

Designing for The Next Generation — Building Responsible Social Media Platforms for Teenagers

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Abstract

This paper explores how social media platforms such as Instagram can be adapted to better support the needs of teenagers. The aim is to protect young users while helping them develop conscious, healthy habits online. Building on this goal, a set of features was designed to promote positive content, reduce harmful interaction patterns, and strengthen digital well-being. The work follows an iterative, user-centered design approach grounded in design thinking.

The theoretical foundation discusses adolescent brain development, the psychological impact of social media, and manipulative design mechanisms such as dark patterns. A qualitative study involving interviews and a feature-sorting workshop examined how teenagers use the platform and what challenges they experience. The data was analyzed with qualitative content analysis according to Mayring using MAXQDA.

These findings informed the development of an interactive prototype for an “Instagram Youth” version. The prototype included selected features derived from user stories and was evaluated through usability testing with eight teenagers and four parents, using Thinking Aloud sessions and Likert scale ratings to capture usability and relevance.

The paper concludes with a practical set of design recommendations for creating safer and more ethically aligned social media environments. These guidelines aim to support designers and developers in building digital platforms that prioritize user well-being and offer constructive, development-focused experiences.

Keywords

Youth-centered social media design, ethical digital design, conscious media use, Instagram, youth, adolescent media behavior

1. Introduction

Social media have become an integral part of many young people's everyday lives. According to the JIM Study 2024, 93% of young people in Germany have their own smartphone and 98% use it daily or at least several times a week [1]. Platforms such as Instagram and TikTok play a particularly important role for 14 to 17-year-olds. However, in addition to the many opportunities, such as creative self-expression and social networking, these platforms also involve high risks in terms of data protection, mental health, manipulative design patterns (dark patterns), unconscious scrolling behavior and much more. Two thirds of young people themselves state that they regularly spend more time on their cell phones than they had planned [1].

International studies confirm this problem: for example, the WHO HBSC survey in over 50 countries shows that 11% of young people are classified as problematic social media users and 32% as heavy users [2]. Social media can support social interaction and engagement, but problematic use is increasingly associated with addiction-like behaviors that interfere with school performance, physical activity and offline relationships [2]. Studies suggest that certain forms of social media use are associated with depressive symptoms, anxiety, and psychological distress among adolescents or might also lead to sleep disorders and internalizing symptoms [3].

Some countries, such as Australia recently, are trying to counteract these problems with general bans on social media for children and adolescents under 16. However, critics argue that such blanket restrictions are not a suitable solution, and a public health approach is recommended instead that reduces risks while promoting the positive potential of digital media, for example through media education, parental guidance and risk-reduction strategies [4].

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Against this background, the present work examines how social media, using Instagram as an example, can be designed to better meet the needs of young people. Instagram was chosen because it integrates a range of features that are also central to platforms such as TikTok and Snapchat, including algorithmically curated feeds, short-form visual content, stories, direct messaging, and engagement-based feedback mechanisms. This makes Instagram a particularly suitable example for investigating how youth-oriented design interventions can address multiple platform dynamics within one setting, while keeping the findings transferable to other social media platforms. The focus is on functions that protect young users, strengthen their self-regulation and promote conscious, healthy use instead of maximizing screen time. The central research question is:

How can social media platforms be designed to specifically promote privacy, psychological well-being and positive interactions for young people?

This study follows an iterative, user-centered design process. First, theoretical foundations on adolescent brain development, the psychological impact of social media and the mechanisms of dark patterns were examined. In a qualitative study, teenagers were interviewed about their social media use and took part in an interactive workshop in which they prioritized features for a youth-friendly version of Instagram. The collected material was analyzed using qualitative content analysis according to Mayring, supported by MAXQDA. On this basis, an interactive prototype of an “Instagram Youth” version was developed in Figma and evaluated in a usability test with teenagers and parents using Thinking Aloud and Likert-scale questions. The insights from these steps were finally translated into a toolkit with concrete recommendations for youth-friendly social media design.

The aim is to develop concrete recommendations and a youth-friendly prototype concept that provides guidance for the design of safe and meaningful digital spaces.

The aim of this paper is to summarize these findings and present design principles and prototype-based examples that show how platforms like Instagram can be redesigned to support mental well-being and foster positive, age-appropriate interactions. Rather than arguing for less social media, the work focuses on how social media can be made better and safer and how young people can be supported in looking after themselves online.

2. Theoretical Background

The theoretical foundation of this work is built on four core pillars: the influence of social media on adolescents’ psychological well-being, the neurological and developmental characteristics of the teenage brain, the mechanisms and risks embedded in platform design, particularly dark patterns and algorithmic control and a reflection on critical media literacy and user autonomy. Social media plays a central role in today’s communication culture and influences both social interactions and people’s well-being. The direct link with mental health is an important factor, which is why many studies have already been carried out in this area. Mental health is defined as a state of well-being in which individuals can fulfill their own potential, successfully cope with everyday challenges, work effectively, and make a positive contribution to society [5]. Understanding these dynamics is essential for designing such platforms in a way that protects young users and supports healthy behaviors.

Research shows that adolescents’ online behavior is shaped by psychological and situational factors. According to displaced behavior theory, individuals experiencing stress or reduced self-regulatory capacity tend to adopt behaviors that provide short-term emotional relief but may negatively affect well-being in the long term [6]. This dynamic is particularly relevant in digital environments, where platforms offer opportunities for connection and self-expression but may simultaneously foster isolation or maladaptive behaviors [7]. The balance between the benefits and potential risks of social networks therefore requires conscious management and targeted preventive measures to protect mental health in the long term [8].

2.1. Social Media Influences on Teenagers

Social media is a field of tension between positive and negative influences. On the one hand, social networks offer opportunities for exchange, support, and belonging, which can reduce feelings of isolation. On the other hand, research suggests that social media may also contribute to stress, exhaustion, and negative mental health outcomes, particularly when use becomes excessive or comparison-driven. Keles, McCrae, and Grealish show in their systematic review that social comparison processes on social media, especially passive consumption and exposure to idealized content, are associated with depressive symptoms and lower self-esteem [3]. Similarly, Vogel et al. found that frequent Facebook use was linked to lower self-esteem, largely because it increased exposure to upward social comparison, while temporary exposure to upward comparison profiles also reduced state self-esteem and relative self-evaluations [9]. Extending this evidence, Midgley et al. demonstrated that upward comparisons on social media occur frequently and are often more extreme than downward comparisons, and that they are associated with lower self-evaluations, poorer mood, and reduced life satisfaction, with individuals low in self-esteem being particularly vulnerable [10]. The Child Mind Institute likewise notes that platforms such as Instagram, Snapchat, and Facebook can intensify anxiety, depression, loneliness, and negative body image in adolescents. In addition, likes and comments can reinforce pressure to present an idealized online self, which may increase the discrepancy between the self portrayed online and the actual self. Constant accessibility through smartphones further contributes to hyperconnectivity, leaving young people with less space for genuine rest, while permanent communication and the feeling of being ignored can heighten anxiety and further undermine self-esteem. As preventive measures, technology-free times and spaces are recommended to encourage real conversations and screen-free activities; adolescents are also encouraged to delay early engagement with social media where possible and to participate in activities that strengthen self-efficacy and self-confidence, such as sports, music, or volunteering [11].

2.2. Teenage Brain Development

Puberty is an intensive developmental phase for the brain. Frequently used neural connections are strengthened while others are pruned. Petanjek et al. show that dendritic spine density is much higher in childhood and declines during puberty, and Juraska and Willing similarly describe a loss of neurons, dendrites, and synapses in the prefrontal cortex during adolescence [12] [13]. Together, these findings support the view that adolescence is marked by substantial structural brain remodeling. During this period, adolescents experience identity insecurity before forming a stable sense of self. A coherent identity is linked to better psychosocial adjustment, higher self-esteem, and fewer internalizing problems, while insecurity can intensify depressive symptoms. Supportive relationships with parents and peers play a central role in this process, as a lack of support can hinder healthy identity development [14].

These developmental processes help explain why social media can influence young people so strongly. Online interactions can reduce loneliness, build social bonds, and support identity exploration. At the same time, comparison pressure, performance expectations, and harmful content can disrupt the formation of a stable identity.

Teenagers are additionally influenced by neurobiological reward mechanisms. Self-disclosure on social media can be intrinsically rewarding, and sharing personal information is associated with psychological gratification and continued engagement [15]. Luo and Hancock likewise show that self-disclosure on social media is shaped by motivations and mechanisms that are closely linked to psychological well-being and platform use, suggesting that positive feedback and online expression can reinforce repeated engagement [16]. If the brain's reward system is under heavy strain for a long time, it may become less responsive. This is associated with feelings of depression and a lack of motivation. To restore balance, the brain seeks additional stimulation, further strengthening habitual use patterns [14].

These mechanisms make teenagers particularly vulnerable, as they spend significant time online while still lacking fully developed self-regulation abilities. It is therefore the responsibility of platforms to account for these vulnerabilities and protect young users during this sensitive developmental phase.

2.3. Teenage Brain Development

Social media platforms such as Instagram, TikTok, and Snapchat rely on design mechanisms intended to maximize engagement, many of which fall under the category of dark patterns. In Human Computer Interaction (HCI) research, dark patterns are described as interface strategies that steer users toward choices that primarily benefit the platform rather than the user, often by exploiting cognitive biases, habitual behavior, or attention loops [17] [18]. These design strategies are not limited to shopping websites; recent work in academic HCI shows that social networking services also use both engaging and governing patterns to prolong use, shape user behavior, and make disengagement more difficult [17].

Recent research shows that Instagram employs dark patterns that fall within both “engaging” and “regulating” strategies, making it harder for users, especially adolescents, to disengage [17]. Examples include infinite scroll, autoplay, and maze-like navigation, which are designed to prolong use and reduce natural stopping points. Research on infinite-scroll interfaces shows that endless feeds can encourage continued consumption by removing clear breaks in the browsing experience and by making disengagement less intuitive [19]. Similar mechanisms underpin reward-based interactions such as likes, comments, and follower counts, which activate key neural reward circuits associated with social reinforcement [15] [20]. Adolescents, due to their heightened sensitivity to social reward, are especially susceptible to these mechanisms.

Additional dark patterns play on intermittent reinforcement and fear of missing out (FOMO). For example, pull-to-refresh and similar refresh mechanisms create unpredictable reward intervals and encourage users to repeatedly check for new content, a design logic that has been linked to variable-reward and habit-forming patterns in social media use [19]. Features such as disappearing stories, push notifications, and real-time social metrics amplify FOMO, activating emotional and reward-related brain regions such as the ACC, insula, and mesolimbic system [21] [9]. These patterns can heighten anxiety, intensify social comparison, and impair self-esteem and cognitive processing, risks that disproportionately affect adolescents [22].

Algorithms reinforce these effects by curating content to maximize engagement rather than well-being. Emotionally charged, highly personalized, or socially rewarding posts are prioritized, while less stimulating but potentially beneficial content is suppressed [10]. Because teenagers often lack insight into why content appears in their feeds, algorithmic curation reduces their sense of control and can deepen negative feedback loops.

Taken together, dark patterns and nontransparent algorithmic mechanisms create an environment in which adolescents' psychological vulnerabilities, reward sensitivity, developing self-regulation, and heightened social comparison, are easily exploited. This theoretical perspective also highlights the gap that this work addresses: by intentionally reversing such mechanisms through supportive exit points, reflective prompts, and conscious-use tools, this research explores how elements traditionally designed for engagement maximization can be reconfigured to foster healthier and more autonomous social media behaviors.

2.4. Critical Media Literacy and User Autonomy

Media literacy is an important complement to discussions about the risks of social media. Young people are not merely passive recipients of the influence of these platforms, but also active users who can reflect on, question, and help shape their media environment. In this context, critical media literacy goes beyond the ability to access or understand media content. Kellner and Share describe it as a framework that enables individuals to critically examine media representations, stereotypes, ideologies, and power structures, while simultaneously fostering the ability to deconstruct and

reconstruct media texts and to participate more consciously in social life [23]. This perspective is particularly relevant for adolescents, as their use of social media is shaped not only by the design of the platforms and their developmental vulnerability but also by their own capacity for reflection, judgment, and self-regulation.

From this perspective, the focus shifts to the individual's role in taking personal responsibility. Rather than relying solely on external restrictions or protective design measures, critical media literacy emphasizes self-determination, informed decision-making, and the development of reflective habits in engaging with digital media [23]. For young people, this means being able to recognize persuasive design, question idealized representations, critically evaluate information, and make more conscious decisions about their own media use. In the context of this work, this concept is relevant because it supports the idea that youth-oriented social media design should not only mitigate risks but also strengthen users' ability to understand and manage their own behavior.

3. Methods

The methods used in this work combine qualitative data collection, user-centered analysis, and iterative prototype development to investigate how social media can be redesigned for teenagers. This chapter outlines the overall research design, followed by the specific procedures applied in each phase of the project. First, interviews and a feature-sorting workshop were conducted to identify adolescents' needs and priorities. Based on these findings, a prototype was created and subsequently evaluated through a usability test with teenagers and parents. Each methodological step contributes to understanding how platform features can support conscious, safe, and youth-appropriate social media use.

3.1. Research Design

The research design of this work is based on the Design Thinking process, an innovative, user-oriented approach to problem-solving that is divided into five phases: Empathize, Define, Ideate, Prototype, and Test. It focuses on the needs and experiences of the end user. The iterative nature of the process allows ideas to be quickly developed, tested, and refined, resulting in more effective and user-centered solutions. The strength of design thinking lies in its ability to combine creative thinking with analytical methods while always putting people at the center of the process [24].

In the Empathize phase, the goal was to develop a deep understanding of teenagers' needs, experiences, and challenges regarding social media use. This included literature research, qualitative interviews with adolescents, and an interactive feature-sorting workshop. The Define phase involved synthesizing these findings and identifying key insights and user needs through qualitative content analysis according to Mayring. During the Ideate phase, potential feature ideas were developed using brainstorming and low-fidelity prototyping. These ideas were translated into concrete concepts that addressed the challenges identified in the earlier phases. In the Prototype phase, these concepts were transformed into a mid-fidelity interactive prototype in Figma, illustrating the proposed features for an "Instagram Youth" version. The final Test phase consisted of a usability evaluation in which teenagers and parents interacted with the prototype using predefined user stories. Thinking Aloud and Likert-scale questions were applied to gather feedback on usability, clarity, and perceived usefulness. This iterative approach ensured that user perspectives informed each development step and that the resulting design recommendations were grounded in real needs and experiences.

3.2. Interviews and Feature-Sorting Workshop

To gain an in-depth understanding of teenagers' usage patterns, needs, and concerns regarding social media, a qualitative study was conducted consisting of two parts: semi-structured interviews and an interactive feature-sorting workshop. Both parts took place in person and focused on adolescents between 12 and 17 years old. The study design enabled a detailed exploration of individual experiences while also generating concrete input for the later development of platform features.

Participants

A total of seven teenagers took part in the study, all of whom were German and attended a Gymnasium (academic high school). Participants were recruited through purposive sampling in order to obtain adolescents who were active social media users and could reliably reflect on their digital habits and preferences. The focus on students attending a Gymnasium was primarily a practical and contextual decision, as this group was readily accessible and represented the age range of interest. Demographic information such as age, gender, and social media usage behavior was collected at the beginning of the session. This data is summarized in Table 1.

Participant	Gender	Age	Social Media Platforms	Daily Time on Social Media	Own Postings
S1507	female	17	Instagram 2022, Snapchat 2020, YouTube 2021, Pinterest 2021	30 min to 1 h	-
K2908	female	16	Instagram 2024, YouTube 2016, Pinterest 2018	2-3 h	Instagram
P1710	female	13	YouTube 2015, WhatsApp 2021	30 min to 1 h	WhatsApp Status
G1409	female	14	Instagram 2021, Snapchat 2023, YouTube 2015, Pinterest 2014	More than 3 h	WhatsApp Status
C0106	female	17	Instagram 2020, WhatsApp 2020, Snapchat 2020	1-2 h	-
J0707	male	17	Instagram 2020, TikTok 2022, Snapchat 2020, BeReal 2023, YouTube 2023	30 min to 1 h	BeReal, Instagram, Snapchat, YouTube
V2511	male	13	TikTok 2023, YouTube 2017, Twitch 2023	1-2 h	TikTok

Table 1. Demographic Data of Study Participants [Own table]

Interview Procedure

The interviews followed a semi-structured format to allow teenagers to freely describe their perspectives while ensuring consistency across participants. Guiding questions focused on daily social media habits, positive and negative experiences, perception of risks such as comparison pressure, harmful content, or overuse, and desired changes or improvements to platforms such as Instagram. All interviews were recorded and later transcribed for analysis.

Before the interviews, participants were informed about the general aim of the study and encouraged to speak openly about their experiences. They were told that there were no right or wrong answers and that their responses would be treated confidentially.

Feature-Sorting Workshop

The second part of the session consisted of an interactive workshop in which participants evaluated platform features. Teenagers were asked to assign pre-made feature cards according to the MoSCoW categories. The MoSCoW method is a prioritization approach used in agile requirements engineering to classify features by importance and value, typically into Must have, Should have, Could have, and Won't have categories, in order to support structured prioritization under limited resources [25].

Involving teenagers in this prioritization process helped identify which features they considered most relevant and which functions were less essential from their perspective [25]. This exercise also involved explaining their sorting and adding their own ideas. The last feature cards contained questions about new solutions (feature ideas) that could then also be sorted.

In a final activity, teenagers created their own version of an “ideal Instagram” by arranging features and interface elements on a poster. This allowed to see again what stuck with them or what was particularly important for them to have in the app.

Data Collection and Analysis

All interviews were transcribed, cleaned, and analyzed using Mayring’s qualitative content analysis, supported by the software MAXQDA. This method was chosen because it allows a systematic and theory-guided evaluation of subjective statements and combines deductive categories from the interview guide with inductive categories emerging from the material. Following Mayring’s summarizing content analysis, the data were reduced step by step: irrelevant parts were removed (Z1), statements were paraphrased and generalized (Z2), and similar paraphrases were condensed through two reduction stages (Z3 and Z4). Coding units ranged from single words to whole sentences, depending on meaning and context [26].

The resulting category system provided a structured overview of the essential points from both the interview and workshop parts and formed the basis for deriving the features and design decisions for the prototype.

3.3. Prototype Development

The prototype was developed iteratively based on the requirements derived from the interviews and workshop. To translate the identified needs into concrete design solutions, initial low-fidelity sketches were created to explore different layout and interaction ideas. These sketches served as the foundation for a mid-fidelity interactive prototype built in Figma, which allowed for a clearer representation of user flows and feature logic. The prototype focused on implementing the core feature blocks identified in the research process: time-management functions, digital detox elements, mental-health support, a favorites selection and an educational toolkit for political and social awareness. Throughout development, attention was given to creating a youth-appropriate design that minimized dark patterns and encouraged conscious use. The mid-fidelity version was chosen to enable efficient testing of usability, structure, and comprehension without emphasizing final visual design. This prototype then formed the basis for the usability test conducted with teenagers and parents.

3.4. Usability Testing

The usability test was conducted to evaluate the comprehensibility, usability, and overall suitability of the mid-fidelity prototype for teenagers. Building on the insights from the first study and the resulting design requirements, this test served as the final methodological step to assess how well the proposed features supported conscious, safe, and age-appropriate social media use. The evaluation focused on whether the functions were understandable without further explanation, whether navigation felt intuitive, and how both teenagers and parents perceived the relevance of the proposed solutions. The test also provided an opportunity to identify potential areas of confusion or improvement before deriving the final design recommendations.

Participants

A total of twelve people took part in the usability test: teenagers aged 12 to 17 and parents of teenagers. None of the adolescents who had participated in the earlier interview and workshop study were recruited again. Participants were selected purposively to ensure familiarity with social media use and to include both adolescent and parental perspectives on safety, usability, and age-appropriate design. Among the teenagers, most attended a grammar school, one attended a secondary school,

and one worked as a childcare worker. Compared with the earlier interview study, the usability test included a somewhat more diverse participant group in terms of educational background in order to examine whether the prototype remained understandable and relevant beyond a single school context. All participants lived in Germany.

Procedure

The usability tests were conducted remotely using Microsoft Teams or Zoom with each participant joining an individual session at a prearranged time slot. Teenagers and parents participated separately so that each person could evaluate the prototype independently and without influence from others. Participants interacted with a clickable mid-fidelity Figma prototype that was either shared by the researcher or accessed through a direct link. Each session followed a structured sequence consisting of an introduction, guided task scenarios based on predefined user stories, and short follow-up questions. Participants were asked to work through predefined user stories (Figure 1) that reflected realistic use situations and covered all main feature areas of the prototype. The Thinking Aloud method was applied throughout, with participants verbalizing their expectations, thoughts, and uncertainties while navigating the prototype. After each task scenario, participants rated the clarity and usefulness of the respective feature on a five-point Likert scale with emoji-based response options.

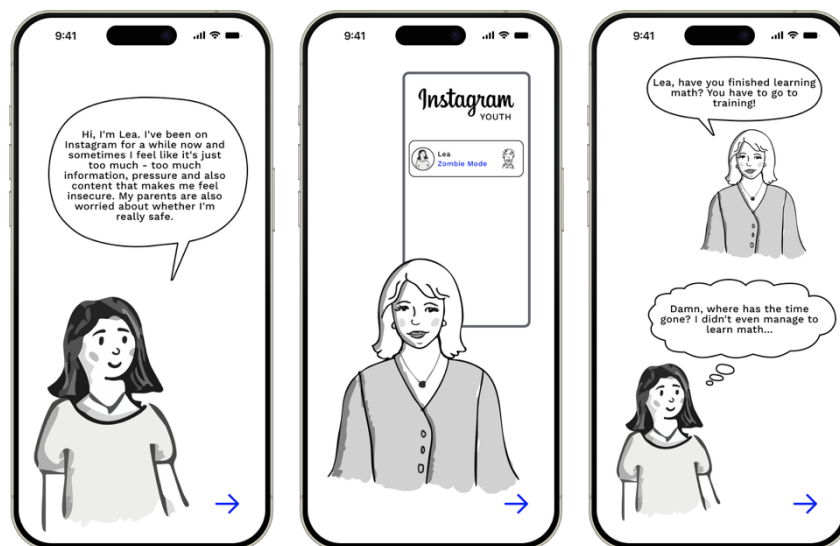


Figure 1: User Story Examples – Usability Test [Own illustration]

Data Collection and Analysis

All sessions were screen recorded, capturing participants' navigation behavior, verbal comments, and responses to the Likert-scale questions. The emoji ratings were converted into numerical values (1–5) and transferred into an Excel sheet to allow descriptive comparison across features and participant groups. The insights from the thinking aloud exercise served to explain the Likert scale responses and directly indicated the specific areas where there were problems or where functions were perceived as particularly good. Together, the quantitative ratings and qualitative insights formed the basis for the prototype evaluation presented in the Results chapter.

4. Results

The results presented in this chapter summarize the central findings of the qualitative interviews and the feature-sorting workshop, followed by insights from the prototype development and subsequent usability test. The findings reflect how teenagers perceive social media in their daily

lives, which challenges they encounter, and which features they consider important for a safer and more conscious user experience. The outcomes of the first study served as the foundation for defining the core requirements for a youth-oriented version of Instagram, while the usability test provided feedback on the conceptual implementation of these requirements. Together, these results form the basis for deriving the design recommendations presented in Chapter 5.

4.1. Findings from Interviews and Workshop

Through summarizing content analysis according to Mayring, several key categories emerged that describe how teenagers experience social media and which functions they consider essential for a safer and more conscious user experience. These categories combine insights from the interview transcripts with the feature priorities expressed through the MoSCoW sorting activity. The categories presented below reflect the areas that most strongly influenced the development of the prototype.

Difficulties With Self-Regulation and Unconscious Scrolling

Many teenagers reported that they struggle to control the amount of time they spend on social media and that usage often becomes automatic. Participants described continuing to scroll even when they intended to stop, frequently losing track of time or switching apps without awareness. This difficulty was reinforced by platform mechanisms such as endless feeds and algorithmic recommendations.

In the MoSCoW workshop, features designed to support time management — such as time limits, break reminders, and activity overviews — were consistently placed in the “Must have” category. Teenagers expressed that such functions could help them regulate their behavior more effectively and prevent unintentional overuse.

Emotional Burden, Comparison Pressure, and Mental Well-Being

Concerns related to mental health were expressed throughout the interviews. Teenagers noted that social comparison is a central and often harmful aspect of their social media experience. One participant emphasized that it is “easy to compare yourself with the lives, bodies, etc. of others, which can be immensely damaging to your mental health.” This aligns with recurring descriptions of feeling overwhelmed, stressed, or discouraged after consuming certain types of content.

Workshop results supported this pattern: features related to emotional well-being — such as reflection prompts, tips for mental health, or access to supportive resources — were ranked as highly relevant and meaningful. Participants expressed a desire for platforms to acknowledge and mitigate the emotional impact of content consumption.

Lack of Transparency and Algorithmic Overload

Participants frequently reported confusion about why certain content appears in their feed. Many expressed a sense of losing control over what they see, describing that they are exposed to “so much stuff I didn’t even ask for.” Algorithmic recommendations, especially around current events or emotionally charged topics, were perceived as overwhelming and sometimes distressing.

One teenager pointed out the broader societal effects of this dynamic: “Unfortunately, I think most people form their opinions on sometimes extremely important topics exclusively via social media. Especially teenagers, I see this a lot in my class.” This demonstrates awareness of misinformation, polarization potential, and the emotional strain caused by highly curated feeds.

During the MoSCoW activity, features aimed at increasing transparency — such as explanations for why content is shown or options to adjust algorithmic inputs — were ranked as “Should have” or “Must have”, indicating a strong desire for more control over their content environment.

Safety, Privacy, and the Need for Autonomy

Privacy concerns were frequently mentioned, especially regarding unwanted contact and uncertainty about how personal data is used. At the same time, teenagers emphasized that

maintaining a sense of autonomy is essential. But regarding this, adolescents also prefer a balance: they find it acceptable when there are agreed usage rules or some parental involvement, but they would rather have support in developing their own awareness than overly rigid and strict controls. Several participants also highlighted that this acceptance is age-dependent, noting that younger users may require more guidance. Some adolescents indicated that younger teenagers, particularly around the ages of 13 or 14, often cannot reliably judge how much social media use is appropriate and therefore require more guidance at that stage.

This need for balance was reflected in the MoSCoW sorting. Supportive safety functions that strengthened teenagers' own ability to manage privacy or interactions were placed in higher priority categories, while features implying strong parental control or strict monitoring were evaluated more critically and often ranked lower. Overall, teenagers preferred solutions that allow them to feel safe and supported without undermining their independence or sense of responsibility.

Desire for Meaningful and Supportive Platform Functions

Beyond safety and mental health, teenagers expressed interest in features that offer value beyond entertainment. This included educational or informative content, especially when presented in an accessible and non-intrusive way. In the workshop, several participants suggested tools that help understand political or social issues, methods to verify information, or ways to access trustworthy sources.

These ideas were further reinforced by the MoSCoW categorization, where functions related to learning, reflection, or gaining new knowledge were often placed in the "Should have" category. Although not all participants considered them essential, many found them helpful and wished platforms did more to support informed engagement.

Summary

Overall, the findings show that teenagers desire more control over their social media use, clearer structures that help them regulate time and emotional exposure, stronger mental-health support, and increased transparency around algorithmic recommendations. At the same time, they value autonomy and reject surveillance-oriented approaches. These insights directly informed the design requirements for the prototype, which focused on conscious use, emotional well-being, safety, and meaningful content.

4.2. Prototype Design Implications

The prototype consolidates the most relevant needs identified in the qualitative study and translates them into concrete functional areas. The goal was not to redesign the platform visually but to integrate features that support conscious, safe, and developmentally appropriate social media use for teenagers. The functions were derived directly from the categories in the qualitative content analysis and reflect the priorities expressed in the MoSCoW sorting workshop. The following feature blocks summarize how these needs were implemented in the mid-fidelity prototype.

Time Management and Conscious Use

This feature block addresses teenagers' difficulties with self-regulation and their desire for greater awareness of usage patterns. As shown in Figure 2, the prototype includes an activity overview that visualizes daily and weekly time spent on the platform. A customizable time limit function enables users to set personal boundaries, and a break reminder offers gentle prompts when scrolling has continued for an extended period.

The weekly limit is intentionally flexible: teenagers receive a total weekly quota and can decide how to distribute it across the week. If the daily limit is reached, they can steal time from upcoming days, allowing for more usage on days with additional free time while still remaining within their overall weekly boundary. Figure 3 also illustrates various notifications that appear when limits are reached or breaks are due. These include reminders to pause, warnings when usage has exceeded

personal goals, and suggestions to reflect on one’s behavior. In line with the design rationale in this work, the healthier option is always presented as the primary call-to-action, subtly nudging users toward more conscious choices without applying restrictive pressure. In this way, the feature also supports critical media literacy by making usage patterns visible and encouraging reflection and self-regulation [23]. This approach supports self-regulation while preserving autonomy.

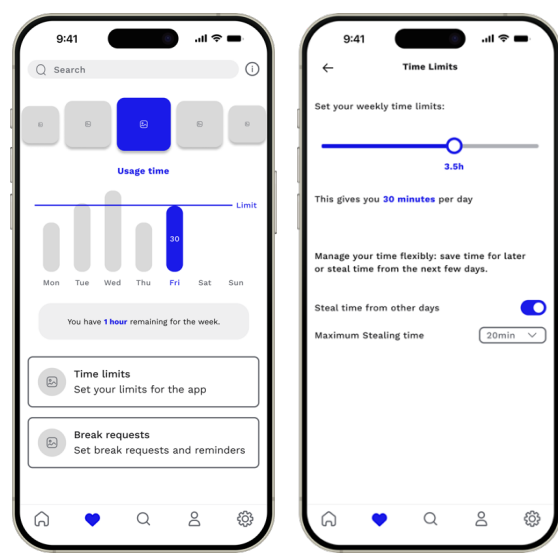


Figure 2: Usage Time and Time Limits – Mid Fidelity Prototype [Own illustration]

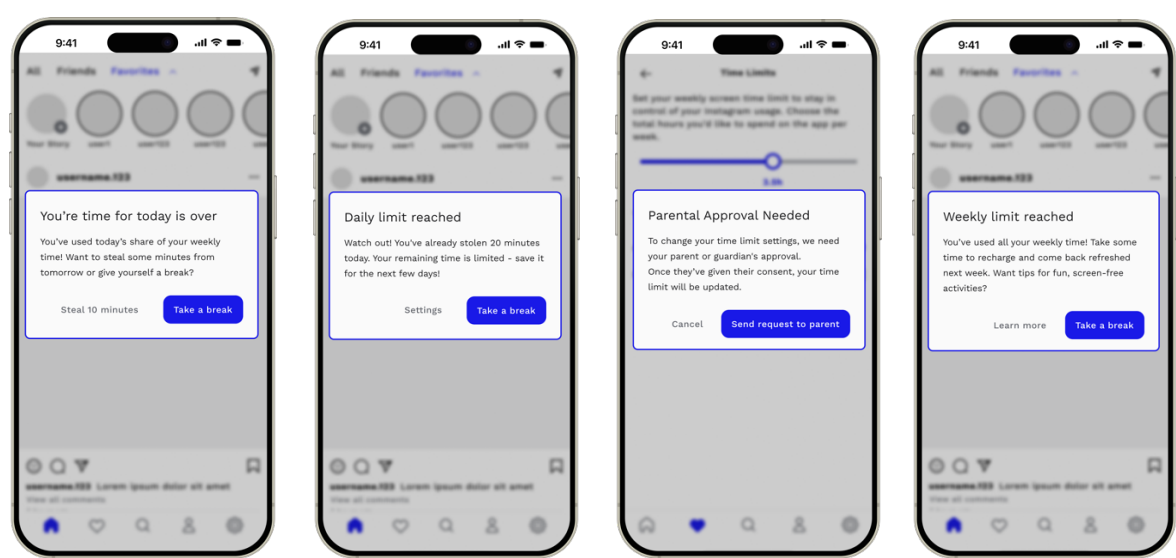


Figure 3: Time Limit Notifications – Mid Fidelity Prototype [Own illustration]

Digital Detox Challenges

Figure 4 illustrates the feature of digital detox challenges designed to help teenagers interrupt unconscious scrolling and take intentional breaks from the app. The challenges prompt users to complete small offline task, such as going outside for a walk, and upload a photo as proof. During the defined challenge period, the app is temporarily locked and inaccessible, reducing temptation and supporting a full break. Teenagers can only view the photos of their friends after they have completed the challenge themselves, creating a light, social reward system. Beyond these short-term

incentives, the prototype also includes streaks that reward longer periods of not using the app at all. These streaks can be exchanged for extra minutes on other days, giving teenagers more flexibility within their weekly limit. This combination of positive reinforcement and autonomy-focused nudging reflects teenagers' preference for motivating, non-restrictive support in regulating their screen time.



Figure 4: Digital Detox Challenges – Mid Fidelity Prototype [Own illustration]

Social and Political Toolkit

Figure 5 introduces the Social and Political Toolkit, which provides teenagers with accessible, trustworthy information on social and political topics. The landing page displays daily facts in the form of short video reels. The “Fact or Fake” function offers an AI-based tool for verifying content: users can submit text claims, photos, or posts they have seen, and the system responds with “TRUE” or “FALSE,” an explanation, and a link to further information. The “Local Engagement” feature displays opportunities for social or political involvement on a map, allowing teenagers to discover nearby events, initiatives, or organizations, view details, and contact or register directly. Finally, the “Civic Education Tool” provides easy-to-understand information, interactive learning modules, and quiz formats that convey foundational political and social knowledge in an engaging way. Since many teenagers use social media as their primary source for political information, this feature aims to reduce overwhelm, strengthen media literacy, and give users a structured way to verify facts and better contextualize what they encounter online.

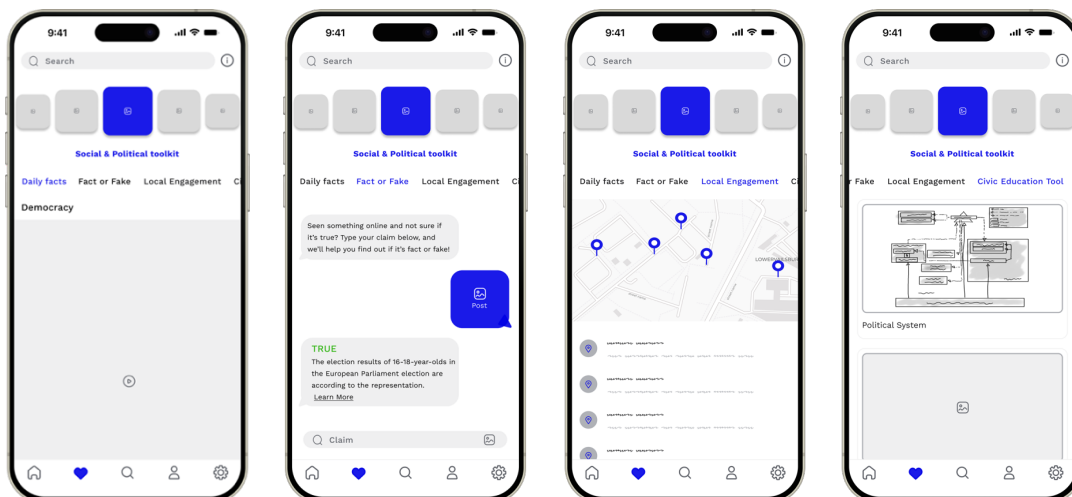


Figure 5: Social and Political Toolkit – Mid Fidelity Prototype [Own illustration]

Mental Health Support

Figure 6 shows the landing page for the Mental Health function, which includes a mood checker that allows users to indicate their current emotional state through emojis. If no mood is entered, teenagers receive mental-health recommendations based on their recent interactions on the platform. This is intended to counteract algorithm loops by providing balanced and supportive content when users have consumed a large amount of distressing or one-sided material. After a mood is selected, the content adapts and provides mental-health-promoting posts, positive affirmations, and simple exercises. The Crisis Support feature offers immediate help in urgent situations through a prominent call-to-action button linking directly to emergency numbers and relevant services. For non-emergency concerns, an AI-based communication tool acts as a low-threshold, anonymous first point of contact that helps users sort their emotions, explore possible solutions, or get referred to additional support. The Resource Library provides structured information on mental-health topics, including step-by-step guides, definitions, coping strategies, and references to further support services, functioning as a central access point for reliable help. Finally, the Local Help feature displays nearby mental-health services on a map, enabling teenagers to easily find professional assistance in their area when needed.

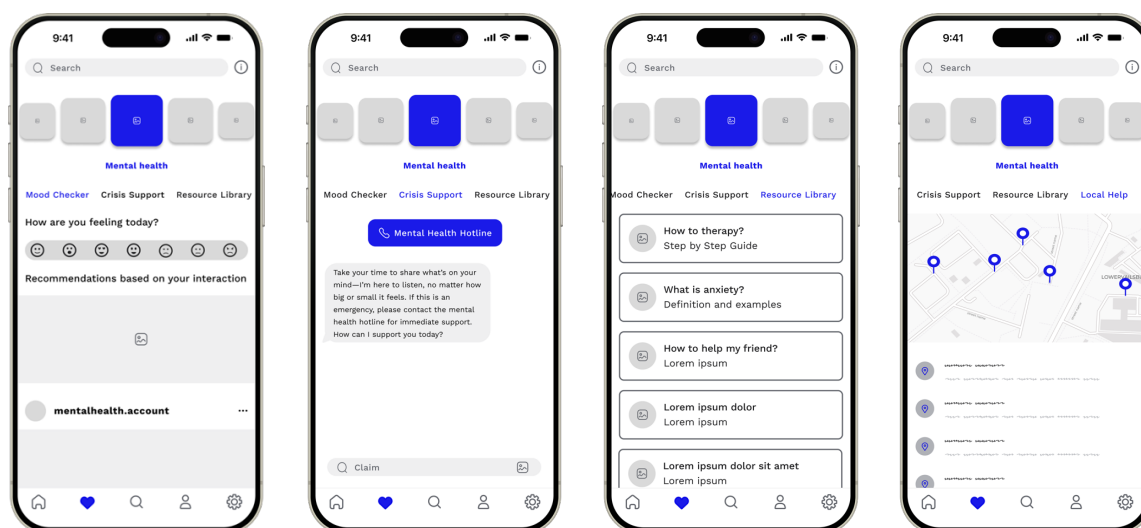


Figure 6: Mental Health – Mid Fidelity Prototype [Own illustration]

4.3. Usability Test Results

The usability test provided a combined set of qualitative and quantitative insights into how teenagers and parents perceived the clarity, usefulness, and relevance of the prototype functions. Overall, participants rated the features positively, with most mean values falling clearly above 4.0 on the five-point Likert scale. Figure 7 illustrates the mean ratings of teenagers, while Figure 8 shows the results from the parents' perspective. The according questions can be found in Appendix A. The questions for the parents are the same except for the change in perspective that they should give assessments of their teenagers.

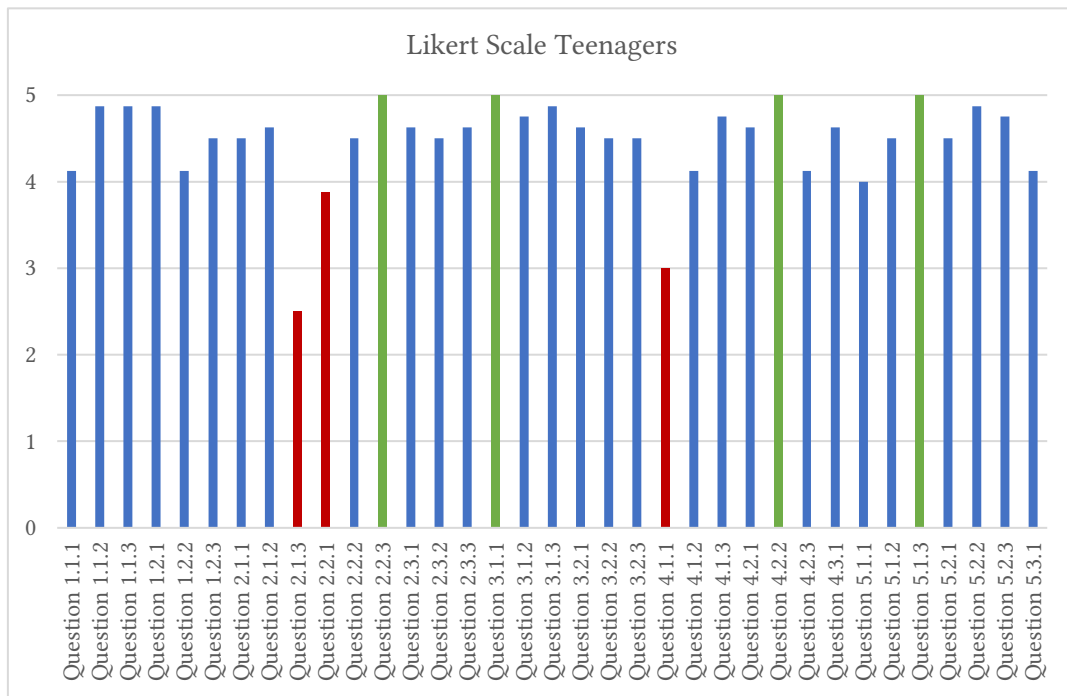


Figure 7: Likert Scale Answers Teenagers [Own illustration]

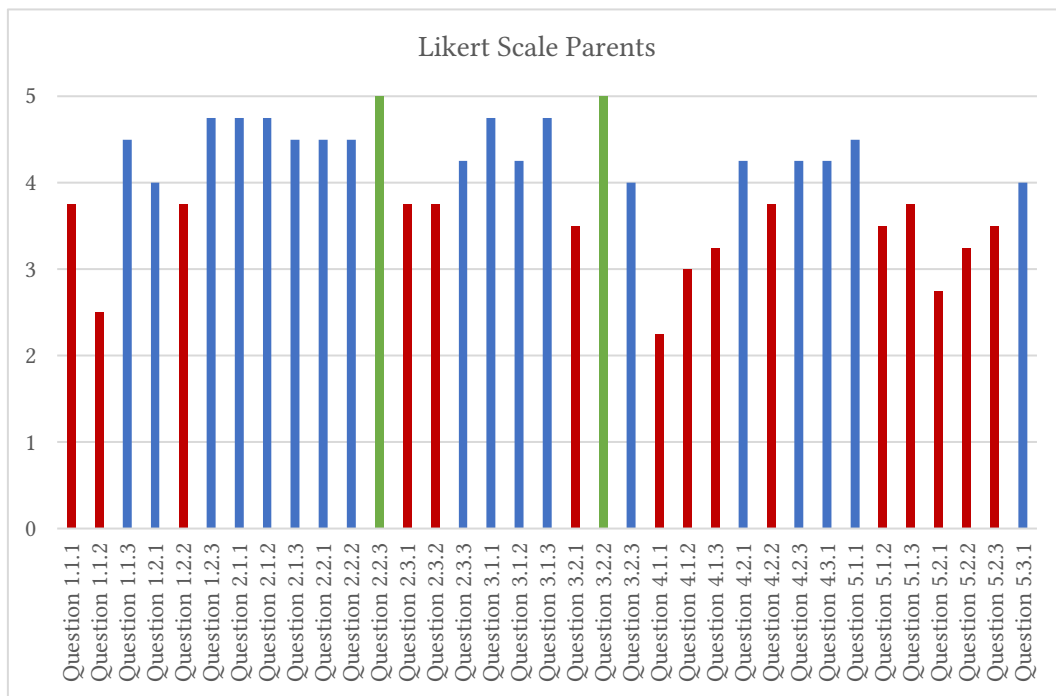


Figure 8: Likert Scale Answers Parents [Own illustration]

Positive Evaluations

The quantitative results show that teenagers rated several functions particularly positively. The time limit function, digital detox challenges, fact checker, and crisis support received the highest approval. Teenagers considered the time limit settings clear and helpful for gaining more control over their screen time, and they found the digital detox challenges motivating and easy to integrate into everyday use. The fact checker was perceived as especially valuable, since many teenagers reported forming political opinions via social media and appreciated having a way to verify

information. Crisis Support was described as an important safety feature, offering quick access to help in stressful or emotionally difficult moments.

Parents also rated the time limit function and digital detox challenges as the most meaningful features. In particular, parents liked the possibility of sending detox challenges to their teenagers, which they viewed as a playful and low-pressure way to support healthier usage without resorting to strict controls. These high-scoring items indicate that both groups found the features relevant, easy to understand, and aligned with real needs identified in the interviews.

Qualitative findings from the Thinking Aloud protocol highlighted that most interaction flows were intuitive and required little explanation. Participants navigated through the prototype without major difficulties and confirmed that the integration of the new features into the existing Instagram structure felt natural.

Critical Feedback

The parent diagram shows several values below 4.0. These lower ratings primarily regarded concerns about whether teenagers would consistently use reflection-based or educational features, whether some functions might be ignored over time, and whether certain tools provided enough guidance. A few parents also expressed uncertainty about the AI-based features (e.g., in the political toolkit or mental-health area), questioning whether teenagers would fully understand or trust automated explanations.

On the teenager side, qualitative feedback highlighted a few uncertainties: some users were unsure about the temporary app lock during digital detox challenges, emphasizing that the concept must be communicated clearly; others noted that interest in the political toolkit varied depending on personal relevance, which may have led to slightly lower ratings on certain items.

5. Design Recommendations

The design recommendations developed in this chapter represent the central outcome of this research and translate the empirical findings into concrete guidance for designing youth-appropriate social media environments. While the preceding chapters identified the challenges teenagers face—such as difficulties with self-regulation, emotional strain, algorithmic overwhelm, and the need for balanced autonomy—this chapter synthesizes these insights into actionable principles for platforms like Instagram. The recommendations outline how social media can be structured to strengthen teenagers' digital well-being, promote conscious and informed use, and provide accessible support in emotionally or cognitively demanding situations. They serve as a framework that bridges user needs, developmental considerations, and platform design practices. Their purpose is not only to enhance individual features, but to demonstrate how an overall system can be created that aligns with adolescents' developmental tasks and everyday realities. In this sense, the design recommendations form the core contribution of this work: they offer a set of evidence-based, developmentally informed directions for creating healthier, safer, and more empowering social media experiences for young people.

5.1. Time Management & Conscious Usage

The study results show that teenagers often lose track of their screen time and struggle with unconscious scrolling. Therefore, several concrete features were derived to support more conscious and autonomous time management.

Time Display

A constantly visible time display is recommended to help teenagers maintain a sense of how long they have been using the app. By default, the display appears in numerical form with the option to switch to a graphical representation showing color-coded bars or emojis (Figure 9). As usage time increases, the color shifts toward purple-red, while lower usage remains in yellow-orange tones. This feature restores time awareness and addresses the problem of normative dissociation, in which users

lose track of time during scrolling. In this sense, it also supports critical media literacy by making the act of use visible and prompting reflection on habitual consumption [23].

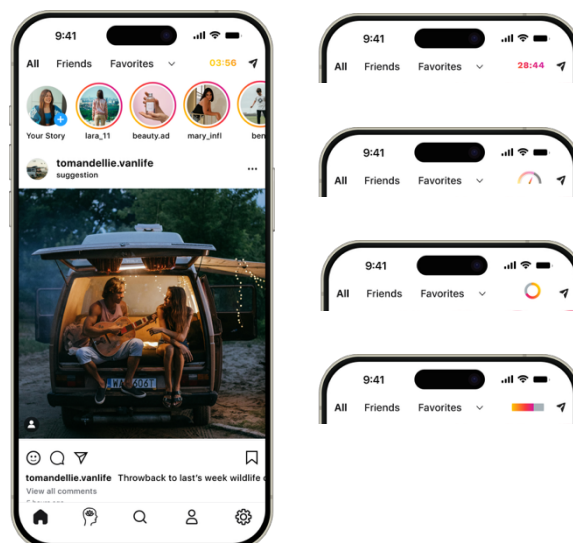


Figure 9: Time Display Options – High Fidelity Prototype [Own illustration]

Conscious App Opening

Before entering the app, teenagers are shown a 10-second screen where only “Close app” is available at first; “Open app” appears only afterward (Figure 10). This brief pause encourages users to reflect on whether they genuinely want to open the app. Users can configure from which attempt per day this screen appears (default: from the 5th opening). This concept intended to achieve that short delays can reduce impulsive app openings and promote more conscious use.

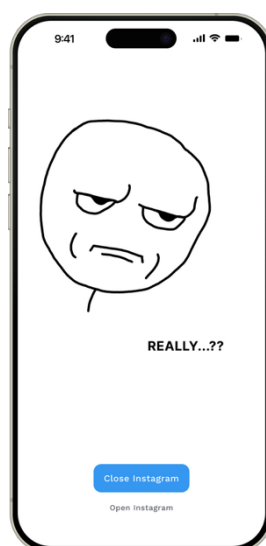


Figure 10: Conscious App Opening – High Fidelity Prototype [Own illustration]

Digital Detox Challenges

Digital Detox Challenges use completion bias positively to encourage taking breaks from the app (Figure 11). During a challenge, the app becomes temporarily inaccessible until the task is completed. Teenagers can earn streaks by staying offline for entire days, which convert into 5 extra minutes of weekly usage per streak. Daily challenges can be completed and posted as “challenge stories,” and users only see their friends’ completed challenges if they have completed their own. The goal is to

create playful, motivating exit points without turning the app into a game. Challenges can also be sent by parents as optional requests.

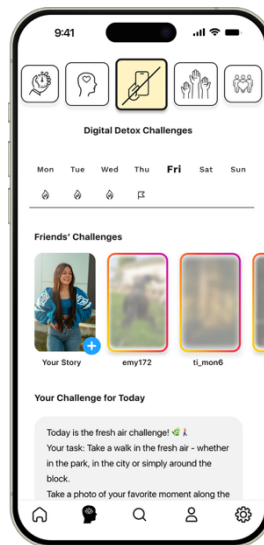


Figure 11: Digital Detox Challenges – High Fidelity Prototype [Own illustration]

Time Limits

The recommended system is based on weekly time limits rather than rigid daily limits, with the option to switch back to daily ones if wanted. Weekly limits reflect teenagers’ real routines, where some days allow no time for social media and weekends often allow more. Users can “steal time” from upcoming days if needed, but the maximum stealing time should be restricted for safety. Meta itself sets the time limit on teen accounts to 60 minutes. This can be adopted as the maximum limit, beyond which it is not possible to go. An age-appropriate gradation of personal responsibility shared responsibility of parents, and restrictions imposed by the app is essential and can be seen in Table 2.

Age	App Default Limits	Parental Responsibility	Personal Responsibility
12-14 years	30 min per day	Parents can allow more time (maximum 1h per day)	Stealing time up to 15 min
15-16 years	45 min per day	Parents can allow more time (maximum 1h per day)	Stealing time up to 20 min
17 years	60 min per day	-	Stealing time up to 30 min

Table 2. Age-Appropriate Gradation of Time Responsibilities [Own table]

Additional Exit Points

Several exit points are recommended to interrupt unconscious scrolling and support more intentional use. First of all, there are several notifications that are used as pop ups while using the app (Figure 12). There is the time-limit notification, which appears when the daily usage time is reached. When limits are reached, supportive notifications appear, with the healthier choice prominently displayed (“Take a break”) and a minor option to steal 10 more minutes until the limit is exhausted. After all available time has been used, users can only close the app or adjust settings.

A second form of interruption is the break reminder, which appears at set intervals to briefly stop users, create awareness, and counteract dissociative scrolling. The reflection stop serves a similar purpose: when users scroll within a specific filtered category, they are prompted to check whether they want to continue or adjust their filters. In this way, both features support critical media literacy

by interrupting passive consumption and encouraging teenagers to reflect on their own media use and choices [23].

For stronger intervention, content blockers prevent further scrolling after a defined number of posts and encourage users to revisit settings or take a break. The most restrictive exit point is the end-of-feed simulation, where scrolling stops entirely after a higher number of posts and users must close and reopen the app, returning to the Conscious App Opening screen. These layered exit points provide soft to stronger interruptions that help teenagers regain awareness and prevent extended, unintentional scrolling (Figure 13).

The concept behind reminders is that they should appear only when they are truly necessary, starting as a gentle prompt, then a warning, and only as a more forceful intervention if the limit is repeatedly exceeded. They are therefore intended to be a form of support, not a punishment in that sense. Additionally, they are designed to vary in order to prevent users from becoming accustomed to them.

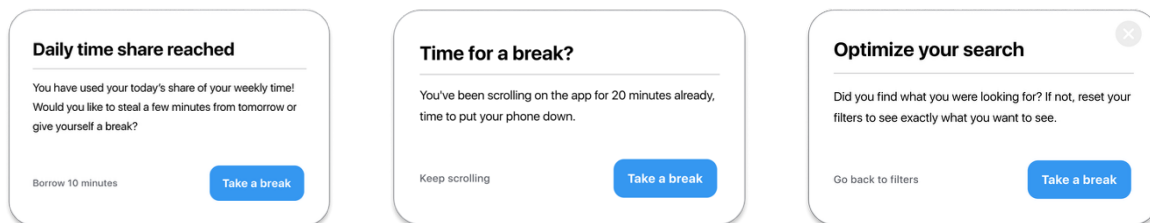


Figure 12: Reflection Stop Notifications – High Fidelity Prototype [Own illustration]

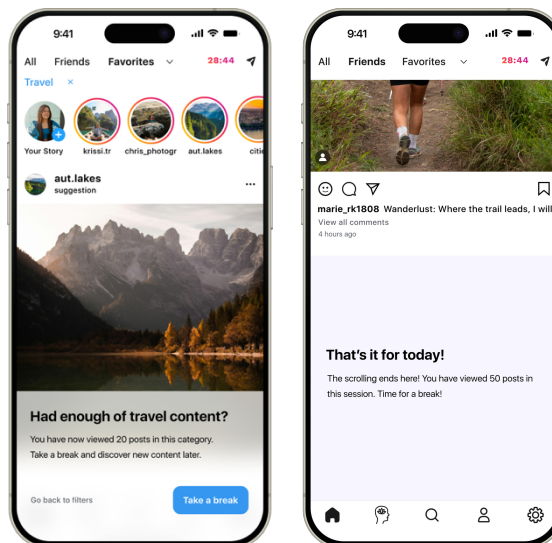


Figure 13: Content Blocker and End of Feed Simulation – High Fidelity Prototype [Own illustration]

5.2. Ethical, Non-Manipulative Design

Social media apps should be designed to prioritize the well-being of users and protect them from manipulative practices. Mechanisms should be implemented that promote mental health, respect their autonomy, and simultaneously create a safe digital space. This includes avoiding dark patterns such as endless scrolling or intrusive notifications that promote excessive usage behavior. Instead, the design should include transparent algorithms, clear exit points, and reward systems that honor positive behaviors such as taking breaks and engaging in offline activities. Furthermore, age-appropriate content and the limitation of potentially harmful content can help protect young people from misinformation, inappropriate content, and digital overload. Ethical design ensures that social

media apps are not only entertaining but also supportive and respectful of the needs and rights of young people.

AI Supported Filters

Young people must be protected from content directly from the app's side. This includes filters that restrict content for the youth version. Sensitive content is directly hidden, and there is no way to display it. Additionally, an extra filter function should provide the option to restrict further content if needed. Content that was generated with AI or on which beauty filters were used must be labeled as such. An example of this can be seen in Figure 14.

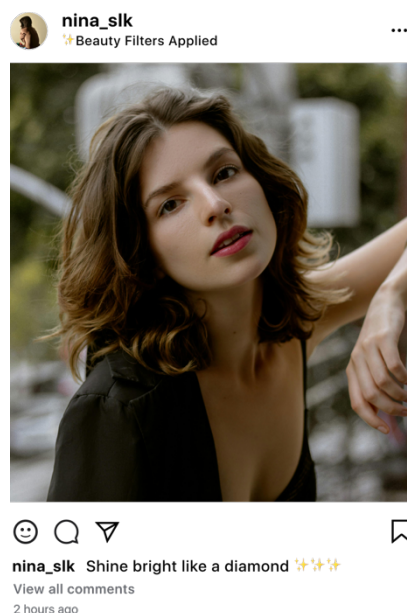


Figure 14: Labeled Beauty Filter Content – High Fidelity Prototype [Own illustration]

Filter Function

To counteract the overload of content and allow teenagers to see only what they came to the app for, there should be a filtering option to display only content from friends. The default setting shows content from people you mutually follow, and through individual settings, a personal list should be creatable. Furthermore, there should be an option to filter by topics. The list of topics can be adjusted under settings. The representation of this function can also be seen in Figure 9 at the very top of the screen.

Legal Recommendations

The goal of social media platforms is user retention and users spending as much time as possible on their platform. However, if companies want to continue offering their platforms to teenagers and not lose them as a target group (for example, through app bans like in Australia), it is necessary for them to adhere to guidelines and restrict their apps within this framework. The first point for this would be mandatory age verification. Upon registration, the correct age must be verified in order to directly redirect to the youth version. Furthermore, there must be a lock function for the app. After reaching time limits, it should no longer be possible to use the app, which could also take the form of a frozen screen that can no longer be operated. Additionally, there should be transparent algorithms with explanations for posts, detailing why they were suggested, and the option to no longer display such posts.

5.3. Well-being Functions

The Well-being functions are a feature that has been completely new to the concept of social media platforms. They can be found on the navigation bar under the head icon. This section also contains the previously described Digital Detox Challenges, as well as settings and information related to usage time. Another feature that can be found here is “Mental Health” (Figure 14). Social media significantly contributes to the impact on mental health. A feature that is supposed to help is the mood checker in combination with recommendations on mental health topics, to draw attention to accounts and exercises that can strengthen well-being. Crisis support can also help, consisting of emergency hotlines and an AI-based chat that provides recommendations and referrals. Another feature of the Well-being functions is the social and political toolkit (Figure 15). Social media is a dangerous source for the spread of fake news or conspiracy theories. For this purpose, the function Fact or Fake is intended to serve. It is supposed to give users the opportunity to have content verified and to receive trustworthy sources for it. To educate teenagers on the side, there will be News of the Day in the form of reels, to inform teenagers about current events in a concise manner, with references to the Political Guide for further information on fundamental topics.

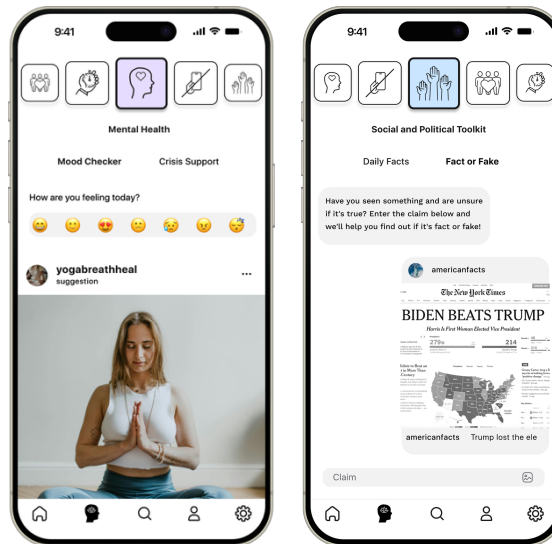


Figure 15: Mental Health and Social and Political Toolkit – High Fidelity Prototype [Own illustration]

To mitigate risks such as cyberbullying and the spread of hate or harmful comments, a simplified reporting system should be implemented. Users should be able to report comments they perceive as negative or triggering, allowing them to define personally what is acceptable. A two-level mechanism is recommended: a milder level in which the commenter receives a reflective prompt, and a stricter level in which comments can be removed directly. Additionally, integrating AI-based filtering can prevent harmful content or comments from being displayed in the first place. An example of a reflection prompt sent to commenters is shown in Figure 16.

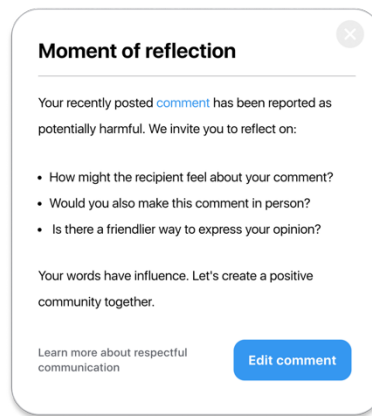


Figure 16: Moment of Reflection for Harmful Comments – High Fidelity Prototype [Own illustration]

5.4. Expanding Beyond Teenagers

The features and improvements developed for teenagers also have the potential to generate broader positive effects across the entire social media landscape. The underlying principles, conscious use, ethical design, and the promotion of constructive interactions, are universally applicable and increasingly necessary. Extending these concepts to all age groups could contribute to a healthier digital environment and encourage platforms to shift away from addiction-promoting mechanisms toward models that prioritize user well-being. Such a reorientation would not only enhance the individual user experience but could also positively influence mental health, interpersonal communication, and social cohesion.

6. Discussion

Social media plays a central role in adolescents' daily lives, offering opportunities for connection and creativity, while simultaneously exposing them to risks such as recognition-driven behavior, misinformation, and algorithmic manipulation. This study aimed to identify how platforms like Instagram can be designed to better support teenagers' safety, autonomy, and digital well-being. The findings show that teenagers are aware of problematic aspects of their usage and wish to exercise more control over their behavior. They seek a balance between autonomy and supportive guidance from both the platform and, when age-appropriate, from their parents. The results indicate that parental involvement, when non-intrusive and limited to specific functions such as approving time-limit extensions, can help maintain this balance and enhance feelings of safety without undermining independence.

The study also demonstrates that psychological principles, such as completion bias, can be used responsibly to support healthier habits. Features such as exit points, inactivity streaks, and break-oriented challenges illustrate how platforms can intervene at critical moments to reduce unconscious and compulsive scrolling. The goal of these interventions is not to restrict teenagers but to provide reflective moments that encourage intentional use.

While the proposed alerts, reminders, and blockers are intended to support self-regulation, their effectiveness depends on not becoming overly intrusive or repetitive. To avoid frustration and notification fatigue, such features should remain adaptive, user-controlled, and context-sensitive, with gentle nudges preferred over constant interruption.

At the same time, the work acknowledges that many problematic patterns in social media use stem from deeply embedded systemic mechanisms that cannot be fully reversed. While the recommendations proposed here can mitigate negative effects and promote healthier digital habits, long-term change requires a broader shift in how platforms prioritize user well-being over engagement maximization. The design recommendations developed in this study provide an

evidence-based toolkit that contributes to such a shift by emphasizing transparency, conscious use, and ethically grounded interaction patterns.

Beyond reducing excessive use, the core purpose of the proposed design features is to make the logic of social media visible to teenagers and to strengthen their capacity for autonomous reflection. In this sense, the design does not aim to simply restrict behavior from the outside, but to create situations in which young users can recognize patterns such as endless scrolling, habitual checking, algorithmic feeding, and time distortion for themselves. This aligns with the principles of critical media literacy, which emphasize that media users should not only consume content but also learn to question, interpret, and critically engage with the structures and intentions behind it [23]. For adolescents in particular, this means that awareness has to be developed gradually: the platform should not assume that young users already recognize these mechanisms, but should instead expose them in a way that makes reflection, learning, and self-regulation possible. The goal is therefore not only protection, but also empowerment through understanding.

Unlike self-regulatory functions, AI-based information and support functions require significantly stronger governance structures. The “Fact or Fake” function, in particular, carries risks, as automated assessments can be flawed, lead to excessive trust in AI-generated content, or be misleading due to insufficiently transparent decision-making logic. For politically or educationally oriented content, the question of objectivity, responsibility, and potential influence on the selection and presentation of information also arises. The mental health chat is particularly sensitive as well, since it addresses emotionally vulnerable users and must therefore meet high standards for security, reliability, and data protection. In this paper, these functions are therefore understood more as conceptual proposals that, while demonstrating interesting potential, would require comprehensive ethical, technical, and organizational safeguards for their actual implementation. Ideally, such functions would need to access transparently identified and reliable sources that are directly displayed to users, so that the information remains traceable and verifiable.

In an increasingly digital world, the key question is how to shape technology so that it supports, rather than undermines, young people’s development. As Jaron Lanier states in *The Social Dilemma*, “You can’t put the genie back into the bottle” [27]. While the effects of today’s platforms cannot be undone, the findings of this work illustrate that meaningful improvements are possible. The recommendations presented here therefore serve as a call to designers, developers, and decision-makers to take responsibility for creating healthier and more empowering digital environments for the next generation.

6.1. Limitations

This work represents an important initial step toward youth-friendly social media design, but several limitations must be acknowledged. First, the empirical basis relies on a relatively small and relatively homogeneous sample of adolescents and parents, which restricts the generalizability of the findings. Additionally, the possibility of social desirability bias cannot be fully ruled out, particularly because the interviews addressed personal media habits and potentially sensitive topics such as overuse, self-regulation, and parental involvement. Second, only selected prototype features were tested, meaning that potential interactions or combined effects between multiple functions were not examined. Third, the long-term effectiveness of the proposed measures remains unclear, as adolescents’ usage behavior is dynamic and may change over time. It is therefore uncertain how features such as digital detox challenges, exit points, or weekly time limits would influence behavior in real-world, long-term contexts. The same applies for empirical testing on long-term user reactions such as notification fatigue, frustration, or disengagement from repeated interruptions.

A further limitation concerns a set of functions that were positively received by participants but not examined in depth because they extend beyond the primary focus of this work. These include community-oriented features such as local engagement opportunities, the Political Guide, Mental Health Resources, and Local Help points for accessing support. Although relevant, these functions were not analyzed in detail and therefore require further empirical exploration. The Community

Support Groups were included as a sample icon under the well-being feature and could still find a place in this category, but the feature was not systematically evaluated.

A further limitation concerns the AI-based features proposed in this work, especially the Fact or Fake function and the mental-health chat, which were not evaluated for reliability, safety, or governance implications. In particular, questions of source transparency, objectivity, human oversight, and the prevention of bias or hallucinations remain unresolved.

6.2. Future Research

Future research should build on the findings of this study by expanding the empirical base and examining the proposed concepts in more depth. First, larger and more diverse samples are needed to obtain results that are more generalizable across different age groups, socio-economic backgrounds, and cultural contexts. This would help validate whether the needs and preferences identified in this study hold true for a broader population of adolescents and parents.

Second, future studies should investigate the combined effects of multiple features. Since this work tested selected functions in isolation, it remains unclear how features such as time limits, exit points, digital detox challenges, and political or mental-health tools interact when integrated into a full platform. Controlled experiments and comparative prototype testing would provide a clearer understanding of potential synergies, conflicts, or cognitive load implications.

Third, longitudinal research is needed to evaluate the sustained impact of the proposed interventions. Usage behavior is dynamic, and features that work well in short-term testing may lose effectiveness over time. Long-term field studies or real-world implementation trials would help determine whether the proposed features genuinely support healthier habits, digital well-being, and more conscious use.

Fourth, several functions that were positively received but not examined in detail—such as political education tools, local engagement features, mental health resources, or community support groups—warrant dedicated investigation. Their psychological, social, and ethical implications should be explored carefully, particularly when targeting young users.

Finally, advancing this work will require interdisciplinary collaboration. Partnerships between designers, psychologists, sociologists, educators, and industry practitioners could help refine the proposed concepts and assess their feasibility within real social media infrastructures such as those of Instagram. Such collaboration would help ensure that youth-friendly platform design is grounded in robust evidence and aligned with broader societal and developmental needs.

7. Conclusion

In a world increasingly shaped by digital media, the question of how social platforms should be designed is both relevant and urgent. This work examined how environments such as Instagram can be structured not only for entertainment but also to support adolescents' well-being. The findings highlight the tension between commercial engagement-driven design patterns and the ethical responsibility to protect young users, who are particularly susceptible to manipulation due to their developmental stage. Instead of restricting access to social media, the results emphasize that responsibility lies in the design itself: platforms must integrate tools that promote conscious use, digital well-being, and informed engagement.

The study identified several design approaches that can meaningfully support teenagers. Time-management tools and options to limit or filter displayed content strengthen self-regulation and enable more reflective use. Mental health resources, such as mood-based recommendations and crisis support, provide low-threshold assistance beyond entertainment. Exit points and digital detox challenges demonstrate how mechanisms often used to increase engagement can instead be repurposed to encourage breaks and healthier habits. These findings show that ethically grounded and developmentally appropriate design is both feasible and effective.

The implications of this work extend beyond the adolescent target group. Social media shapes communication, political opinion formation, and interpersonal relationships for users of all ages.

Implementing ethically informed design principles can therefore contribute to a more responsible digital culture. At the same time, the study underscores the substantial responsibility designers carry: design decisions influence the behavior and well-being of millions, particularly within vulnerable demographics.

Overall, this work provides a vision for a safer and more responsible digital environment. While the structural challenges of today's social media landscape cannot be fully reversed, the insights presented here demonstrate that meaningful improvements are possible. Through research-based recommendations and ethical design, platforms can be transformed into spaces that empower users and promote well-being, if these principles are consistently implemented.

Generative AI Statement

The author used ChatGPT by OpenAI during the preparation of this manuscript for language editing, idea structuring, drafting support, and assistance during the qualitative data analysis process following Mayring's approach (e.g., support in summarizing statements and refining categorizations). No AI tools were used for autonomous data interpretation or generation of research findings. All analyses, interpretations, conclusions, and final content were critically reviewed and approved by the authors.

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Appendix A. Likert Scale Questions Teenagers

- 1.1.1 The situation of spending too much time on social media without seeing what I actually wanted to look at reminds me of my own experiences.
- 1.1.2 I find it useful that I can decide for myself what content I want to see.
- 1.1.3 The function for selecting my preferred content is understandable.
- 1.2.1 The favorites bar gives me the feeling of having more control over my content.
- 1.2.2 The favorites bar makes me feel less overwhelmed by too much content.
- 1.2.3 I would use this filter feature regularly to customize my Instagram experience.
- 2.1.1 I can empathize with the situation of losing track of time on social media.
- 2.1.2 I find it helpful to have the elapsed time displayed directly to keep my sense of time.
- 2.1.3 I would prefer the time display to be a graphical element (e.g. bars with color change, smiley feedback, etc.).
- 2.2.1 The situation of spending too much uncontrolled time on social media reminds me of my own experiences.
- 2.2.2 The function would help me to manage my time more consciously.
- 2.2.3 I would use the time limit function to control my usage time more.
- 2.3.1 I find it helpful that I can steal or save time from other days.
- 2.3.2 I find it nice that I can decide for myself which days I spend more or less time on Instagram.
- 2.3.3 I think it's okay that I need my parents' permission to change my time limit until I'm 14.
- 3.1.1 I understand why digital detox challenges are suggested to me.
- 3.1.2 I find it helpful that the app recommends a challenge after I've been online for a while.
- 3.1.3 The overview of my daily activities (challenges, offline times, longer online times) is understandable and helpful.
- 3.2.1 The proposed challenges could help me to get out of the so-called 'zombie mode'.
- 3.2.2 I think it's good that my parents can also give me a digital detox challenge.
- 3.2.3 The opportunity to document my completed challenge motivates me to complete my challenge.
- 4.1.1 The use of social media for political information reminds me of my own experiences.
- 4.1.2 The uncertainty about whether information on social media is true or false sounds familiar to me.
- 4.1.3 The social and political toolkit would help me to better understand all the political content on social media.
- 4.2.1 The short daily reels would make it easier for me to grasp complex topics quickly.
- 4.2.2 I find it helpful that I can enter claims or posts into the fact checker for verification.
- 4.2.3 The community activities map would motivate me to get more involved in my neighborhood.
- 4.3.1 The political guide would help me to better understand political issues.
- 5.1.1 The situation that social media sometimes has a negative impact on my well-being reminds me of my own experiences.
- 5.1.2 I think it would help me if the app gave me mental health recommendations based on my mood.

5.1.3 I find it useful that the app offers crisis support that directs me to a hotline in an emergency.

5.2.1 I would use the chat function to get support in case of problems.

5.2.2 The step-by-step instructions (e.g. on therapy options) would be helpful for me if I ever needed support.

5.2.3 I find it useful that the app offers definitions of mental health issues.

5.3.1 I would use the map of local support services to find support near me.