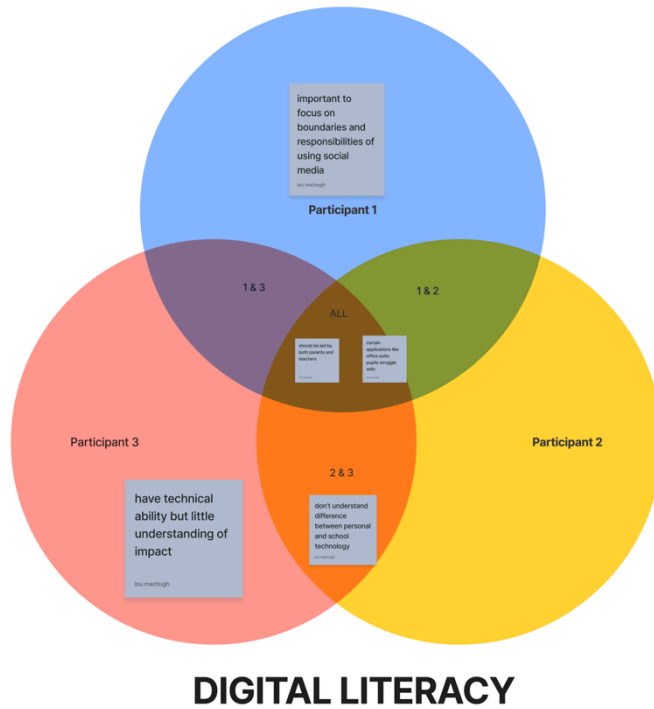


Figure 1: Venn Diagram of Interview Insights (Digital Literacy)



Figure 2: Venn Diagram of Interview Insights (Pupils)

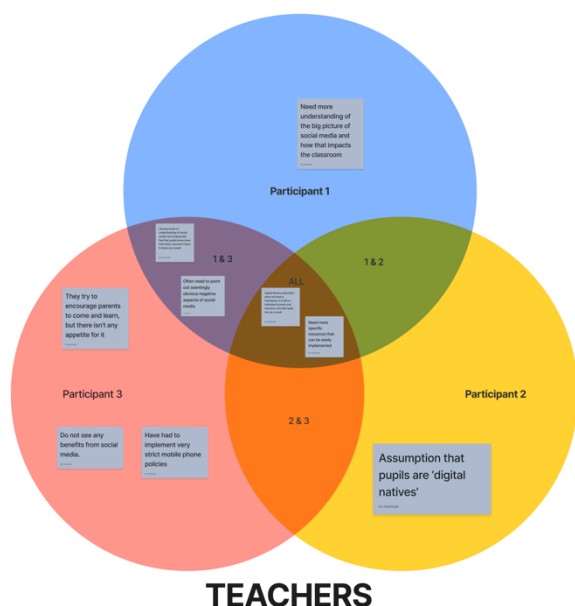


Figure 3: Venn Diagram of Interview Insights (Teachers)

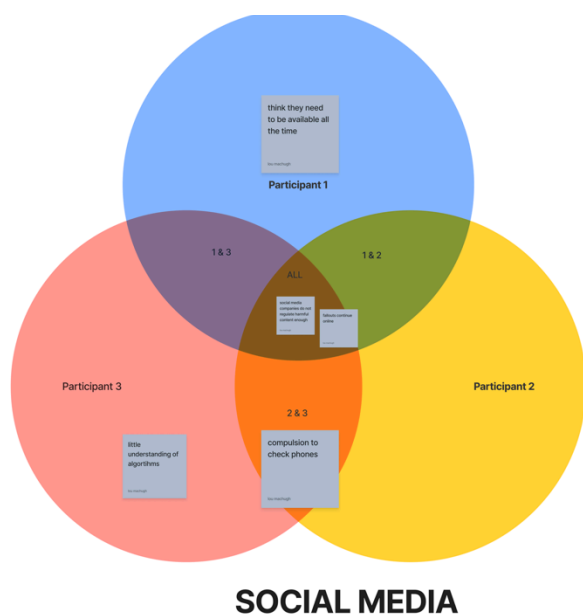


Figure 4: Venn Diagram of Interview Insights (Social Media)

Participants agreed social media is causing negative social impacts on school and mental health and that the proposed learning platform could effectively fill a gap. The main commonalities among participants were that online platforms emphasise negative feedback, which causes increased social issues, and that parental influence (or lack thereof) is a significant factor in adolescents' healthy use of social media. Two-thirds of participants were concerned about the lack of a framework for digital literacy education and how this impacts the quality of learning. Additionally, two-thirds of participants noted that young people are not proficient in applications like the Office suite and sending emails. All participants highlighted that adolescents are not responsive to

feedback on their social media use because they feel they know more than adults. The main differences were that only one participant highlighted struggles in implementing knowledge learned in class, and only one participant highlighted that school-issued iPads had an adverse on learning. All interviews imply that social media can serve to emphasise existing issues, such as anxiety, self-worth issues, attention spans, and pupil fallouts.

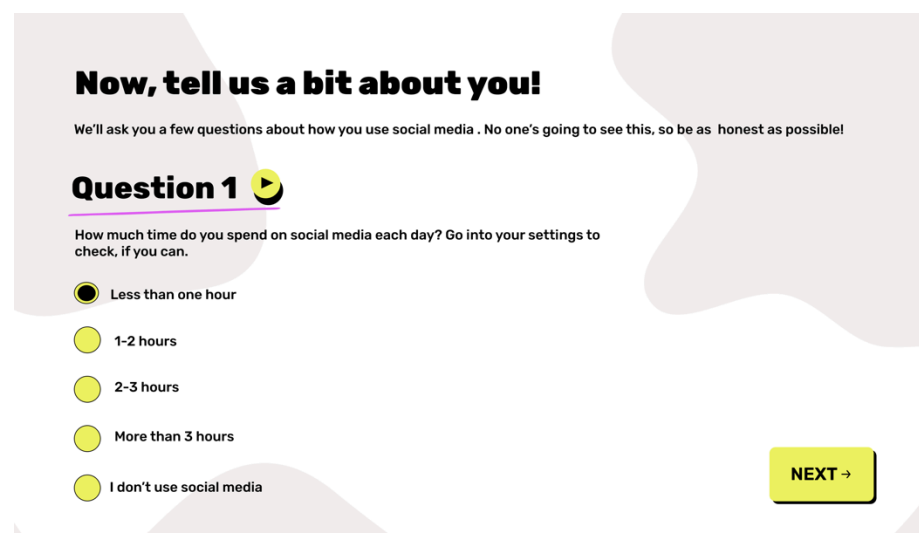
This data highlights that home, and school environments influence digital literacy, and the pandemic has caused students to use personal technology more frequently. To improve their digital literacy, students would benefit from understanding UX design elements of social media, particularly those that lead to increased usage and the need to check it frequently. Additionally, understanding how social media algorithms select content would be helpful. However, adolescents may face difficulties in implementing this learning if they feel pressure from peers and family to use social media in a certain way. Furthermore, understanding the differences between digital and face-to-face communication, and focusing on the responsibilities of using social media, would be beneficial.

When examining the findings of this study in combination with secondary data, it becomes apparent that the learning gap identified in the scoping document is causing significant educational and social issues. These issues include fallouts, attention problems, and a lack of understanding of the long-term impacts of technology use. Comparing these findings with existing theories suggests that social media amplifies existing societal issues, as seen in the literature (Syvertsen, 2020b).

Furthermore, it is worth noting that the lack of data on the adverse effects of social media on adolescents' mental wellbeing highlighted in the scoping document could be attributed to the failure to recognise real-life social lives as an extension of digital lives. This is a point that has been emphasised in various academic papers, including theories on how the lack of evidence of the impact of the 'filter bubble' effect could be attributed to not recognising how social lives are an extension of digital lives (Davies, 2018), and studies on digital anthropology that emphasise that there should not be a difference seen between the 'virtual' and the 'real' (Horst & Miller, 2012). All research participants reported seeing in-person fallout emphasised by social media and named this as the leading issue caused by social media use. This leads to the possibility that social media may be an amplification tool for adolescent social lives. Further research into this topic could potentially provide data that presents a categorically negative impact of social media on society, particularly adolescents.

3. Exploring Solutions: An Online Learning Platform

The proposed solution is a prototype for an online learning platform designed to enable adolescents to explore and understand design aspects that influence their social media use, through three different activities. The classroom-based nature of the platform will offer more opportunities for peer collaboration, which is a fundamental element of the social constructivist approach employed for this project (Reynolds, 2016).



Now, tell us a bit about you!

We'll ask you a few questions about how you use social media . No one's going to see this, so be as honest as possible!

Question 1 ▶

How much time do you spend on social media each day? Go into your settings to check, if you can.

- ☒ Less than one hour
- ☐ 1-2 hours
- ☐ 2-3 hours
- ☐ More than 3 hours
- ☐ I don't use social media

NEXT →

Figure 5: Onboarding Quiz Sample Screen

The prototype includes an onboarding process and three interactive activities. This is also outlined in the information architecture (Appendix 3). The onboarding process allows learners to select the 'student' option, enter a 'classroom code' to be coupled with people in their class, and take a brief reflective quiz (Figure 5). This quiz lets learners contemplate their social media experience through questions about their current behaviour, screen time, who they follow, and what their parent/guardian thinks of their social media behaviour. This allows the learner to connect their prior knowledge and their new knowledge and relate this learning to their life experience (Hailikari et al., 2007). The content plan (Appendix 4) is demonstrative of all the information that is included in the prototype, including the basics of interface design, a quiz on these elements, group challenges, and an exploration of the implications of algorithms on social media.

3.1 The Impact of Educational Interventions on Adolescents' Autonomy and Long-Term Behaviours

The target demographic for this project is adolescents aged 13-15, living in Scotland. Research has established that educational interventions that target this age demographic must respect and advocate for adolescents' autonomy to be effective (Yeager et al., 2018). Here,

autonomy is defined as the right or condition of self-government (Perry, 2022) and has three main aspects:

1. The belief that we are in control of our actions.
2. Freedom from being pressured by others to do things.
3. The flexibility to make choices.

Research indicates that adolescents often do not feel autonomy over their social media experience (Common Sense Media, 2018). Studies suggest better comprehending something's workings and design can increase autonomy over its use (Perry, 2022). This indicates that this lack of autonomy could be attributed to a lack of understanding of how social media works and is designed. As such, this project aims to allow adolescents to gain more control over how social media is used if users have a deeper understanding of its mechanisms. Consequently, providing educational resources to help adolescents gain the necessary knowledge of social media to become more autonomous in their interactions with technology is essential. Furthermore, research has revealed that adolescents make healthier decisions with increased autonomy (Perry, 2022).

3.2 The Role of Design and Digital Technology in Knowledge Generation

To create an effective digitally enabled learning experience, how technology can generate societally constructed knowledge and shift socially constructed knowledge needs to be examined. The interview data highlights the importance of peer pressure in how adolescents learn about social media and how they use it. Any digital solution that allows adolescents to explore the factors that influence their social media use has to allow for and create socially generated knowledge.

Social media has become an integral part of daily life, all aspects of personal and professional lives, and has allowed for interaction and collaboration, creating collective knowledge (Kimmerle et al., 2015). Digital technology can promote collective knowledge restructuring when used effectively through shared experiences facilitated by digital artefacts (Kimmerle et al., 2015). Argumentation research, which considers processes involved in knowledge building, shows that students can create and develop a deeper understanding when collaborating (Kimmerle et al., 2015). The proposed learning platform seeks to facilitate this knowledge restructuring by providing a space for exploring and discussing vital social media design concepts. In addition, it encourages social interaction and discussion of these concepts and their impact on learners' social and personal lives. Learners will gain a deeper understanding of these concepts, explore the factors that influence their relationship with social media, and make informed choices regarding their social media use.

3.3 The Potential Impact of the Digital Divide and the Role of Digital Self Efficacy

The Digital Divide is crucial to consider in the development of any educational technologies, in order to ensure equity and inclusivity in learning experiences and outcomes (source). Within the context of this online learning platform, both primary and secondary data highlight the complex nature of this potential impact, and the potential role of Universal Design in ensuring the influence of the Digital Divide on the proposed learning platform is mitigated as far as possible. The consideration of the Digital Divide is also impactful for this project as it ensures the project aligns with social constructivist theory by emphasising the importance of social knowledge construction in how adolescents use social media platforms.

A key component of closing the Digital Divide is digital self-efficacy, the belief that one can accomplish complex online tasks (Eastin & LaRose, 2000). A parent's socioeconomic status can negatively affect their digital self-efficacy (Huang et al., 2018), which can influence their adolescent's digital self-efficacy (Hammer et al., 2021). Therefore, the Digital Divide can affect parents' involvement in adolescents' digital literacy and social media behaviour. The primary data highlights that those with less parental involvement in digital literacy and social media use may have difficulty comprehending and applying the knowledge in the proposed online learning platform. As a result of the primary and secondary data analysis, it can be concluded that the Digital Divide may negatively impact learners' ability to comprehend and apply the information on the proposed online learning platform.

Studies suggest that individuals' awareness of the impact of social media algorithms on content, known as 'algorithmic awareness,' is influenced by education level and geographical location (Gran et al., 2021). This highlights the potential role of the Digital Divide in existing awareness of issues related to social media algorithms, which has been highlighted in primary research as a key issue to be tackled in the proposed online learning platform. It could be concluded, therefore, that pre-existing knowledge, which has been shown to be a crucial factor in learning success (Hailikari et al., 2007), could be impacted by the Digital Divide.

The primary data highlights the importance of adolescents using social media for positive outcomes, such as connecting with peers, or learning, and their apparent difficulty in doing so. Digital skills are a key component in adolescents' ability to use social media for these positive outcomes, and the level of these skills has been shown to be impacted by the digital divide (Lybeck et al., 2023). The impacts of the digital divide on social media behaviour range from the ability to building and

maintaining reputations online, to the ability to affect political change through online behaviour (Lybeck et al., 2023).

Universal Design holds that designing for those with the highest support needs will make the experience better for all users (IxDF, 2018). According to primary data, learners who would find it most difficult to understand and implement the information in the proposed online learning platform are those with little parental involvement in their social media use. The secondary data explored here highlights that the Digital Divide could be a contributing factor to these levels of parental involvement. The user persona and empathy map in Appendices 6 and 7 demonstrate the consideration of this user group.

3.4 Designing an Effective Digital Curriculum

3.3.1 Determining Learning Goals

To create learning experiences that are effective and meaningful, it is vital to start with clear learning goals (Van Nuland et al., 2020). Educators and learners can create more engaging and effective learning experiences with clear learning goals that produce lasting outcomes ((Van Nuland et al., 2020).

Three steps can be taken to determine these learning goals: identifying the desired results, determining how this will be assessed, and deciding what kind of learning experience can deliver this (Van Nuland et al., 2020). This process is crucial to ensure that the learning goals are aligned with the overall learning objectives and can be effectively assessed.

The desired results for the proposed learning platform focus on social media use and attitudes. Learners should be able to identify behaviour change mechanisms in their social media experience and make informed choices about their social media behaviour based on this knowledge. Further study may be needed to determine if these learning goals have been achieved successfully. This could include implementation and teacher reports to provide a comprehensive assessment of student learning.

Finally, it is essential to consider the type of learning experience delivered. The desired learning experience is digitally enabled classroom learning, in line with primary and secondary research. This approach has the potential to be more engaging and effective than traditional classroom learning methods while still allowing for the benefits of in-person interaction and discussion (Lin et al., 2017). By combining digital learning with in-person interaction and debate, students can engage with the material meaningfully and are more likely to retain the information learned.

3.3.2 A Social Constructivist Approach

Approaching the design of this online learning platform using the principles of social constructivism is a beneficial approach backed up by both primary and secondary research. Social constructivism holds that learning is communicated through language and culture and is a social experience (Idaresit Akpan et al., 2020). Social constructivism seeks to create learning experiences that allow this collaborative construction of knowledge (Idaresit Akpan et al., 2020). Social constructivism encourages active participation, critical thinking, curiosity, and self-worth (Idaresit Akpan et al., 2020). This approach to creating a digitally enabled learning experience will improve students' understanding of the material. It will also enhance their ability to apply this knowledge to their experiences with social media.

Designed for classroom use, this online learning platform incorporates peer collaboration elements. It encourages learners to discuss and consider aspects of social media interface design with each other, enabling the construction of knowledge of how social media works, how it is designed, and the impact this has on adolescents' behaviour online. This is explored through three interactive activities.

Activity 1: Quiz
Complete the questions below. It should take about 10 minutes.

Question 1 🎯

Which two features work because our brains think whatever we see next could be helpful?

- ☒ Infinite Scroll
- ☐ Immediate Feedback
- ☐ Screen Layout
- ☐ Image-Centred Platforms
- ☐ Pull-to-Refresh

Question 2 🎯

What are the two main features of screen layout on TikTok, YouTube Shorts and Instagram Reels?

- ☒ It takes up the entire page
- ☐ It focuses on visual content
- ☐ It plays automatically

Question 3 🎯

How does this screen layout keep you watching for longer?

- ☒ Our brains think it is helpful
- ☐ We are less distracted
- ☐ It's important to our social lives

Question 4 🎯

Why does content that looks more appealing do well on social media?

- ☒ We think that things that look better work better
- ☐ It gives our brain a reward
- ☐ It keeps our attention

Question 5 🎯

Why do likes and comments matter to us?

- ☒ It means our social group approves of us
- ☐ It gives our brain a reward
- ☐ It keeps us engaged

SUBMIT ANSWERS

Figure 6: Social Media Design Quiz

Screen Layout 🎯

What is it? 🎯

TikTok's screen layout has two main features: 1) It takes up the entire page and 2) It plays automatically. This is also seen in other apps that have short video content, like Youtube Shorts, or Instagram Reels.

What does it do to your brain? 🎯

This means you are less distracted by other things, so your focus stays on the content for longer.

Why? 🎯

You spend longer on social media, and you are more engaged with what you see.

CONTINUE →

1 2 3 4 5

Figure 7: Information Slide Example

In the first activity, students will be introduced to the basic features of social media interface design (Figure 2). They will explore these features and take an interactive quiz (Figure 1) to test their understanding. This activity will allow students to understand better how social media features can influence their behaviour. By using interactive learning methods and providing positive feedback,

this activity enables learners to better understand the impact of social media on their daily lives. This activity is designed to encourage critical thinking and promote exploration of how these design aspects influence the learner's experience on social media.

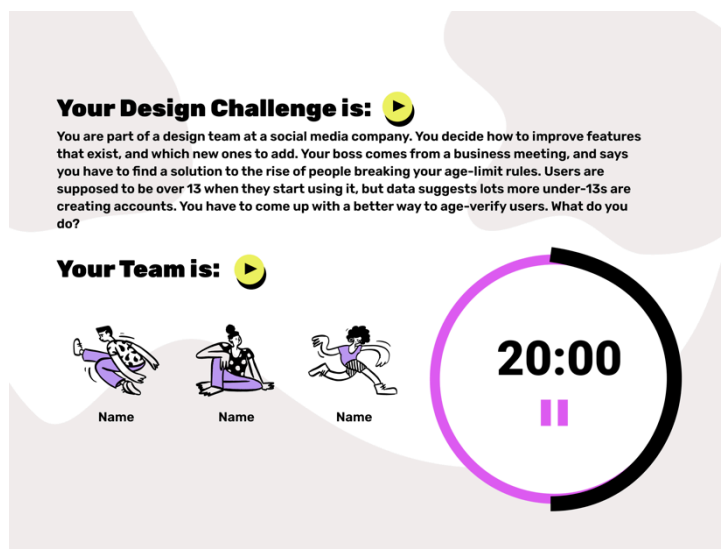


Figure 8: Team and Problem Assignment

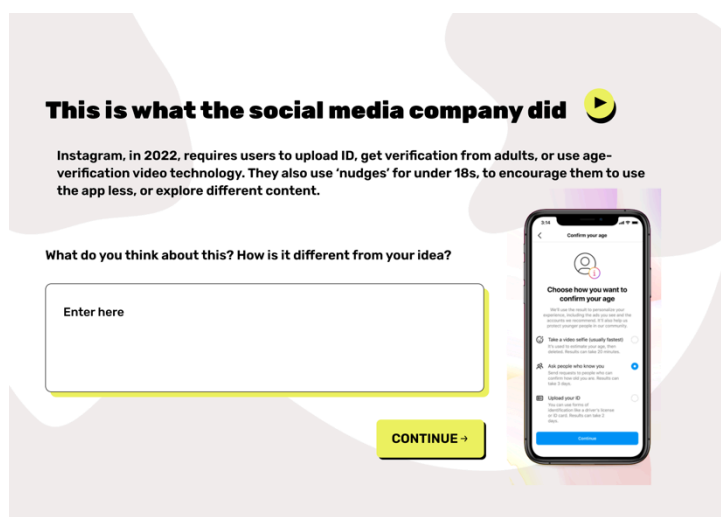


Figure 9: Solution Comparison

The second activity in the course aims to enhance learners' understanding of social media companies' motivations. In this activity, learners will work collaboratively to create a solution to a design or business problem faced by a social media company. This approach will allow learners to apply their knowledge and skills to a real-world scenario and learn alongside their peers, with the goal of understanding the motivations behind design decisions on social media platforms. The activity will use a task-based, interactive, and collaborative learning approach (Figure 3). It will encourage learners to participate actively and engage with other team members. This approach will help them develop essential communication, collaboration, and problem-solving skills. After completing the task, learners will be asked to present their ideas and engage in a discussion.

Following this, they are presented with the solution to their design challenge, that the social media platform implemented and asked to reflect on this (Figure 4) This stage will provide them with feedback and an opportunity to reflect on their learning experience by discussing the experience with their peers.

In the third activity, learners will engage in a series of tasks to help them better understand the "filter bubble effect" and its impact on social media use. Algorithms create these filter bubbles by enabling users to view content they enjoy and create a personalised feed (Davies, 2018). This is effective in keeping users engaged with social media because humans naturally prefer similar individuals (Storr, 2021), and social media amplifies pre-existing social structures (Syvertsen, 2020a). While technical studies indicate that filter bubbles have little impact, it can be argued that such studies do not consider users' social lives (Davies, 2018). By considering social lives as an extension of digital lives (Syvertsen, 2020), filter bubbles' emotional and societal consequences can be clearly observed, which can affect social cohesion, conflict, and attitudes (Nguyen, 2020).

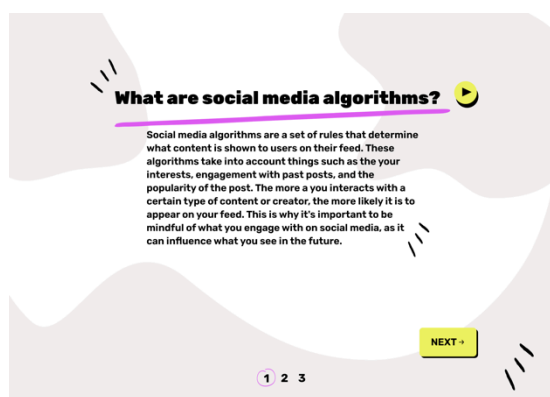


Figure 10: Algorithms Information 1

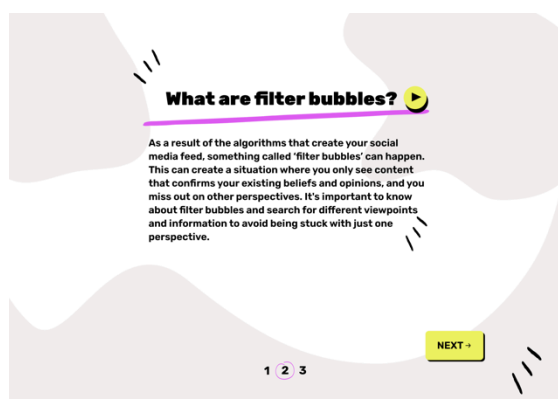


Figure 11: Algorithms Information 2

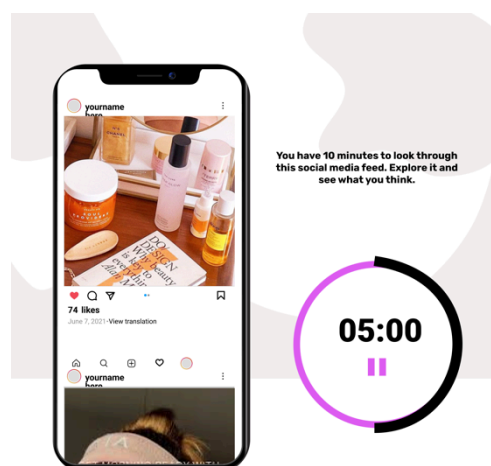


Figure 12: Feed Comparison

The activity starts with two slides outlining how social media algorithms work, and how this creates filter bubbles (Figure 5, 6) This is followed with a short quiz that asks learners about their opinions and behaviours on social media. After completing the examination, it will direct them to a social media feed opposite their own (Figure 7). This will expose them to the content they may not have encountered otherwise. Once participants have explored the opposite social media feed, they will pair with a classmate to discuss their thoughts on the experience. This collaborative discussion encourages learners to examine the "filter bubble effect" and comprehend how different individuals in their social circles can have vastly different social media experiences. This activity is designed to allow learners to understand the extent of the impact of this and reflect on their social media experience.

3.3.3 Inclusive and Engaging Platform Design

Digitally enabled learning experiences have been shown to increase engagement and be more inclusive (Lin et al., 2017). The learning platform has several different accommodations to be engaging for all users. It uses a clear, sans-serif font with readable and vibrant colours (Figure 10). It also has a speak-aloud option for each chunk of text – some students will have access to a screen reader, but studies show that everyone can benefit from speak-aloud options, and it is beneficial to include them in the platform for inclusivity (Van Deursen & Helsper, 2018). Illustrations of concepts through images are included as much as possible, following the Universal Design for Learning Guidelines, to have different options for how information is presented (UDL,2021). Immediate feedback is also an essential aspect of inclusive learning design, as it has been shown to make the experience more engaging (UDL,2021). This improves inclusivity, as it improves the ability of the platform to hold attention, which is identified as a critical aspect of inclusivity (UDL, 2021).

A key aspect of inclusive and engaging platform design is ensuring that the platform meets accessibility standards. To achieve this, the platform has implemented several design choices considering accessibility. For instance, the platform provides speech options and alternative methods for communicating text content. Moreover, the font is clear and sans-serif, with contrasting colours to aid visibility. The visual hierarchy is well-defined, which makes the content easy to scan. Additionally, all image content is accompanied by clear captions.

An inclusive design approach includes inclusivity in the research approach. Before the research began, the purpose of the study was explained to the participants in full detail, and any assumptions were clarified throughout the process. This can be seen in the discussion guide (Appendix 12) and the research transcripts (Appendices 2, 5, 8). By ensuring that the research approach is inclusive, the platform design can be further enhanced to meet the diverse needs of all users.

4. Additional Recommendations and Further Considerations

4.1 Upskilling Teachers

Research interviews have indicated that teachers' digital literacy, particularly concerning social media, can be varied. This creates a distinctive challenge when providing adolescents with suitable education about social media and recognising and managing its effects in the educational environment. Such variability in teachers' digital literacy could be a challenge to successfully implementing the proposed learning platform. Teachers who lead the learning process must have a basic knowledge of social media utility, interface design, and social context. Therefore, there is an imperative need for educational resources that can assist teachers in understanding social media and its social contexts, both at a basic and complex level.

In response, a prototype resource (Appendix 10) has been created, alongside a homepage that allows teachers to create and manage virtual classrooms, enabling the management of the use of the online learning platform within the classroom. These additional resources take the form of an article-based structure. The prototype that has been developed provides a personalised homepage with several filters, allowing the user to select their knowledge level of social media (beginner, intermediate, and advanced), the subject(s) they teach, and their desired reading time. Moreover, the homepage also can allow users to save articles for later and to refer back to helpful articles to explore the content further. Furthermore, the prototype (Appendix 10) also demonstrates an article format that permits readers to scan the text, delve into the content in-depth, and provides beneficial guidance for further reading that educates the user efficiently and effectively. This, in turn, allows users to gain a more comprehensive understanding of the topic at hand.

4.2 Parental Resources

Research has determined four primary worries for parents concerning their teens' interactions with social media: inadequate sleep, a lack of physical exercise, a disruption in schoolwork, and the pressure to conform to specific social standards (*Digital Information World*, 2020). A solution was designed that encompasses four social media posts, each concentrating on one of the aforementioned worries and providing valuable information such as potential causes and helpful tips to overcome them (Appendix 11). Research has demonstrated that social media parents are likely to trust the parenting advice they encounter on the platform, and it is easy to provide digestible information in social media formats (*Digital Information World*, 2020).

As mentioned in the research interviews, parents play a vital role in their adolescents' experiences with and perception of social media, making it essential that parents are provided with the necessary resources. It is also indicated in the research interviews that parents who have more resources, knowledge, or ability may be able to support their children more when it comes to social media. As such, targeting a solution primarily at parents poses the danger of accentuating the Digital Divide. Parental resources should be designed to be easily understood and used, allowing them to be used and comprehended by more significant numbers of parents. These solutions should be supplementary to solutions provided in schools to ensure minimal risk of accentuating the Digital Divide.

4.3 Further Research Recommendations

Due to project constraints, some gaps couldn't be addressed. There is a lack of framework for schools regarding adolescents' digital literacy. Further research into what guidance is needed and what resources could support this guidance would be beneficial to teachers and schools. Moreover, the knowledge gap in teachers' knowledge of social media and understanding of its impacts should be studied and addressed. This would ensure that any educational solutions created are implementable in schools and address the issue of young students being perceived as 'knowing more' about social media.

As indicated by the data analysis, primary research clearly shows a need for further exploration of the extent to which social media amplifies existing social issues, such as pupil fallouts. While there is a significant amount of research on how social media affects mental wellbeing, there is little that examines it as an amplification tool for antisocial behaviour, which all participants agreed it acted as. To examine this issue, a research approach would need to focus on specific aspects of

social media since vague language in social media research can lead to ambiguous results (Orben, 2022). For example, a study could investigate the correlation between antisocial behaviour and the use of social media to determine the extent to which social media amplifies harmful social behaviour, such as bullying and fallouts. Above all, it is clear that research into the impact of social media on adolescents needs to take more account of the social and behavioural impacts, particularly how it influences interactions between adolescents.

5. Conclusions

RQ1. What factors influence adolescents' satisfaction with online learning?

Context is a crucial factor to consider when assessing adolescents' satisfaction with online learning. Clear and visually appealing design, text segmentation, image use, and immediate feedback encourage platform engagement (Reid et al., 2016). Learning Experience Design also plays a role in offering options for information representation (UDL, 2021). However, the success of this online learning platform depends on being used in a classroom setting due to the social nature of the issues it targets.

RQ2. What factors influence adolescents' digital literacy?

The primary research also made it clear that social factors, such as access to technology, parental influence, and peer pressure, are the driving factors that influence how adolescents engage with digital technology, which in turn affects their levels of digital literacy. Another significant factor in considering adolescents' digital literacy is the blurred line between personal technology and technology used for school or work. Several participants highlighted that pupils struggle with administrative tasks such as sending emails or using Microsoft Excel, and that some pupils write their essays in "text-speak." This once again emphasises the importance of adopting a social constructivist approach to educational solutions by highlighting how social factors play a significant role in how adolescents understand and interact with digital technology, mainly social media.

RQ3. In what ways can learning about UX design improve digital literacy?

RQ4. To what extent can UX design practice elicit unique (tacit) perspectives on adolescents' use of digital technology?

Helping adolescents understand social media UX design to address the issues identified in primary research has several advantages. Evidence suggests that limiting adolescent social media use is

unnecessary and ineffective (Przybylski & Weinstein, 2017). The issues identified in primary research can be linked to specific design features that take advantage of human psychology, such as the reward response triggered by likes and comments, screen layout in short-form video content, and infinite scrolling. Additionally, research shows that adolescents do not feel a sense of autonomy over their social media use, and enhancing knowledge on the subject can increase feelings of autonomy (Perry, 2022).

RQ5. What role do Social Constructivism, Service Design, and Learning Experience Design play in developing an online learning platform?

The primary research conducted for this project highlighted the particular importance of in-person social interaction in consideration of the design of the proposed online learning platform. Participants talked about how social media amplifies issues such as adolescent fallouts and anxiety. This highlights that it is vital that any educational solutions prioritise and centre around classroom learning that encourages learners to interact with one another. This follows the social constructivist approach throughout this project (Idaresit Akpan et al., 2020). Involving service design in the research approach, in the choice of participants and design of interview questions, was vital in leading to these insights (Gov.Scot, 2020). This is because the chosen demographic is in an advantageous position to observe these social issues that are amplified by social media.

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Appendices

Appendix 1 – Participant Information

Participant Information

I am a fourth-year Digital Media and Interaction Design student at Edinburgh Napier University and am currently in the research stage of my Honours Project. I am looking for participants to take part in a research interview that will last between 40 and 50 minutes, take place virtually, and be audio recorded. The audio will be securely stored on the university OneDrive until the final hand-in date of May 1st.

My project aims to explore adolescents' involvement with social media, the factors influencing this engagement, and the potential role of education in this area. Specifically, I am proposing an online learning platform that teaches about social media design and its physiological impact, targeting

adolescents aged 13-15. This platform would help adolescents gain a deeper understanding of how social media interactions impact them by increasing their digital literacy.

If you are interested in taking part in this research or have any questions, please email me at 40432196@live.napier.ac.uk.

Appendix 2 – Interview 1 Transcript

Speaker 1
Start recording.

Speaker 2
OK.

Speaker 1
OK, so the first question, could you provide your thoughts on how you think that students should approach social media to adequately support their development?

Speaker 2
So, if it's gonna be helpful to young people then it has to be something which is has a positive impact on their well-being. Added value in some way, whether it's in an educational way in terms of academic, whether it's about finding out knowledge about other aspects of the world, supporting them with their own development in other ways, but generally, the whole point of it should be that it opens doors. But all only if it's done in that in a way that

reinforces the positive in young people and helps them to grow. As an individual, that would be my that would be my wish list for it. Unfortunately, I don't think it quite measures up to that.

-

Speaker 1

You think that it should be about opening opportunities, so they should focus on what can be positive. So, would you say that what I'm doing here to help them understand how it works could support that?

Speaker 2

Well, I suppose very much in terms of if it were something, I mean, young people have to be led and directed as well, don't they? At times they must be guided. If it were something that perhaps a parent or a carer or a teacher could access, almost like a prerequisite to using social media. This is how you can use it positively; this is how it can be used for good. These are the things to watch out for. These are the potential pitfalls of social media. With the rights of social media, comes responsibilities of how it's used and how you share information and how you communicate with other people and the image that you give of yourself, perhaps as well as.

A wee module. Yeah, and people could go through before they embark on social media. With parents, some parents are very, very good at checking young people's social media or looking at their phones or understanding what platforms they're using. I mean, we're talking people as young as you know, I don't know. 7-8 years old?

Speaker 1

Yeah, people are getting on it younger and younger, to be honest. Instagram was kind of only becoming a thing when I was about 11 or 12. I wasn't allowed anywhere near it because of my mum until I was a bit quite a bit older than that. I wasn't allowed to have it, until I could make that decision myself so well. But I do see it getting younger and younger. With my brother, even the six years between us is a huge difference. Yeah, so with his age group it's like if he wasn't on social media. That would be weird, whereas me not being on social media. Wasn't that unusual?

Speaker 2

There are no key holders. You know there's nobody there to do the checks and balances about how it's what, it's what information is being provided and how it's influenced and that needs to be the people. Who are looking after the young people?

Speaker 1

There's a lot that I'm reading about in relation to this. To do with the sort of like how we can regulate it properly. Introducing new public bodies and the issues with the way that it is designed and made right now market wise, but that it's, it would require a huge overhaul. I'm taking the approach of let's educate kids about what it looks like now and how to navigate that. Because whilst we want it to change, to be more inclusive and positive, that happening is quite a way off. Yeah, it's quite a way off.

Speaker 2

But then where, where, where, what responsibility? Did do these? Platforms have like what's their responsibility in all?

Speaker 1

Yeah, that's it's a lot of basically a lot of these firms are answering philosophical questions from the prospect of how can I make more money, which is the core of the problem because there are huge moral dilemmas that we haven't dealt with, that they're just basically thinking right? What's the best angle I can cover this to get some more money?

Speaker 2

So if they're not going to do it, parents and schools need to do it, I mean schools. We're not living in a perfect world. Parents, in my view, have a massive role to play in guiding young people along the right path. Mm-hmm, I'm not naive enough to know that, like there are parents who just can't do that, you don't have the capacity to do that, and therefore the responsibility will probably fall on schools to be able to do that. And we do do that, and we engage with our partners and things to try and make that happen. You know we are. Although we are educationalists that there are, we're not. We're not sometimes, it feels like we are the last chain of command. You mean it's like we'll just get schools to do it.

Speaker 1

I'm building a proposal for a platform in a sort of academic report style. Writing the report has allowed me to sort of consider like, a lot of different lenses you can take from it to the point where you could even say it needs to be implemented in a national curriculum. We need more consideration.

Speaker 2

To be used in an educational environment?

Speaker 1

Yeah, the idea is that it's to be used in an educational environment because i be incorporating aspects of students interacting with one another. Face to face. I haven't quite smoothed out the details yet. There are quite a few different aspects to it, but it will involve a lot of interaction and collaboration. Using like digitally enabled tools.

Speaker 2

Yeah, there is an element of education for adults though?

Speaker 1

That's another lens that I could have taken. I was looking at a couple of different options. It's I could actually target parents with this, or I could target teachers.

Speaker 3

Of course, because I'm not like, I mean, as I said, I don't really use social media, really. Right, however, there will be adults in this school. There will be teachers who do. Yeah, I know from my daughter's experience of using it. You know, like, what do you? What do you see on Snapchat and all these other platforms? You know, its people looking absolutely gorgeous, doing amazing things, having a wonderful life wearing the best clothes. You know there are very few people in there, and if she quite likes real, is it real? Time likes. OH, be real. Yeah, that's yeah. Yeah, right. so, we do the be real every day so I think, like. I don't know what the outcome of that is. I don't know if it's just another opportunity for people to be real looking amazing, or if it's what it says.

Speaker 1

Yeah, I avoided it for months because I was like that sounds dystopian, but I downloaded it a couple of months ago and I've. I mean, I've found it quite fun I. I think the thing about it for me that I find rewarding is it's not actually. That intrusive in. Your life it's. No, yeah, it's a bit of fun.

Speaker 2

So yeah, I don't know why I was talking about that, but basically Teachers will have that knowledge of how that can make you feel that people who use it a lot and be much more aware of the impact it has on you. I don't necessarily understand really the impact. I can hear. I can listen to what kids are saying. Yeah, listen to what Hannah's saying and it makes sense that you know that's the way it would affect you. Yeah, it's never affected me that way. I've never experienced it so.

Speaker 1

Mm-hmm, yeah, I think that's a different lens that I'm taking on it because I've had a direct experience with it, so I've seen a lot of, like, people that do research on it from, like, a psychology or a neuroscience perspective and like you're treating children like they're zoo animals. It's like also they're only doing this research on like the age group that they're looking at, so they're looking at 13. 14-year-olds. But you've got people my age. We experienced this. We are adults now, and I think there's a big research gap where there's a lot of opportunity because you can talk to. Full grown, emotionally mature adults about what those children are experiencing because they experienced it, but I'm able to articulate it much better. Not just because of what I've studied, but just because I'm a grown up. Now I'm not like 15 anymore.

Speaker 1

Yeah, yeah that that would be part of it, and that's not something I am actually going to be directly building in the prototype that I'm doing. But it's yeah in the.

Speaker 2

Who are you? I'm a pupil. I'm a young person appeared and I'm a teacher.

Speaker 1

Yeah, yeah, so that's going to be how it's structured. I'm just not gonna flesh out those sections as part of this report. Yeah, so I'd like to move on to some questions about digital literacy that you see in your students. So, in your opinion, how digitally literate would you say your students are and why do you think that is?

Speaker 2

OK. I think it would depend upon the. The type of digital literacy that you're referring to, if that makes sense, right? I think there's some things that they are very good at. And other things that maybe not so good at. So maybe not so good at the stuff that will help them with their learning, but much better using the this the digitally or digital ways of. Of communicating problem, I'm just having a wee look for because it's something. So for instance, there's this document from Education Scotland right about and we've we've had a look at that about, but that's about digital learning, not installing digital literacy. But when Glasgow developed like the use of the iPads and all that sort of stuff, they used a A. A sort of European. I'm just having it. I'm just having me look for it. Give Me 2 seconds because it's something that in Glasgow we've been talking about. Is there a standard of digital literacy that we should be aiming for? Yeah, and young people. Does anybody know what that is?

Speaker 1

Yeah, yeah, they're actually basically no is the answer to that question. Yeah, yeah, the answer is basically no.

Speaker 2

There is no base line. People, there's no like by the end. Of BGE, young people should be able to, which I think would be quite helpful.

Speaker 1

Yeah, that did. Occur to me as I was doing the project. I was like it does need it needs. A framework it. Needs like standards for this, but there's only so much I can do for a university project, which is why I'm doing a sort of speculative report. I can't remember. This came from. So this is all about digital literacy.

Speaker 2

So basically, so that's what they see as being digitally literate is having awareness of digital identity, digital rights, digital literacy, digital communication, digital emotional intelligence, digital security, et. Cetera, et cetera, but. Have Glasgow come up and said this is what we. Feel schools should be doing this. Not really, yeah. In terms of what we do in school, you know. I mean, there we have a digital literacy period now. Every week for our r second-year pupils, and it's currently sitting in S2 because. It fitted in there in terms of the curriculum, and we go. We would really like to move it to S1. One mm-hmm So the plan maybe for next year is that we can move that into S1 because young people have all got their iPads. You know they're much more able, so it is about impacting that digital literacy course. It's not just about digital learning, it is about. Safety online, all that sort of stuff, so we work with the police who come in and do talk to young people about what to be aware of, how they can be breaking the law when. I'm not sure if I've. Answered that question.

Speaker 1

No, yeah, that's a lot of great points so well, the one the framework that I'm basing my project on is the online media literacy strategy that you, the UK government, released a couple of years ago. I think it was 2019 because it talks about interface design as part of digital literacy. And how it's important the thing that was missing was you. That's the thing that I would talk about my literature review. There's a clear gap here. They're talking about how important it is, but they're not giving any framework for when you should know what.

Speaker 2

So what was that called online?

Speaker 1

Online media literacy strategy.

Speaker 2

Right, OK, just to have a look at that myself just for future reference, because it's something I've been talking about. Is how do we get a baseline expectation of what what young people and teachers?

Speaker 1

Yeah I yeah, I find that that was most helpful, but I'm not coming from like a cybersecurity perspective or anything like that. I'm coming from this perspective of a designer. Yeah, so it's a lot of it's to do with how. Behaviour modification essentially. So the platforms are specifically designed to modify behaviour. Yeah, I don't think that's ethically correct. Lots of people don't think that's ethically correct, but it exists and there isn't any regulation on. So just teaching children about what that looks like, so that then they're not. You don't get sucked into social media in the same way, if you understand this is designed this way to make me not stop using it.

Speaker 2

The problem I think a little bit is low. The horse has already bolted. Can you really go back now?

You know that there's now this expectation of use? mm-hmm. And nobody's really got the there's nobody. It's kind of just. Out there and you're you're trying and you're hoping to sort of give people those boundaries and knowledge and understanding and. But maybe? Is it too late?

I don't know, I don't know, I mean.

Speaker 1

Yeah there is an aspect of we do now live in a society where behaviour modification on platforms that don't respect users privacy is the norm.

Speaker 2

Because it's now normal, it's normal.

Speaker 1

And that's probably not going to change even if there is more regulation that could help long term,

Speaker 1

It would be a really long time before there's any material difference there, yeah. But yeah, I just found myself that understanding how it works, sort of. It gives me more autonomy over it and more agency over my experience on social media. And there is research to back that.

Speaker 2

Do you think that you would have had that knowledge in that frame of mind when you were 12 years old? Or maybe 14 years old?

Speaker 1

I would have been curious to understand how it worked. I definitely would have been curious to understand how it worked. I wouldn't have known where to start. Social media platforms and corporations that build apps were just this sort of. Mysterious big shadow figure that I could never possibly understand, which just isn't true at all. There is a lot a huge aspect of it that it's like actually you can split this into digestible bits for people, so it's even something as simple as mindless scrolling. So that's when. Someone just won't stop scrolling, so its tech talk. It's designed that way because it only has one video on the screen. There is the endless bit, and because of how the algorithm works.

Speaker 2

So why do they want it to work that way? What's the? Under what's the planning?

Speaker 1

Just to get people to keep using it, use it more and more and more and more. That's yeah, it's because that makes them more money. Yeah, and there's also things to do with so when someone leaves a like on your post that it triggers a reward system in your brain that has been shown to not be healthy long term. So even just like interact and my basic idea is to build a sort of proposal for an interactive web. Like that explains that and I do think that would help because it's also it's about demystification because a huge part of how technology is approached is sort of like oh, it's this big thing that I can't understand. I couldn't possibly understand how that works, but actually you can understand how that works and you can. Put it down. Into digestible information for young children, yeah. It's might take a bit time to figure it out, but it's not impossible.

Speaker 3

What was that question you? Asked me again

Speaker 1

How digitally literate are your students and why?

Speaker 3

OK, so I think they can definitely use social media. And to be fair, there is so much work being done around digital literacy in primary schools as well now, so the use of everyone having an iPad, that equity of Umm, nobody's left out. Everyone's the same. So there's been, I mean, a huge amount of work.

Speaker 1

Yeah, yeah.

Speaker 2

And in with staff, even in their own in the primary schools. Too of upskilling. Because if they want young people to be digital. The teachers have to. Be digitally literate as well.

Speaker 1

Yeah, I mean that was a big part of it when I was at school. Remember, Missus Riley refused to even do a digital register. She well, I remember I had her until. 3rd year and she always did a paper register and then got someone else to put it online for her. And that was 2016 so.

Speaker 2

You know, right? So so there you're dealing with people like that and you're dealing with people like Miss Collins, who's put the name in the book there, who's like all over digital media. And so, it's about upskilling everybody so that they can then lead young people. The problem is, the older generation doesn't have those skills necessarily.

Speaker 1

Yeah, yeah, I do think there's also something about different subject areas, and because it's digital, technology is everywhere affects everything. So I you know, I did advanced higher modern studies and that's always been a huge interest of mine. So even from a modern studies perspective there is like, the political context. That's something that modern studies teachers would be able to understand. And even RE teachers, they could tell you about a philosophical perspective on it, so there is a lot of different aspects to it that I think are kind of not really recognised because it's everyone has a unique skill set, especially when you're talking about teachers. So if you're looking at it from a political lens from a philosophical lens from the lens of a language teacher even. There's a lot of different lenses you can look at it from, and that, yeah.

Speaker 2

What else? What else would? I say that they do particularly well in terms of the apps and things, you know. Using office skills and things like that, I think they're very good. Very, very good. All of that sort of stuff and and it's teachers so that you need to be upskilled a little bit more, but that's what we're working on. Just now I would say.

Speaker 1

Definitely. So yeah, I know. We've talked about this already, but I do have some specific questions about your what you observe in your students using social media. So would you say that you noticed mostly negative, mostly positive, or a mix of social media impacts at school? So things that happen because of social media?

Speaker 2

I think what's brought to the attention is only the negative. Yeah, not necessarily the positive. Yeah, the problem with it is is there's a lack of values attached to it. Yeah, definitely you know if if there were if it came with a set of values that this is how it has to be used. If it's not used that way, you cant use it. Because it's now. It's just a free for all. Yeah, they think that they can see what they think they can write what they think they can take pictures of anything they want.

Speaker 1

Yeah, definitely.

Speaker 2

They can, you know. Discredit people, whatever it is, if there are no boundaries. There are no real guidelines. Now I know, it says you can always report these things. And we have done there were fake school accounts and things we did in the past, and we have reported those. But the damage is done. Yeah, like the damage is already gone, so. Yes, it's I would say it's mostly negative. Now, there's probably some positive stuff out there, like, for instance. Well, I know there are. I know there are. Really positive stuff. So for instance, we would be. You

would be looking at other people's Twitter sites, for instance, and getting ideas of things that you could be doing in school. Be the kids could be looking at assignments people have done and saying, oh, I never thought about sending it in. That way or so. The availability of information and knowledge, as I said at the very start, if it's positive, can be beneficial.. Yeah, what I see, though, is very much. Yeah, the negative aspect of it. Where there is no quote, there are no codes, there are no values. There are no rules of of conduct and use, and that leads to so much arguments, offence, fallout, sometimes police involvement. Because there isn't. There hasn't been that. This is how you should be safely using it. I mean we do it in school, but by then, but they've done it. They've already been using it for three years.

Speaker 1

Yeah, I honestly think social media companies need to crack down on like younger users. They say oh, you can't download this app if you're under 13. Well, lots of people do. It's easy to bypass of course.

Speaker 2

But kids do positive stuff with it. I mean, they do. Of course, they do and they use it for research, and they use it to understand what's going on. In the world. But a lot of that should be teacher Lled A lot of that should be what's going on in schools. We should be embracing that a bit more. Maybe than we already are. And that requires a bit of adapting, learning and teaching strategies are just a bit new and different and creative, and again, that's something that we're all. It's about trying to get staff to embrace the digital. Picture so they know what's out there and they know how that would have an impact. On what's going on in the classroom?

Speaker 1

So, a huge a huge part of It is these kids are just like Oh well I know More about this than you?

Speaker 2

100% they do.

Speaker 1

You don't know the long term impacts of that. You don't understand how when you're not face to face with someone you're not able to have that same empathetic connexion, yeah. And that's why people post mean things online, so it's this sort of attitude of oh, I I know everything about social media. Something as simple as when you download a new app. If it uses behaviour modification, the user has to know about. That the idea that you can download an app that's using designed specifically to modify your behaviour without you consenting to that it's you shouldn't, that shouldn't be allowed. I don't stand where it still is, but money basically.

Speaker 2

Yeah, well that's it 100%.

Speaker 1

So final question. Are there any other observations you've made about how teenagers use social media?

Speaker 2

Let me think about this.

Speaker 2

That I see is initially around well-being. Aspect, so the emotional side of it, so there's. There's the use of it for learning and for communicating. And gaming, and you know, there's a huge range of stuff that young people use it for. But the well-beis the bit that is hardest to deal with, I think, because it's sometimes very hidden, and you can't. And perhaps. I don't

think young people are even really aware of this now, and I mean my niece at 17. My sister had said to her you need to take a break because she was actually stressed about the fact that she wasn't able. She was like like you like like Hanna like really studious and wants to wear working hard but. Couldn't keep up with all the stuff that was going on digitally and so ended up feeling really overwhelmed and like. And if I don't respond just now, and and if I if I don't get back to her, she'll think of this. And what if I?

Speaker 1

Yeah, it's the idea that you should be available 24/7 and actually you just don't have to be like your friends like obviously. Yeah, your friends shouldn't get annoyed at you if you're not responding to social media, yeah.

Speaker 2

And why should? You be. Where is the downtime now? Like where is the downtime? That's a. I suppose that's another observation. There is no disconnect unless you physically force yourself to do it. I haven't looked at that phone since. I don't know, maybe. Until you came in there and it was ringing since 7:30 this morning and on. My phone I don't have time. To look at my phone, right?

Speaker 1

Yeah, yeah, that is the one thing I find most screen time. On days when. I'm busy is just liken really low. Even with the amount that I know about. I'm not perfect. I don't like I, I don't use it in a completely healthy way all the time. And that's a big part of. Yeah, isn't something that you can completely overcome. Understanding it gives you the agency. I don't like people should be especially 13 year olds, 14-year-olds should be using social media without understanding it modifies your behaviour. It's Designed to do that to make money. No, they're not going to keep your data safe.

Speaker 2

I don't know, has that been helpful.

Speaker 1

Well, no, that's been really helpful, yeah?

Appendix 3 – Information Architecture



Appendix 4 – Content Plan

— activity one

You'll learn about some of the main social media design concepts, and then asked to do a quiz on what you've learned!

information

- 5 concepts
- illustrations/mockups - use arrows

Infinite Scroll

What is it? This is a feed of posts that never end. Social media companies personalise these feeds to you based on the type of content you interact with.

How does it work in your brain? Endless new content keeps us hooked because our brains think whatever comes next could be helpful. This effect means it's difficult to stop scrolling, because we don't have to actively do anything to keep scrolling - there isn't anything to make us stop.

Why? This type of feed may seem ordinary, but , when social media apps were first becoming popular, you would only see a specific number of new posts that people you follow had posted. You had to go to the 'Explore' tab to see anything else. Often there are adverts between posts now, so changing to an endless feed means people see more adverts. Then social media companies get more money.

Immediate Feedback

What is it? Likes, comments, and replies that you get straight away whenever you post something.

How does it work in your brain? Our brains are always looking to make sure our social circle approves of us - this is normal! Social media likes, comments and replies give our brains a kind of 'reward'.

Why? This means that social media can become very important to our social lives, so we use it more. This means social media companies get more money

Screen Layout

What is it? TikTok's screen layout has two main features: 1) It takes up the entire page and 2) It plays automatically. This is also seen in other apps that have short video content, like Youtube Shorts, or Instagram Reels.

How does it work in your brain? This means you are less distracted by other things, so your focus stays on the content for longer.

Why? You spend longer on social media, and you are more engaged with what you see.

Image-centred Platforms

What is it? Most social media platforms mostly contain visual content - pictures and videos.

How does it work in your brain? When something looks better, we think it works better. This means that content will do well on social media if it looks pretty, fancy, or aesthetic. This also means that things that don't look 'nice' won't do as well.

Why? Nice pictures will keep our attention far more than words will, which makes social media apps more engaging, and then we use them more.

Pull-to-Refresh

What is it? The feature where you have to pull down to see new posts.

This feature requires a user to pull down on their screen to see new posts. Pull-to-refresh is a common feature on many social media platforms.

How does it work in our brains? Similar to the 'Infinite Scroll', our brains think that whatever comes next will be helpful.

Why? This means we will keep looking for new content, so people will post more content, and spend more time on social media apps.

— activity two

You'll be asked to work in a grup, and use the concepts you learned about in the first activity. You'll be given a design challenge, and asked to come up with a solution. Work in a group, and make a poster that talks about your idea.

Challenge 1

Challenge: You are part of a design team at a social media company. You decide how to improve features that exist, and which new ones to add. Your boss comes from a business meeting, and says you have to find a solution to the rise of people breaking your age-limit rules. Users are supposed to be over 13 when they start using it, but data suggests lots more under-13s are creating accounts. You have to come up with a better way to age-verify users. What do you do?

Real Solution: Instagram, in 2022, requires users to upload ID, get verification from adults, or use age-verification video technology. They also use 'nudges' for under 18s, to encourage them to use the app less, or explore different content.

Challenge 2

Challenge: You are part of a design team at a social media company. You decide how to improve features that exist, and which new ones to add. Your boss comes from a business meeting, and says you have to create new ways to combat misinformation on your mobile app. Lots of people are posting misinformation, and people can't tell what is true and what isn't. What do you do?

Real Solution: Youtube and twitter both use 'soft approaches.' This means content can be reported, and a warning will be added. There is usually no consequences for the account that posts the information, unless there is danger to life, or repeated issues.

— activity three

≡ List view

research papers on filter bubbles

- 📄 Redefining Filter Bubbles as (Escapable) Socio-Technic...
- 📄 Echo Chambers and Their Effects on Economic and Poll...
- 📄 Fake news and ideological polarisation: Filter bubbles a...

+ New

— feed groups

- 5-6 images for both, that are under fair use
- figma template for instagram, to put in

humour

fairly easy to do, its just memes

— info

You'll be asked to answer a couple questions about your opinions and interests, and then you'll be shown a social media feed. You'll be paired with someone, and asked to talk to them about it. Now you've seen a social media feed that isn't much like yours. Go and talk to your partner about what this made you think, and feel.

— quiz

- do you engage with - political and informative content, or, entertaining content
- entertaining - do you prefer funny content, or lifestyle content
- do you prefer beauty and skincare, fashion, or both

questions

- multiple choice (does x concept do x, x or x)
- yes/no (is this x concept)

Question 1

Which two features work because our brains think whatever we see next could be helpful?

- Infinite Scroll
- Immediate Feedback
- Screen Layout
- Image-Centred Platforms
- Pull-to-Refresh

Question 2

What are the two main features of screen layout on Tiktok, Youtube Shorts and Instagram Reels?

- It takes up the entire page
- It focuses on visual content
- It plays automatically

Question 3

How does this screen layout keep you watching for longer?

- Our brains think it is helpful
- We are less distracted
- It's important to our social life

Question 4

Why does content that looks more appealing do well on social media?

- We think things that work better, look better
- It gives our brain a reward
- It keeps our attention

Question 5

Why do likes and comments matter to us?

- It means our social group approves of us
- It gives our brain a reward
- It keeps us engaged

Algorithms enable users to view content they enjoy and create a personalized feed (source). This is due to the fact that humans naturally prefer individuals who are similar to them (Storr), and social media amplifies pre-existing social structures and problems (Syv.). While technical studies indicate that filter bubbles have little impact (source), it can be argued that such studies do not consider the social lives of users (source1). By considering social lives as an extension of digital lives (Syv.), we can clearly observe the emotional and societal consequences of filter bubbles, which can affect social cohesion, conflict, and attitudes (source2).

— what do i need to know?

- does exposing teenagers to others views and encouraging face to face discussion with different people help mitigate negative effects of filter bubbles?
- what different categories there are for filter bubbles/echo chambers
- how they impact how adolescents engage with each other online and in real life
- how adolescents end up in specific filter bubbles/echo chambers

beauty and lifestyle

skincare, makeup - product recs

— info page

catchy title and subtitle

Social Media & You: Understanding the Impact of UX Design on Your Brain

explain issue

The effect of social media on mental health, especially for teenagers is not straightforward. It's important to remember that social media can affect people differently depending on how and why they use it, as well as the platform they use, and that using social media in moderation can benefit teenagers. However, many educators, parents, and experts worry about the impact of social media on young people, and see negative impacts every day. Social media platforms are designed to keep users engaged for longer periods of time, and this is not generally understood by the people who use them. This resource teaches young people about how social media companies use User Experience Design (UX Design) to achieve this and how it affects their brain.

benefits for teachers & information

This resource is intended for classroom use and involves a lot of face-to-face collaboration among students. As a teacher, you can set up an online classroom to allow your students to engage with the activities discussed below. You will have access to more in-depth information about each activity to help facilitate learning. You will be given a unique "classroom code" that will enable your students to join your classroom from their own devices. This includes the ability to see who is in your classroom, what activities they have completed, and other important information. You will also have access to resources that discuss the different impacts of social media in more depth, such as developing empathetic communication on social media, the impact of filter bubbles, and other interesting information.

activity one information

In the first activity, learners will explore the basics of social media interface design. They'll delve into topics such as the infinite scroll feature, likes and comments, screen layout, image-centred platforms, and pull to refresh. Understanding these features will help them recognize their impact on the brain when using social media, and why social media companies design them this way. By doing so, they'll be enabled to make informed choices about their use of social media.

activity two information

In the second activity, learners get the chance to collaborate and apply the knowledge they gained from the first activity. They will be appointed to a group and given a design challenge that tackles a typical user issue encountered in social media. This may be a current or past issue. They will work together as a team, come up with a solution to the problem, and present their idea to the class. After that, the social media company's implemented solution will be presented to them, and they will be asked to reflect on it. This activity aims to help learners understand the purpose behind design decisions made on social media and who they are intended to benefit.

activity three information

We've found that on social media, people tend to only show information they already agree with, which is called the "echo chamber" effect. For the third activity, we'll have a quiz about learners opinions and behaviors on social media. This will help us simulate what the learner might see on social media. We'll show them a different kind of social media feed and ask them to explore it. Then, they'll be paired with someone who has a different kind of feed and asked to debate the differences. . This activity will help them understand that and see things from other people's perspectives when you interact with them on social media.

Appendix 5 – Interview 2 Transcript

0:0:10.810 --> 0:0:14.340

Speaker 1

Do you have any other questions about it?

0:0:19.340 --> 0:0:19.680

Speaker 2

No.

0:0:14.830 --> 0:0:24.660

Speaker 2

So, apart from my school and my name, I won't be attached to it because we're supposed to go through Glasgow City Council to get permission for this.

0:0:23.760 --> 0:0:26.30

Speaker 1

Yeah, yeah, yeah. No, it's anonymous.

0:0:31.880 --> 0:0:35.250

Speaker 2

I'm not doing it as a headteacher in Glasgow. I'm doing it as a headteacher.

0:0:39.370 --> 0:0:39.870

Speaker 1

So, first of all, I'd like to know a bit about how you think your students approach social media. The elements could be positive or negative, and you think they could approach it differently.

0:1:12.210 --> 0:1:28.170

Speaker 2

It's one of the things that caused us the most issues. The constant addiction to their phone has a huge impact, not just on interruptions to learning, but on what we've noticed. Now I'm teaching 30 years my background, actually computing.

0:1:29.10 --> 0:1:36.830

Speaker 2

But what we notice is that they cannot concentrate at all.

0:1:36.750 --> 0:1:37.60

Speaker 1

Yeah.

0:1:37.690 --> 0:1:47.820

Speaker 2

And I'm not saying all of them because some control it, but we have groups of young people where everything has to be a sound bite. There is; they can't cope with anything.

0:1:48.560 --> 00:2:44.480

Speaker 2

So as they progress through the school, that becomes a much bigger issue because even sitting for 50 minutes in a period, they can't, they can't do it, they can't concentrate. So even then, during an exam, the concentration level is just not there because they're used to maybe two or three minutes. Look at your phone for two or three minutes if you can get those two or three minutes from them. So that's a big that's had a significant impact and made us. Look at how we organize our classrooms. So we now have a policy where the phones should be in their bags or on the teacher's desks. I observed a lesson with a maths teacher the other day. Not one young person had their phone out and saw even just the atmosphere within the classroom, and the attitude to learning was completely different because no one was distracted.

0:2:46.430 --> 0:3:15.300

Speaker 2

So it's made us have to look at basically our kind of policies and procedures in terms of phone use. I'll go off piece. So just pull me back if I'm telling you things that aren't useful because I don't want to waste your time. It causes significant concerns, particularly after a holiday or a weekend, we that's the only thing they have been exposed to in some ways.

0:3:15.760 --> 0:4:48.470

Speaker 2

When I was at school, you wouldn't necessarily say something to someone. You might think it, but you wouldn't walk up them. There's a lot of that online. It impacts some young people's mental health because going through adolescence, as we all remember, are all know where to fit; who are my friends? How does that happen now? That was hard enough when everything was face to face, and you could retreat to your bedroom and escape from it. But it is constantly on your phones; there is no escape, and we see that in terms of very, very distressed behaviours coming in and things being amplified there. But also, now getting a generation of parents. Thought do I on social media? So, while we can use that as a positive in terms of getting information out via Twitter and things like that, it is very much with some parents it's very much a negative because they're living their life through Facebook or they're living their life through Instagram, and they are arguing. So, where you had like the school gate and not so much in a second, give it more so in a primary where the parents would maybe disagree about something that the school gate. It's not saying it carried on through Facebook, etcetera and even down to some parent councils having major issues regarding WhatsApp groups and all these things.

0:5:1.700 --> 0:5:3.700

Speaker 1

Yeah, group chats are a big one.

0:5:6.970 --> 0:5:26.110

Speaker 2

Yep, on this team, I'm very, you know, I won't get involved in anything like that. But what you're then left dealing with in a few of my colleagues have been in this position. I've luckily had. And you're then dealing with conflict between parents, which is out of their scope.

0:5:26.710 --> 0:5:46.840

Speaker 1

There's a lot that comes up in the research about the lack of empathy and digital communication, how you need face-to-face contact to practice empathy, and the role of parents and influencing. So

you have to set aside your phone as well. And you do get a bit distracted sometimes. And so there's a big part of it with parents; research also shows that.

0:6:17.730 --> 0:6:37.590

Speaker 1

Parents are more likely to trust parenting advice they see on social media than anywhere else, which is not monitored at all. And it means if its blatant misinformation will usually be a warning. But there can be twisting of the facts beyond that, and there's an aspect where I want to approach so.

0:6:48.990 --> 0:7:20.110

Speaker 1

It's about understanding when you have a falling out with someone; you don't only text about it; you need to read at least your call them or speak to them in person. And that must I think that should be an absolute rule. That's the real world. I like. We've sent it with my brother because it makes such a huge difference, even when he's gaming. I told myself; it's better for society if the long term if you video calls your friends as well you're gaming instead of.

0:7:28.460 --> 0:7:28.840

Speaker 2

So would you say that education on how you, how the social media companies are getting them hooked in the 1st place? That's kind of the main focus of this particular project, the report that I'm writing alongside also recommends other things, but to get my degree, I need to be a bit narrower. So that's what I'm focusing on. Would you say that would be beneficial?

0:8:1.860 --> 0:8:4.370

Speaker 2

So is it that gives me the question again?

0:8:5.190 --> 0:8:12.80

Speaker 1

Umm, the with an education on how social media companies get them hooked on social media in the first place.

0:8:14.240 --> 0:8:44.330

Speaker 2

I think yes and no, because I mean over the years, as I say, I'm a computing teacher, so I've been involved, you know, for 29 years on educating young people on the youth computers etcetera, both just in terms of using them for school work etcetera. But then so Internet, I started probably teaching about the Internet about, I don't know, about 16 years ago, 17 years ago, but at that point, it wasn't commonplace, so the fundamental role of education has changed in terms of how we educate our young people, I don't think.

0:8:56.690 --> 0:9:11.720

Speaker 2

As professionals, we are currently equipped or, well, not prepared to be able to teach young people about those things because the world is changing so much and so quickly.

0:9:14.560 --> 0:9:24.740

Speaker 2

What is the right pathway for education? So you're saying a lot there that to me make a lot of that. Do you know common sense? But I know that's not common sense, but also.

0:9:26.230 --> 0:9:36.770

Speaker 2

The approach to education on the use of social media, etcetera, is because of the increase when I started teaching the Internet, for example, parents when used to using the Internet.

0:10:6.160 --> 0:10:31.390

Speaker 2

There's nothing wrong with my child doing it, but as long as nobody does it to my child and others, then I'll put comments on the whole idea. It's much more of a societal issue than an education issue. So we can see the education side in terms of the influence you and if you look at the most recent one being prime and how they've marketed.

0:10:40.700 --> 0:11:2.420

Speaker 2

It ended up with actual fist fights over these kinds of things theft. And you're thinking just ridiculous. But how do you edge we how we design education come from? How do you explain to young people that they've been manipulated and bought by someone else? OK.

0:11:3.130 --> 0:11:33.860

Speaker 1

I'm trying just to provide the information in a non-judgmental manner. So, I've got a list of the five main features I want to tackle and how it gets you. The first one is infinite scrolling. So that's how you just keep scrolling and scrolling. When I was that age, you saw your friend's posts, and the feed stopped. That's not what it's like anymore.

So that's number one and #2 immediate feedback to do with how likes and comments and how to influence your brain and to do with specifically short-form video content like contact talk, how the screen layout keeps you scrolling as well and how they're deliberately designed to be image centred platforms and how that impacts your brain as well and the. whenever you refresh the feed, to always have that new stuff with big psychological impacts. And so those are the five main features I'm looking at just providing information on and how that impacts your brain.

0:12:19.310 --> 0:12:38.110

Speaker 1

And why so? Should media companies have made it that way? But the answer is usually to make money. And so that's just basically the five min concepts I'm exploring to provide about a couple of educational resources. And just like general advice from the spectrum of someone who knows a lot about the specific design of it.

Speaker 1

I'm making phone choices and want them to be able to make informed choices. I don't think currently, especially teenagers, can make some choices about their social media use, especially the types of violence.

0:13:31.890 --> 0:13:44.600

Speaker 2

Also, I think the lockdown and moving to the digital platform for young people they're educated significantly increased.

0:13:45.930 --> 0:14:7.330

Speaker 1

Yeah, I think that did. I think that was kind of on the shift because when I was in high school, it was like, well, I mean, I went to my program, so I was quite a unique environment. So I'm not sure how much of that applies to your group in general, but most people were on social media. It wasn't that weird. If you weren't, you didn't get laughed out. The main call profile is group chats, but it wasn't nearly as advanced as I'm going to and wasn't nearly as integrated as now, and I think that lockdown played a part in that because that's when everyone was online.

0:14:35.440 --> 0:14:47.400

Speaker 1

And so, I'd like to have you want some questions about just digital enforcing generally. And so, in your opinion, how digitally letter it does you, would you say your students are, yeah.

0:14:46.810 --> 0:15:3.320

Speaker 2

Not very, not very. Although we do deliver. So when Glasgow's moved to the iPads as well, which I don't think matters. But anyway, that's neither here nor there because they bypass it in their own YouTube. So it's not helping.

0:15:1.310 --> 0:15:4.330

Speaker 1

Yeah, definitely. There are so many ways to bypass it.

0:15:16.60 --> 0:15:47.350

Speaker 2

We've got they've got two periods a week and ICT, and we do a lot of stuff on digital literacy, the safe use of communication, and all the rest of it. Do they understand it? No. That is the answer. They could tell you the facts, so they know they can relate it to what they do. The answer to that is no. And then back to. It's not just about us having young people be digitally literate. There is no point in that being the case if parents don't understand what's happening. And we've tried running things for parents, and there's just not that appetite to come along and learn. So what we are saying in school about screen time, about you, what you were saying about face-to-face communication and all the rest of it, that's not been backed up in the home. Therefore, the impact that we can have is minimal. So we are trying to enforce it, I suppose, in some ways by not having the phones in class and all of that. But I mean, they sneak them out. I'm not naive enough to think that.

0:16:20.990 --> 0:16:35.550

Speaker 2

We've certainly lessened our issues, but it's still there, even as you would mention group chats. So that idea of, well, if you don't like what's happening, you leave, no, you can't leave the chat.

0:16:40.670 --> 0:16:49.160

Speaker 2

Even though, though they understand that you would that's harming them, there is a way for them to be able to stop that.

0:16:49.950 --> 0:17:21.660

Speaker 2

They would take that step because of the consequences. Do you know? And I suppose goodbye to when I was in school; you were part of a group. You didn't always like what the group were doing. But you're only going to leave the group because where will you go? So now it's just amplified in terms of the platforms and things. And then the admin and the group have control, so they'll kick out whoever's not flavoured and let them add them back in later that night. And it's a wee bit better now. And you can't go back and read the comments; if you're, I did take a group where your eyes there would be horrible about the person and add them back in, and then they would be able to see what everybody else said about them. And so we can do all that education side of things. But they then don't have the strength. So they can tell you all these things, but they don't have the power in the backup at home to make the steps that will make the difference at this age. What I always hope is. When you it's a lot of things in education, we don't always see the results. We see exam results but don't always know the impact of the softer stuff you do in school. So you're hoping that maybe as they move through school and mature, they take the knowledge that they have and can apply it. So we may not see an immediate change, but your whole thing is that conversations with seniors differ from conversations with younger kids. So that we knowledge. So they're taking the knowledge that they've got, and they've been able to apply that knowledge, are we bit better as they mature, but by that point for some young people, a lot of damage has been done to their mental health. Of its say, which I heart, it says, and we've committed time to it within the school. So we are the amount of time that they have in S1. So that in terms of the Curriculum for Excellence outcomes, we're not just delivering those outcomes, but we're giving time and space. So it's not put into a tiny box part of a PSE list, and we're giving it time in Spain.

0:19:3.730 --> 0:19:34.160

Speaker 1

Yeah. Another thing I was considering was how it could be implemented in different subjects. And I've just it was just kind of swirling, but in the back end, I don't do anything about it yet. But in my reading over, and found different information that I think could be applied to different subjects. So you've got the impact and, for example, Echo chambers on social media, the social implications of that, I think well, I took advance our modern studies and click here, and I think that would be a great thing to discuss in that class. For example, there are other things you can talk about. In RE, for instance, I don't think that's good. I don't know how RE works in your school, but I imagine it could be implemented there. And there are other things to do with, for even language sharing on social media is fascinating.

0:19:54.830 --> 0:19:59.960

Speaker 2

I see on the language thing the English teachers have to teach them to write in English. What are the expected and some scripts my partner marks for? Questions being answered and text speak. And you're like, that's how your English candidate, how are you? Earth you social subjects and not even advanced higher level in S1S2 level. I can't remember if it's S1 and S2. Doesn't matter too much. They do a lot on sources and trusted sources and animation. So we do it and IT. But they also do it, and there cause one of the things that we've Connell looked at is what is the code elements that we want young people to know. If you're going to use iPads across ACUM, we can't all be teaching them. When you have done it, I cannot order what you will use the iPads for, so one of the obvious things is finding information. So that part of the kind of

induction, if you like that we do, is about valid sources. And how would you determine whether it's a valid source of information, etcetera, etcetera? So we do. Can I cover that within the curriculum? Because just Googling that it's not always going to get you. I've lost even if they take Wikipedia as being an encyclopaedia.

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0:21:40.310 --> 0:21:54.0

Speaker 1

Yeah, if you go, if you do this, there's a funny example. I think. I don't know if it's still there, but someone in my year one point changes the page on buying near the bear from the kids TV show to say something about it. I can't remember what it was. Someone in Saint Thomas Aquinas made the change, just something silly about the specifics of that school, and I can't remember what. It's probably changed by now, but that was what.

OK. So finally, I do have just a couple more questions that your choose social. So would you say you notice mostly magazines and practice social media at scale, or do you think there is any positive impact to observe?

0:22:29.70 --> 0:22:41.560

Speaker 2

Regarding social media, it is to get communication right there about things that into ships. But the problem that we have now is we would always use Twitter. Kids don't use Twitter. To the can, I platforms moved on? We've got the dance school of Scotland and here as well, and we've used social media, but we've worked with you in the rows in terms of rushing and the communication team. So obviously we've got to sit down school Scotland. So we're trying to get our name out there and beyond. So we've moved to Instagram to try to get it because it's young people we want as opposed to their parents, and the first is if we can capture their imagination then.

And get them talking about it. So we've used it for that. Apart from that, I'll be honest. No, I can't. I just had no positive.

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0:23:36.750 --> 0:23:44.180

Speaker 1

Umm. And they're just any other observations at all. You've made about social media or how your students use it like that. We haven't talked about it.

0:23:49.220 --> 0:24:4.410

Speaker 2

You know, we'll use it as a kind of homework. Help chats. So they will have their group. The year and glow gave us a feature. I don't know if you remember that we did have a kind of chat feature within GLOW where it was a safe environment that was used quite a wee bit. Teams that don't suppose you would take teams have been on xxsocial media, and we used the chat facility quite a wee bit. There are a lot of the kids who still use that until teams or communication with staff, but that's a closed invite, so it's not opening the social media, but to be honest, you know, in education that has given us nothing in my experience. x

0:24:45.760 --> 0:24:52.840

Speaker 1

Yeah. Well, that's yeah. OK, that's all the questions I have for today. Thank you so much for everything you've been through, hell.

0:24:52.140 --> 0:24:59.270

Speaker 2

Listen if you need anything. If I need to. If you need anything else, or if there's anything that can help you, just drop me an e-mail, OK?

0:24:58.730 --> 0:25:0.350

Speaker 1


OK. Thank you so much.

0:25:4.190 --> 0:25:5.620

Speaker 2

Thank you. Thanks, bye, bye.

Appendix 6 – Persona



Name

- 14
- S2 pupil
- Glasgow

Bio

[Name] is 14, and in S2. They are on TikTok, twitter and instagram. Their friends are all on these apps too, and they discuss things they see on these apps a lot. [Name's] parents are on social media, and follow all of their accounts. Their parents sometimes get into arguments on social media too. They discuss social media at home, and their parents think it is a great invention. Someone they knew was getting cyberbullied quite badly, and they weren't sure what to do about it. [Name] finds it difficult to focus on homework, and is usually quite worried that they will miss something on social media.

Personality

Introvert	Extrovert
Analytical	Creative
Busy	Time rich
Messy	Organized
Independent	Team player
Passive	Active
Safe	Risky

Interests

STEM subjects

fashion and pop culture

Influences

parents & teachers

friends

social media influencers

Goals

learn more about why some adults like social media and some don't

homework to take less time

Needs and expectations

being listened to

learn about things that are relevant to them and interesting

Motivations

making social media more welcoming for others

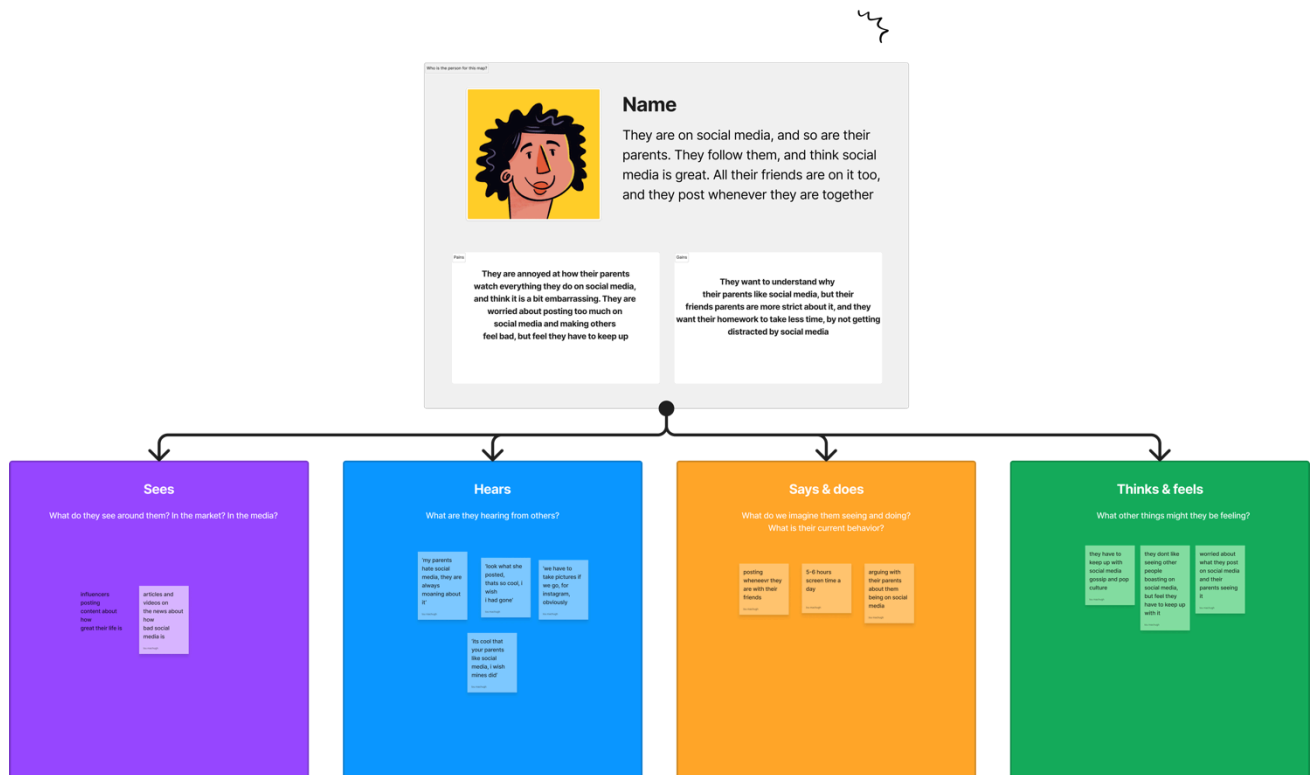
classes that are engaging and about things they are interested in

Pain points and frustrations

feeling left out because of social media

their parents watching everything they post on social media

Appendix 7 – Empathy Maps



Appendix 8 – Interview 3 Transcript

0:0:2.960 --> 0:0:4.90

Speaker 1

Do you have any other questions?

0:0:5.160 --> 0:0:6.110

Speaker 2

No, no.

0:0:6.790 --> 0:0:19.600

Speaker 1

OK, so first, could you tell me a bit about what you think, how your students, particularly in the younger years, should approach social media so it can positively impact their development?

0:0:23.620 --> 0:6:7.280

Speaker 2

I mean, certainly I am in many respects quite in favour of social media, and I think that it offers young people, well offers all people, but offers young people particularly a chance to communicate with others. And I think that particularly through the pandemic and it was a lifeline for so many young people and we are other than their level of isolation would be particularly high. I also work in a school where it has a very unusual cultural makeup. So, the majority of our young people who attend their school are Asian. And we are, I think it's 67% Asian pupils attended here and culturally within the South side of Glasgow, there is a lot of girls, in particular from families who live very small lives in a physical sense. You know they're allowed to attend school, they would attend mosque and they would perhaps be allowed to see family, but they're not allowed out at weekends or evenings, you know, to meet with friends or peers. So, for them in particular, being able to kind of access this other life on social media and it opens their world up and a way that I can imagine 20 years ago wouldn't. And so certainly I think there's positives in that sense.

And I think however I have significant concerns about the way it's used and certainly I think the amount of time that they spend on social media. In terms of their mental health, I mean, we're certainly aware that a lot of young people are essentially addicted to their phone. It is their absolute lifeline. And I would see a downside coming out of the pandemic is that more and more young people have become fixated on being on their phones as opposed to having any face-to-face communications and we've got an increase in what's called emotionally based school avoiders and so we have young people who feel they can't leave the house they can't attend to school due through social anxiety. They still might have a very active online social media life and but accordingly I think that for them some of you know that there's much bigger issues, obviously that's why they feel they can't come to school. But I certainly think that. That is a benefit being made for them in terms of their still able to have those social interactions. But, because of that, there may be not feeling the need to then want to come back to interact face to face.

We also have seen a significant increase in since young people came back when the pandemic and the hope poor the quality of their face-to-face social interactions are. So, there's much more conflict. You know what young, what they're willing to say online to people versus what they would say to face so and a lot of my time is spent trying to support young people who have had disagreements

online, but then it comes into obviously the face to face one. But yeah, there is significant conflict there where they're not understanding consequences quite often. They're not understanding from a legal point of view that if they are terribly abusive online, if they are threatening online, that there's ramifications which quite often have been now ending up in police involvement to do with the Communications Act.

There's also a kind of sense that they would rather many young people live in this online world, rather than be here and present, so they set in one room, but will be in their phones and I know that's adults as well. But certainly, it's really prevalent here, where they can become very panicked if they're asked to put their phone away, which obviously we would be expecting. Well, learning is going on and they can't come off it. So, they're on it and you know we hear of contacts taking place at 3:00 o'clock in the morning and so they're not sleeping. I think in many cases parents aren't aware of all of this until there is a fundamental problem, and by that point maybe things have been going on for weeks, months, even years, and that have become quite clear patterns.

0:6:24.440 --> 0:6:42.870

Speaker 1

So you would say that it can be good to for letting them communicate when they can't. Otherwise, like in the pandemic, and for people that aren't able to get out the house, but also that it can impact the quality of face-to-face interaction and that can create other social problems.

0:6:43.840 --> 0:7:53.590

Speaker 2

Yeah, definitely. I think even you know, if you take an example of something that we would be expecting them to do for a whole lot of learning things would be to work in a group. Show that they had strong communication skills, talking, building on one another. We actually have seen a significant swing, a significant regression in that in terms of their ability to if someone makes a statement to then build on that statement to further it, to ask questions, to develop an argument, to have a discussion, to have a debate. We are actively trying to reteach a lot of these skills. And we've also discovered that their rate of reading appears to have increased, so they seem able to scan read much, much more quickly, but the ability to engage with any lengthy text in concentration levels have decreased.

0:7:55.10 --> 0:9:9.730

Speaker 1

So what I'm trying to do is my general hypothesis is that, well, I come from a design background, so I understand why what the social media companies are doing or how they're designing their apps, so that that addiction is taking place. And I'll I think that an understanding of that is a fundamental part of being able to use social media effectively. So what I want to do is create a guide so that. These young people can learn about, for example, why is? Why is it that when you go on social media, you keep scrolling and it never stops because it never used to be that way? That's an addition that they've made to make it more addictive. And so, things like that and then just encouraging a sort of in person interaction with that. So, I'm designing an online learning platform, but it's meant to be used in person in classroom so that they can have that face-to-face interaction and a sort of reflection and discussion on. Why it is that social media has made this way in a non-judgmental manner. So, would you say that would have a place and perhaps help be helpful to let them reflect on factors that influence your relationship with social media?

0:9:11.90 --> 0:11:52.390

Speaker 2

Absolutely. I think understanding the why behind it because a lot of the time and less and we do a lot of work at it in our PSHE program you know around this and we talk a lot about critical literacy skills and so on and being able to you know understand. Definitely won't be anywhere to the depth of understanding that you would have and given that this is your area. And yet I mean schools are desperate for this because it is a. I would say more than any other issue in social media is at the root of most conflicts that we face between young people and their parents, young people and staff members, young people in each other, and what a couple of things you mentioned there. One the time and the sort of. And I think the urgency of time and accessing social media would be really good for young people to understand. The in you know Snapchat and particular, which is their medium of choice at the moment. Snapchat, like the things are disappearing and means that they feel they have to look at it. And they also struggle with the idea if they're getting a notification, that they don't have to jump to that command. Since lives are changed, a lot of the years and approaches and that how much of their feeds are not, things that they have directly selected but are being from an algorithm selected for you. You know, we're particularly around a significant concern that I deal with. I'm a child protection coordinator, is that one of the main issues that this sort of police is concerned with? In the UK it isn't like Islamic extremism or anything anymore. That's still there to an extent. So its actually incels. So many young males are still vulnerable to this, and I think all of this social media content that we talk about to them is a lot around like your mental health and choosing content that is right for you, understanding when things aren't making you feel good about yourself, and you maybe need change it. But actually, we have this whole subculture going on in that is very reflective of like the Andrew Tate situation.

0:12:39.390 --> 0:12:51.840

Speaker 1

Yeah, that's just completely blown up since I left school. I mean, I went to Notre Dame before it was co-ed, so it wasn't something I had direct experience with, but a lot of people my age did. And since then, it's gotten so much worse.

0:12:53.720 --> 0:13:24.470

Speaker 2

Yeah, I think that's right. The anti-feminism aspect online, which particularly around male culture is hidden within humour and really attractive content. But I think that the way that this is put across, I don't think the social media companies aren't doing nearly enough to perhaps protect in that sort of generation from what the potential impact of that is.

0:13:25.280 --> 0:13:34.210

Speaker 1

Umm yeah, that's really interesting. Thank you. I have some questions about digital literacy now. How digitally literate would you say that your students are, and why?

0:13:36.50 --> 00:15:3.820

Speaker 2

And I would see it's a mixture. You know, I think there's a fairly naive assumption that they are digital natives that they've somehow been brought up in a world. I mean, obviously we've all seen you know, the way people who pack up an iPad or pick up a phone and instinctively know how to. Of

local phone because they watch someone do as they in shape and they know that that's order. And you know when things like iPads being particularly intuitive, I think could induce, but we still find that. In there's certain ideas that young people are protecting app, and I think a lot. I assume the structure of the social media platforms and particular is in fairly obvious for them how to use it, but certainly we don't see an increase in this or computational thinking. They aspects around critical literacy, they're not naturally picking those up. You know it's they're their use of digital content is increasing. But there are understanding of the influences around that and the impact on them is they can't verbalize that if you have a discussion with them and highlight it, then it sometimes like a real light bulb moment. Ohh yes, but there's quite often a naivete here and they believe that they are the ones that you know of. No, I wouldn't get.

0:15:2.810 --> 0:15:19.860

Speaker 1

Yeah, I know more than about this than you do. And you don't understand. There's a difference between. Sorry, there's difference between technical ability and understanding of the impact, and I find they do have a technical ability, but they don't have an understanding of the impact.

0:15:20.630 --> 00:16:51.20

Speaker 2

Yep, I think accessing content but also them in producing content. But I do think in terms of their kind of digital literacy skills. Overall, I don't think as I said that we're seeing, you know, we're still having to actively teach computational thinking. I don't think there's an increase in kids being able or interested in necessarily going to find out about coding or who are coming into schools now who've been sitting away at home, self-teaching themselves different coding languages. And I think that also a lot of tools, you know, schools in particular are very quick to do. Let's teach about word. Let's teach about PowerPoint and Excel, but it's actually to very basic level unless they choose to see for exhale, they choose to do business studies or accountancy or something that might need a particular software program where you would look at it, would they? So over time, there's still leaving school with a range of skills, but I wouldn't see that those skills are any more than I have had. Having not been taught those at like I'm 41, I wasn't taught those at school. But I picked it up along the way. There's no increase from the aspect really in self teaching. The self-teaching is all about access and social media content from a technical kind of point of view.

0:17:1.530 --> 0:17:2.610

Speaker 1

Yeah, definitely.

0:17:4.220 --> 0:17:11.560

Speaker 1

So would you say you noticed mostly positive, mostly negative or a mix of social media impacts of social media at skill?

0:17:13.500 --> 00:18:27.870

Speaker 2

And to be honest, I probably notice mostly negative, and I can advocate for the positive aspects. You know, I enjoy using social myself. I'm no in going to see that. I think that it's not there. But I think that. The number of young people I'm aware of with significant mental health issues and the crippling anxiety the self-doubt, the lack of self-confidence, and so much of that. Got as linked to

social media and I know that because they're making the links in their referencing or what's coming out and as I said also in terms of conflict. So I suppose from an educator point of view. Very few young people would obviously highlight to you. Here are all the positives, so most of the time it enters into the speed of needing involvement from adults. It's because something's not right and something's not working.

0:18:27.870 --> 0:18:35.130

Speaker 1

Thank you. You just as a final question, have you made any other observations about how adolescents use social media? That we haven't covered.

0:18:45.800 --> 0:21:5.180

Speaker 2

I think probably just one last thing. Social media is an extension of their social life, you know, and I suppose I first became aware of this years ago when Facebook started, and it became a thing where they would, you know became it's a point of honour how many friends do you have? With the concept of a friend being a really fluid thing, so people that they've never met but they're friends of friends. But actually, their ability to network and converse, which can also have negative implications and we're consult talking about safety with them and don't go meet people you've never met before, but. I think they're concept of who is who's someone you know is much better than what my perception is. So they will readily add people, have contacts with people way beyond their local area and they see that as a real positive. I get nervous around that in terms of where you know you've always got the, you know the actually know who they are they are they who they say they are and so on. But I can also that I could be from a networking skill and it's actually a real positive and you know, and sometimes they'll give you an example of this where they end up having an opportunity or linking with an organization, you know, they're much more confident about contacting. Am me be businesses or companies or things like that because they fold them online, they see that they are they. And what would perhaps become better to them in terms of where they feel they can access? You know they can contact their MSP directly and make a complaint because of the toilets in the school or something like that and I suppose it's just about knowing how to harness that for positive rather than, you know, using that platform in a negative way.

0:21:5.870 --> 0:21:11.840

Speaker 1

Umm yeah, OK, that's all really helpful. That's all of the questions I had today. So thank you so much for participating. Hopefully. Yeah. Thank you so much. Be really helpful.

0:21:22.330 --> 0:21:37.750

Speaker 2

No problem and good luck with it. And if you do come up with anything and you're looking for a soul to pilot it or anything, just get back into me and then we'll happily do that, OK?

0:21:37.520 --> 0:21:40.120

Speaker 1

Yeah. Yeah. OK. Thank you.

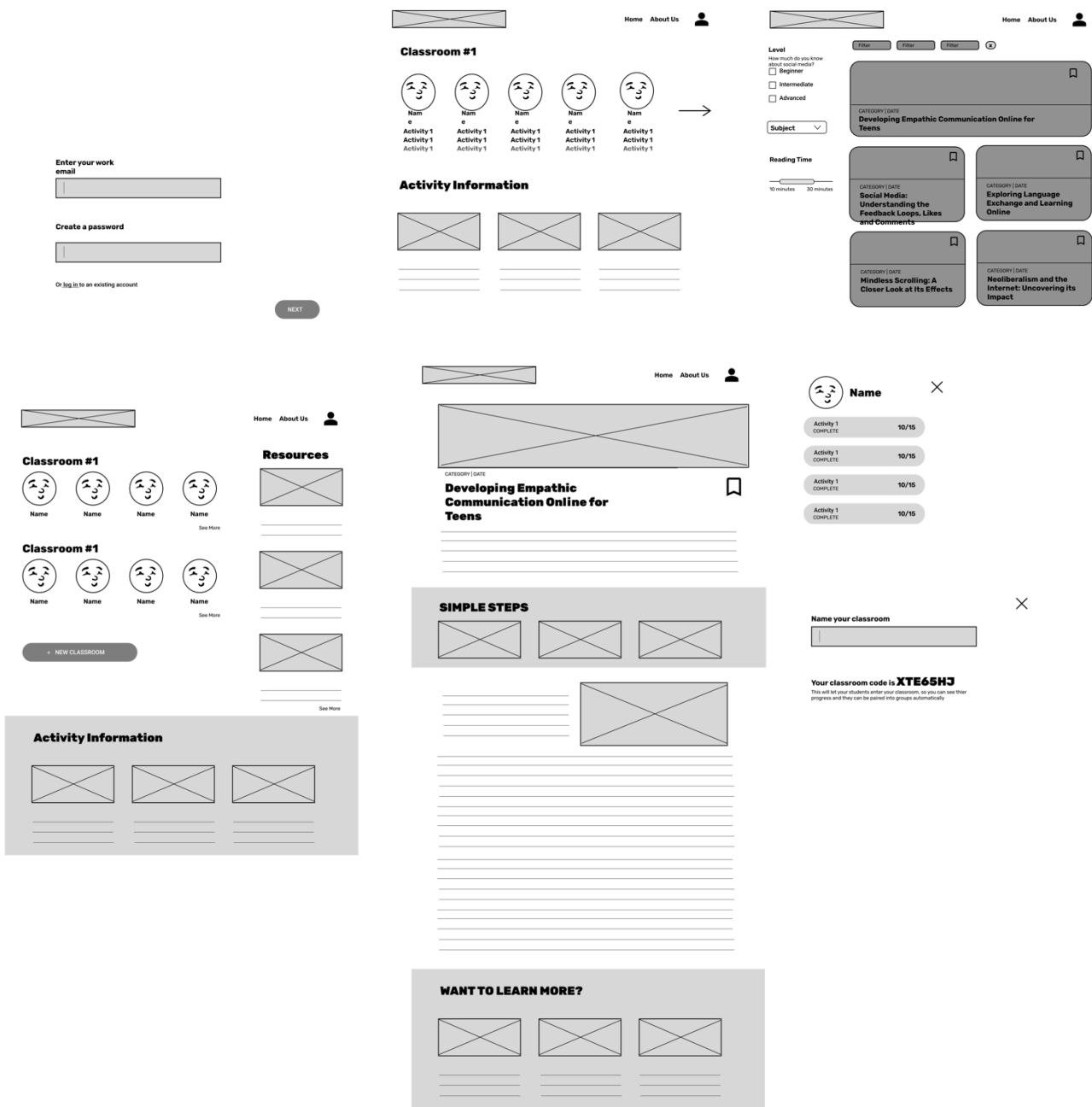
Appendix 9 – Data Analysis

	PARTICIPANT 1	PARTICIPANT 2	PARTICIPANT 3
PUPILS	<p>Introduction of iPad in primary school has caused more equity in technology access</p> <p>Fall outs because of social media</p>	<p>Struggle to focus</p> <p>Don't understand the separation between school/learning technology and personal technology – they write essays in text speak, and trust Wikipedia</p> <p>Use different forms of social media than teachers</p> <p>Understand material regarding healthy phone use but do not implement it due to lack of pressure at home, and peer pressure</p> <p>iPad are easily bypassed, and not helping to learn</p> <p>There are social issues caused by social media use – fighting over Prime energy drinks, fallouts that become worse because pupils don't talk to one another</p> <p>Often have little influence of social media control at home – parents have fallouts because of social media</p>	<p>Compulsion to check mobiles is causing problems with attention</p> <p>Lack of face-to-face communication is causing abilities in critical discussion to decline, and causing pupils to be less able to deal with conflict</p> <p>There is a lack of awareness of how and why pupils see what content, leading to issues such as incel culture.</p> <p>Use of social media is amplifying and causing self-esteem and anxiety issues that are causing pupils to be unable to come to school, or participate</p>
TEACHERS	<p>Varying levels of understanding of social media, but all generally feel that pupils know more than them, and don't listen to them as a result</p> <p>Digital literacy education does not have a</p>	<p>Have had to implement very strict mobile phone policies</p> <p>Do not see any benefits from social media.</p> <p>They try to encourage parents to come and</p>	<p>Need more specific resources that can be easily implemented</p> <p>Often fallouts result in police involvement</p> <p>Often need to point out seemingly obvious</p>

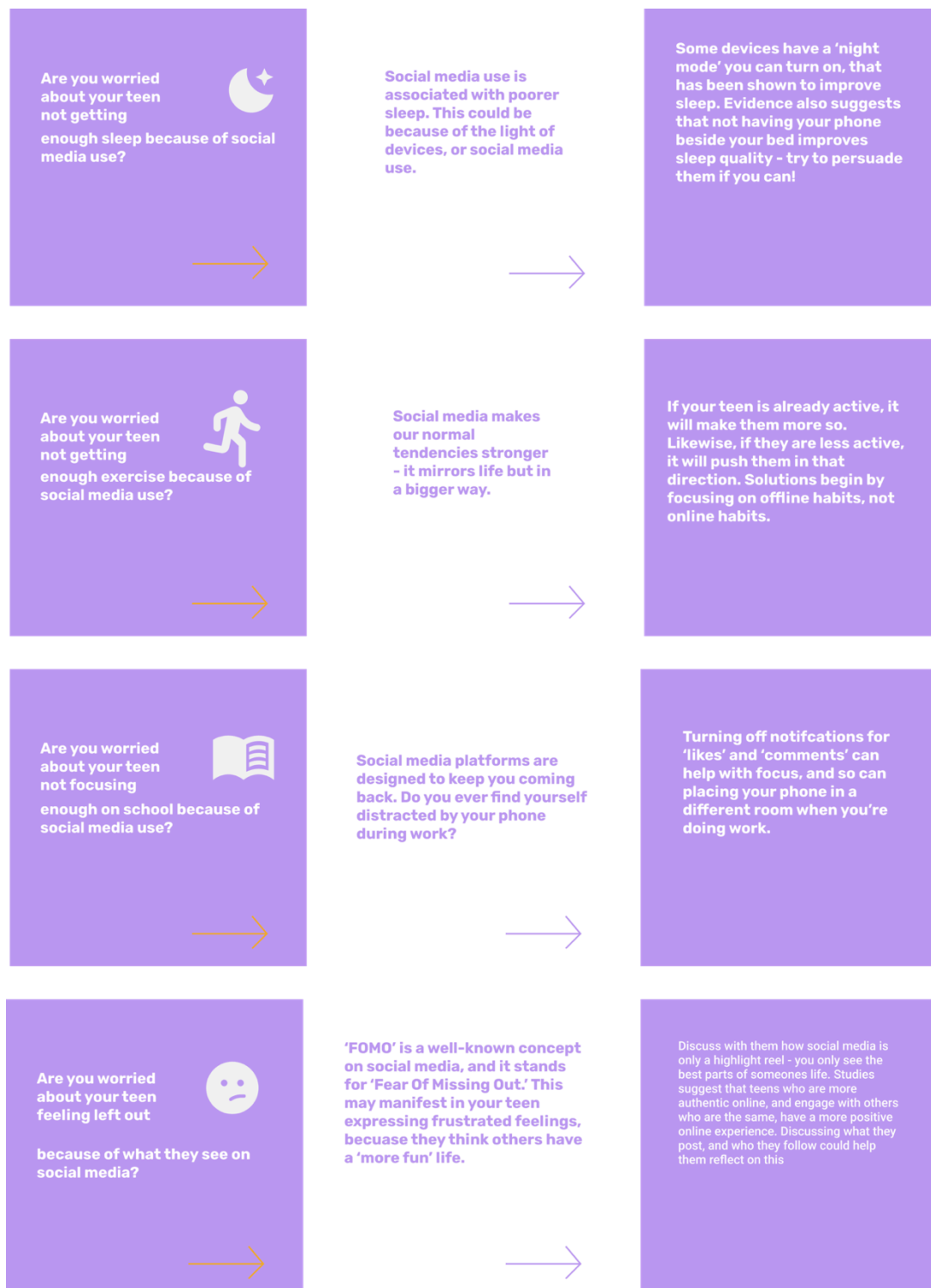
	<p>framework, it is left to individual schools and teachers, who feel quite lost as a result</p> <p>Need more understanding of the big picture of social media and how that impacts the classroom</p>	<p>learn, but there isn't any appetite for it</p>	<p>negative aspects of social media</p> <p>Assumption that pupils are 'digital natives'</p>
SOCIAL MEDIA	<p>Young people aren't aware of the impact it is having on them, and they think they need to be available all the time</p> <p>No boundaries or guidelines lead to social media being a free for all</p> <p>Lack of checks and balances mean young people aren't being looked after</p>	<p>Group chats and being able to see what other people have written about you is an issue</p> <p>Prime marketing has caused a lot of issues in school</p> <p>Fallouts are carried on through Facebook</p>	<p>Algorithmic personalisation and compulsion to check notifications are two core issues</p> <p>Social media companies don't monitor enough about content that can be damaging, such as anti-feminist content. This content and ideology is often hidden behind humour content.</p>
DIGITAL LITERACY	<p>Should be led by parents and teachers to encourage a learning-focused use of social media, in a way that has clear boundaries</p> <p>Focus on responsibilities of using social media</p> <p>Use an EU framework, but generally a bit lost on tackling it</p>	<p>Learn a lot about safe communication and trusted sources, but don't see much behavioural difference</p> <p>Learn about how to use iPads for different subjects</p>	<p>Mixed, applications like word etc are only taught to a basic level</p> <p>They have a technical ability but little understanding of the impact of their digital technology use.</p>

COMMONALITIES	DIFFERENCES
<p>All participants agreed that fallouts are emphasised online, and this causes increased social issues</p> <p>All participants agree that parental influence (or lack thereof) is an important factor in how healthily adolescents use social media</p> <p>2/3 participants were concerned about the lack of a framework for digital literacy education, and worry this impacts quality of learning</p>	<p>Only 1 participant highlighted struggle in implementing knowledge learned in class</p> <p>Only one participant highlighted that iPads were having a negative effect</p>

<p>2/3 participants noted that young people are not very fluent in applications like Office suite, sending emails, etc</p> <p>2/3 participants highlighted that young people are not responsive to feedback on their social media use, because they think they know more than adults do.</p>	
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Appendix 11 – Parental Resources



Appendix 12 – Discussion Guide

Introduction

Background Thanks so much for participating today. I really appreciate it, and your input will be very helpful. So, I'm not sure how much you know about what I'm working on, but I'm a 4th-year Digital Media and Interaction Design student at Napier. I'm working on my Honors Project right now, which is like a dissertation, but we do a practical project instead.

Goals My project aims to explore adolescents' involvement with social media, the xproject involves developing a proposal for an online learning platform that teaches about social media design and its physiological impacts. This will be aimed at adolescents aged 13-15 (S1-S3), to narrow down the educational level I will be working with. This way, adolescents could gain a deeper understanding of how social media interactions impact them by increasing their digital literacy. Evidence suggests that digital literacy should encompass a knowledge of interface design, and certain aspects of social media can have a positive influence on identity development, and certain aspects can have a negative impact.

Purpose and Permission The purpose of this session is to ask you about digital literacy and social media, as a professional, based on your experiences and observations. This will be recorded, and this will be kept securely, in accordance with university ethics policies. This data will be used to inform design decisions. All data will be anonymized. Is this okay with yourself? Do you have any other questions?

Open/Generative Questions

1. First, could you provide your thoughts on how students should approach social media, so it can positively support their development?
2. What do you think would make this healthier than the way they are currently engaging in social media?
 - Ask some more questions based on what the responses are.

Students existing digital literacy.

Now I'd like to move on to some questions about your student's digital literacy.

1. In your opinion, how digitally literate are your students?
2. Why is this the case?

Students use of social media

Finally, I have a couple questions about your student's use of social media.

1. Are you noticing mostly negative, mostly positive, or a mix of impacts of social media at school?
 2. What other observations have you made about how adolescents use social media, as a professional?
- Ask questions based on response.