

OPEN EDUCATIONAL RESOURCES

ADDICTIVE DESIGNS

How and Why Social Media Addicts Its Users

Document version 2024-03-25

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Publisher:

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Ethics and Critical Theories of AI
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1. OVERVIEW

This OER covers the topic of problematic social media usage, focusing on “addictive” design mechanisms and underlying incentives of social media platforms. A main goal of the lesson is to show students that problematic social media usage does not occur by accident; there are purposefully employed design mechanisms which make the platforms more addictive and nudge users into spending increasing amounts of time on them. Social media companies integrate these design mechanisms because they generate revenue from users’ attention and data, both of which increases if users spend more time on the platforms. Cultivating an awareness of these issues and providing tools for students to assess social media platforms and to reflect upon their own usage of them is important for young adults. It promotes digital literacy and a critical reflection on the underlying structures of social media. The goal of this lesson is to create an awareness for both the individual and structural causes and responsibilities concerning problematic social media use.

1.1. LEARNING GOALS

The students will learn to critically reflect on their own social media usage, as well as on the structures and designs that support problematic social media usage. Further, at the end of the lesson students will be able to:

- Describe the impact of social media addiction on mental health and wellbeing.
- Demonstrate design mechanism used to make social media more addictive.
- Discuss issues of privacy and online safety.
- Explain incentives that underlie social media companies’ actions.
- Identify strategies to consciously manage social media usage.

1.2. TARGET GROUP

The target group of this lesson is teenagers aged 15-17 years old who are in grade 10 or 11. The lesson can be used in any type of school. While using social media is not a necessary precondition for students to participate in the lesson, it is assumed that they have some general knowledge of commonly used social media platforms. The hope is to discuss social media based on the students' own experience of using it.

1.3. LENGTH

This lesson is designed to last 90 minutes, including a 5-minute break.

2. RESEARCH BACKGROUND

In today's digital age, social media has become an integral part of many people's lives. While many enjoy spending time on it, problematic uses of social media can have negative impacts on mental health and well-being.

It's important to understand that social media companies have an incentive to retain users on their platforms because they monetize their users' attention and data, both of which increase as users spend more time on social media. Social media companies use so-called "addictive design" mechanisms to keep users on their platforms longer. These design mechanisms include variable rewards, infinite scroll, and dark patterns.

By educating students about these mechanisms, they may become more aware of how social media companies keep users engaged and may reflect on their own social media use. Furthermore, teaching students about why companies are trying to hook them can also be helpful in reducing problematic social media use. By understanding that social media companies are driven by a profit motive and rely on user engagement to generate revenue through the attention economy, individuals may be more motivated to take control of their usage and minimize the impact of social media on their daily lives.

The accompanying research dossier gives detailed background information on the topic of social media addiction and addictive design mechanisms.

3. LESSON PLAN

3.1. LESSON OVERVIEW

	UNIT	TIME [MIN]	STEP	CONTENT	METHOD
<i>1. Introduction</i>		5	Introduction	Introduce the lesson topic and the concept of the iceberg (How, Why, What) Get opinions and answers from the Particify QR code	Frontal input & interactive survey e.g. through Particify
<i>2. Addictive Design Mechanisms</i>		10	Explanation of addictive design mechanisms, the first layer of the iceberg	Talk about mechanisms used by social media companies such as infinite scroll, intermittent variable rewards, etc.	Frontal input, aided by slides
<i>3. Think-Pair-Share</i>		15	Think-Pair-Share Activity	Students discuss which addictive design mechanisms they might have experienced and how it affected them.	Interactive partner activity. Task: Follow the instruction on the slide and think about/discuss the questions shown on the slide.
<i>4. Business Model of Social Media Companies</i>		10	Explanation of social media companies' incentives for addictive design, the second layer of the iceberg	Explanation of the business model and corresponding incentives for social media companies' use of addictive design, for example data mining, advertising, etc.	Frontal input, aided by slides
<i>5. Break</i>		5			
<i>6. Concerns</i>		15	Talk about (ethical) concerns of addictive design	Questions of slides are discussed: what are (ethical) problems with addictive design?	Group (3-4 students) discussion, followingly a 5 min collection of answers with the whole class.
<i>7. Interventions</i>		10	How to navigate concerns, third layer of the iceberg	Have the students come up with their own ideas of what to do and how to act concerning addictive design and decide on which ones are the most relevant.	Individual work: students write down ideas for interventions and vote for the most popular ones

		Opinion Poll: what to do about addictive design?	Discussion of the most ef- fective interventions	Each of the four most voted inter- ventions are as- signed to a corner. Students go to the corner of the inter- vention they find most relevant. They briefly discuss why they think so and then each cor- ner presents their view to the rest of the class.
8. Four Corners Activity	10			Frontal input.
9. Conclusion	10	Wrap-up of in- terventions and general lesson	Address structural aspect of addictive design mech- anisms.	

3.2. DIDACTIC METHODS

Combination of frontal input, group work and individual work, including:

- Group Discussion
- Four Corners Activity
- Think-Pair-Share Activity
- Individual work

3.3. DETAILED DESCRIPTION

3.3.1. INTRODUCTION (5 MIN)

- Introduce the presenters and lesson topic
- Provide framework for the lesson:
 - '... This is designed to be an interactive lesson, and we will be relying on you all for your engagement. We are very interested in hearing your thoughts and ideas on this topic. If anyone has questions at any time, please raise your hand so we can help clear it up. ...'
 - '... Our goal today is not to convince you to stop using social media. We ourselves use social media. Instead, we want to show you that there are some underlying mechanisms and structures to social media that allow and incentivize companies to make their platforms as time consuming and addictive as possible. Through our lesson, we want to give you all the tools to think more critically about social media and the greater societal impact of it...
- Introduce the iceberg (slide 2) and framework for the lesson – social media companies hook us to their platforms. 'We will discuss how and why social media companies do that'

- ...'To show that there is more complexity to social media usage than meets the eye, we are using an iceberg analogy. On the top is the visible, well-known behavior of many people using social media, perhaps using it for very long periods of time or having a problematic relationship with social media. We will reveal under the surface first how, and then why social media companies want to keep maintaining this behavior. Finally, we will discuss some potential interventions, or things we can all do, to address the problem of problematic social media use.'
- Slide 3: Either ask the student the question on the slide and collect their answers in class, or turn them into a survey (e.g. on Particify) and collect their answers through showing a QR code which enables students to answer their questions on their phones and to followingly show the results in class.
- Briefly discuss the answers with the students (3 min)
 - 'Most people, especially young people, use social media. Sometimes this social media usage can become problematic, such as when you spend too much time on social media or at times when you maybe shouldn't. We want to make it clear that this problematic social media use is not an accident, and it isn't any individual's fault. This doesn't happen because of any personal fault: there are larger forces at play here, mainly from large social media companies, who will do anything to keep you on their app longer.'

3.3.2. ADDICTIVE DESIGN MECHANISMS (10 MIN)

- Relate to the next segment of the iceberg (slide 4 of the presentation)
 - 'So now that we've had a little introduction to the common behavior of using social media, we will start to look deeper and address how social media companies hook users to their platforms. This is beneath the surface of the iceberg, because it can be done in subtle ways that isn't always obvious to users.'
- Activation question; slide 5 (2 min)
 - 'To begin, we'd like to hear your initial ideas on the topic. **How do you think social media keeps users on their platforms so well?** Please raise your hand if you have an idea. Think about specific designs you have come across before, or specific things platforms do that keep you hooked.'
 - If no initial response, prompt with: 'What makes you pick up your phone and start scrolling on social media? What are some things that are stopping you from deleting your social media?'
 - 'Thank you for your answers! Now we will expand upon those and show you some specific design mechanisms that social media platforms use to keep their users on for longer, and to keep them returning. These are just a few mechanisms that have been studied by researchers.'
- Present the mechanisms; slides 8-12 (5 min)
 - Infinite Scroll
 - 'One of the most obvious designs meant to keep users on platforms is infinite scroll. This can be found on almost all major social media platforms such as Tiktok, Instagram, and Twitter. Infinite scroll removes key stopping cues, such as reaching the bottom of a page and having to choose to continue onto the next. Because these decision points are never reached, infinite scroll causes

users to spend significantly more time scrolling, and often more time than they realize or had intended.'

- Intermittent Variable Rewards
 - 'Next are intermittent variable rewards, which are most common in the form of notifications. This mechanism is so influential because it appeals to the brain's dopamine; each reward produces dopamine in the brain which makes the user feel good. Because, in the case of notifications, they come at unexpected times and have an unexpected valence, the surprise makes them even more effective. These work to keep users checking their phones and coming back to the platforms, because they want that little hit of dopamine from the unexpected nice comment, like, or follow that a notification brings.'
- Social Reciprocity
 - 'Obviously the "social" aspect of social media is a key part. People come to social media to connect with others and maintain their social bonds. However, social media companies take advantage of this by implementing things like "Snapstreaks" on SnapChat (flames for the consecutive days on which two partners of a conversation exchanged at least one message each) or read receipts, which rely on social pressure to keep users engaged. By adding features that explicitly show a user's engagement or relies on constant engagement, platforms force leaving social media to mean losing social connection. Similarly, it has created a culture of "following back" that keeps users involved in the platform for longer, building their social networks.'
- Dark Patterns
 - 'Dark patterns, also known as deceptive designs, are not unique to social media. You might recognize these designs from other websites or especially on cookie banners. Dark patterns are a group of designs that try to trick the user into doing something they didn't mean to. In this example, the user wants to reject the cookies. However, the "accept all cookies" button (which is what the platform wants the user to select) is bold and brightly colored, while the "manage cookies" button is the same colour as the background and easily missable. By using color, font, and size, dark patterns rely on the quick and subconscious decisions that humans make to deceive them.'

3.3.3. THINK-PAIR-SHARE (15 MIN)

- find the detailed description on slide 11 (17 min 2 for Think, 5 for Pair and 10 for Share / Discussion)
 - 'So now that we have shown some specific design elements of how social media companies keep their users on their platforms, we are going to have an activity to reflect, called Think-Pair-Share. For this activity, first we ask you to think to yourself about the questions on this slide. Feel free to write down your ideas, as you will be discussing them. Next, you will turn to the person setting next to you to talk about your ideas and thoughts. Finally, each group will share their key ideas and takeaways with the class.'

3.3.4. BUSINESS MODEL OF SOCIAL MEDIA COMPANIES (10 MIN)

- Relate to the next segment of the iceberg (slide 12)
- Briefly ask about initial ideas (slide 13)
- Present the input slides (14-17)
 - Slide 14: Profits of social media companies from advertisements
 - Slide 15: User data is collected and sold to third parties for profit
 - Slide 16: The cycle of data collection is reinforced, as social media companies analyze user data to further make their platforms better at holding attention.

3.3.5. BREAK (5 MIN)

3.3.6. CONCERNS (15 MIN)

- Have an in-class discussion of the question posed on slide 17. Ask the students about the ethics of social media companies profiting from users' activity. If there is still enough time, ask them to split into groups and write down their ideas, in order to present them to the class.
- Iceberg Recap, slide 18
 - 'So now we have seen not only the top, visible layer of the iceberg, but all of the structural elements that lie underneath. While we can very easily see the behavior of social media, now we also know of the mechanisms that social media companies use to hook their users, and why and how these companies profit off of them.'

3.3.7. INTERVENTIONS (10 MIN)

- Ask for interventions from the entire class, write them down. Try to accumulate interventions on both the individual and structural scale. (slides 19-20) (5 min)
- Organize the voting, ask students to vote for their top four interventions

3.3.8. FOUR CORNERS ACTIVITY (10 MIN)

- Organize the Four Corners exercise with the previously collected top interventions – discuss why those interventions are relevant and how they could be implemented (5 min for discussion within groups, 5 min for full class discussion). Detailed description of the exercise on slide 21.

3.3.9. CONCLUSION (10 MIN)

- Wrap-Up of interventions
 - Some individual possibilities of action (which you may skip if they have already been named before by the students), slide 23
 - Discuss the importance of collective interventions, slide 24
- Ask and clarify whether there were any points that remained unclear to the students
- If you like, get some feedback on the lesson by your students (example questions on slide 25)

3.4. POSSIBLE OBJECTIONS

- **I don't use social media. Why should this lesson matter to me?**

Even if you don't personally use social media, this lesson still has some valuable takeaways. The mechanisms of design that social media companies use to hook their users into spending a lot of time on their platforms can also be found in other media or digital formats. For example, dark patterns are very commonly found in online-shops and have the same purpose of misleading or tricking you. Further, the structure elements that incentivize companies to hook their users are relevant for all people, whether they use social media or not.

- **Why does it matter if companies have all my data? I don't have anything to hide. / I think it is a good thing social media companies know everything about me. It makes the content perfectly tailored for my interests.**

While it can feel like allowing companies to collect all your personal data is an individual choice, there are some unseen consequences that are less well known. A practice called "predictive analytics" is when companies use existing user data of people who have consented to their data being collected to predict future behaviors or traits of people who have not consented to their data being collected. For example, if a company has all personal data about a small set of users (including their gender, age, purchasing habits, and political views), they can use this information to predict sensitive information about other users who did not consent to their data being used. Therefore, even though it might seem harmless or even beneficial for you to allow social media companies to collect your data, it can lead to unfair and dangerous outcomes for others in the future, as their sensitive data becomes predictable without consent.

- **The best way to enact change is through changing individuals' behaviors.**

While changing individually changing one's behavior is a way to respond to addictive design and can be effective for some people, this relies on lots of individual effort and is difficult to implement across society. A key point of our lesson is that social media is shaped the way it is because of companies' intentions. When people struggle with social media and engage in problematic social media usage, this is by design and not the fault of the individual. Therefore, solutions to the problem should similarly address the companies and collective level instead of putting all pressure and responsibility on individuals. Plus, as change on the collective level will benefit all individuals, it is a more efficient way of helping as many people as possible.

- **Collective or political action is impossible.**

Causing political change can seem difficult or even impossible, but there have been significant policy changes enacted before, for example the GDPR is a policy in the European Union that is very influential in data privacy and protection. Similar policies can be tailored to other issues of digital media and privacy. Further, even just creating awareness for the issue e.g. through this lesson is a valuable first step. Now that all of you are familiar with the issue, you can continue to spread awareness to others.

4. APPENDIX

- Presentation Slides
- Research Dossier