

# Designing and building a Pomodoro-Enhanced bookmark to encourage teenagers' reading habits

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# Abstract

Teenagers' engagement with long-form reading has declined in recent years. This project uses interaction design to support and encourage reading habits among 13–16-year-olds. Through interviews, prototyping, and user testing with Romanian teenagers living abroad, it explored challenges in reading and tested a Pomodoro-inspired bookmark and reading lamp that breaks reading into manageable sessions using calm visual cues instead of disruptive notifications. While the approach helped sustain focus, it showed limitations in motivating reading initiation and adapting to different book formats. The culturally narrow participant group and short study duration potentially limit the findings' generalizability. Despite these constraints, the project demonstrates how subtle, non-intrusive design interventions can assist in supporting reading focus and highlights the importance of intrinsic motivation, content engagement, and environmental adaptability. Future work should include long-term studies, more diverse participants, and enhanced motivational strategies to better foster lasting reading habits.

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# 1 Introduction

Over the past decade, teenagers' reading habits have drastically declined, raising concerns about literacy, cognitive development, and mental well-being. While previous generations engaged with books and magazines for leisure, today's teenagers spend significantly more time on digital platforms like TikTok and Instagram. Studies indicate that fewer than 20% of U.S. teenagers read for pleasure daily, while over 80% engage with social media every day (Twenge, Martin, & Spitzberg, 2019). This project operates under the assumption that similar trends of declining reading habits among teenagers are also occurring in Europe, despite much of the existing research focusing on the U.S. context.

The rise of short-form video content has reshaped how young people consume information, favouring fast-paced, visually engaging material over deep, immersive reading. This shift has been linked to reduced attention spans and an increasing preference for instant gratification, making it harder for teens to engage with long-form content such as books (Schultz, 1998; Volkow et al., 2012). However, reading remains crucial for cognitive and emotional well-being, supporting brain development, comprehension, and stress reduction (Arslan et al., 2022). As digital entertainment continues to dominate, the challenge lies in finding new ways to reignite teenagers' interest in reading and help them rediscover its benefits.

From an interaction design perspective, this issue presents an opportunity to explore new ways of making reading more engaging, interactive, and socially relevant to teenagers. By leveraging design principles such as time management techniques or habit building methods, there is potential to address the shift between traditional reading and modern digital behaviours. Designing interventions that align with teenagers' preferences and needs while fostering a reading habit could help reverse this decline and redefine how young people interact with literature.

Consequently, my approach focuses on addressing the shift between teenagers' growing reliance on digital media and the decline in traditional reading habits. Rather than solely investigating why teens are not reading, my emphasis is on how interaction design can encourage them to read more and foster long-term reading habits through technology. I aim to explore how digital platforms, and technology can be leveraged to create engaging, immersive experiences that not only capture teenagers' attention but also promote the cognitive and emotional benefits of reading. I aim to create a technical solution that encourages reading in a way that captures teenagers' interest and making reading feel less overwhelming, fostering both cognitive growth and emotional well-being. The central research question for this project is:

1. *What are some design interventions that can encourage long-form reading habits among teenagers?*

This question will guide the exploration of both the design aspects and broader strategies that can make reading more appealing to teenagers in today's technology-driven world.

To explore how reading can be made more engaging for teenagers in the digital era, this study follows a qualitative, user-centred approach that focuses on understanding the reading behaviours, preferences, and challenges of teenagers aged 13-16. The research process involves engaging directly with teenagers to gain insight into their relationship with reading, their digital consumption habits, and what might encourage them to read more. Based on these findings, a prototype will be designed and developed that integrates digital elements to enhance reading engagement. By centring the design process around the needs and experiences of teenagers, this study aims to propose strategies that encourage reading in a way that aligns with their current needs and reduce the sense of overwhelm. In addition to the central research question, the project is guided by a several sub-questions, that were explored throughout the process:

- 1.1 *What are some main barriers teenagers face when engaging in long-form reading?*

- 1.2 *What are some additional tools or practices that can be integrated into the reading setup of teenagers without adding unnecessary steps?*

- 1.3 *What types of feedback can be most effective and unintrusive while still maintaining reading flow for teenagers?*

This project's contributions include proposing strategies to make reading more engaging for teenagers in the digital era by integrating technology in ways that aligns the activity with the fast-paced nature of today's digital world. Additionally, it introduces a prototype that applies interactive design principles to enhance the appeal of reading, potentially encouraging the development of sustained reading habits. The prototype is a Pomodoro-enhanced bookmark and reading lamp designed to support teenagers' long-form reading habits by reducing the feeling of being overwhelmed, breaking reading into manageable mini-sessions with built-in breaks. Furthermore, the research will contribute to the broader discourse on adapting traditional reading practices to the digital landscape, offering insights into how technology can support literacy and cognitive development among teenagers. However, this study is limited by factors such as the scope of user testing, which may not capture the full diversity of teenage reading preferences, and the challenge of measuring long-term behavioural change within the study's timeframe. Additionally, participants in this study were selected from my personal network, which allows for more in-depth exploration of their reading habits and preferences while also simplifying the

process of obtaining parental consent, as trust is already established. This approach may limit the generalizability of the findings to a broader teenage population.

The thesis is structured as follows: The second section will review existing literature on reading habits among teenagers, the impact of social media on attention spans, and other attempts to solve this issue through technology. The third section outlines the research methodology, detailing the general methods employed and the approach to data analysis. The fourth section focuses on the design process, including the structure of the interviews, key insights gathered, and how these informed both the development and testing of the prototype. The fifth section discusses the findings in relation to the initial research questions, offering a critical interpretation of the results. The sixth section addresses the limitations of the study. The seventh section presents the conclusions of the project by summarizing key insights and reflecting on the broader implications of using interaction design to support teenage reading habits. Finally, the eighth section explores potential future directions for the development of digital tools that support long-form reading in a digitally saturated environment.

## 2 Background

This section presents research and projects that examine the decline in teenage reading habits, with a particular focus on the impact of social media and digital content consumption. It will first review studies highlighting how adolescents spend less time reading and the challenges they face, such as lack of interest, competing digital distractions, and perceptions of reading as a passive activity. Next, it will explore the cognitive, emotional, and academic benefits of regular reading, emphasizing why fostering these habits remains important. The section examines how digital formats, such as e-books, audiobooks, and graphic novels, offer potential to re-engage young readers. Finally, it will review initiatives and studies that have successfully encouraged reading through social interaction, peer influence, and structured activities, providing insight into strategies that could inform the design of this project.

### 2.1 The decline in reading habits and the influence of social media

This section reviews some of the relevant research and projects that have aimed to address this decline in reading habits, with a particular focus on how engagement in recreational reading can be encouraged in today's technology-driven environment. These efforts will inform the design of my own project,

which seeks to leverage modern technology to make reading a more engaging and enjoyable activity for young audiences.

Research suggests that adolescents are spending significantly less time reading books and magazines compared to previous generations, with digital media consumption increasing in parallel (Twenge, Martin, & Spitzberg, 2019). A significant portion of teenagers either struggle with reading, find it uninteresting, or perceive it as a passive activity that lacks the stimulation found in digital formats (Kasáčová & Babiaková, 2019). Many teenagers perceive reading as time-consuming and less appealing than other activities such as socializing, gaming, or consuming digital content. The decline in reading habits has implications for literacy development and academic performance, as research suggests a strong correlation between consistent reading habits and educational success (Davidovitch & Gerkerova, 2023; Howard, 2011; Ojetunde, 2022).

The rise of social media and short-form video content on platforms like TikTok and Instagram has significantly influenced how teenagers engage with information (Asif & Kazi, 2024; Galadima & Bright, 2020; Haliti-Sylaj & Sadiku, 2024). The rapid, dopamine-driven nature of these platforms conditions users to expect instant gratification (Schultz, 1998; Volkow et al., 2012), which contributes to reduced attention spans. This shift in how teenagers interact with content has further diminished their interest in more time-consuming activities such as reading. This could suggest that the constant flow of fast-paced, visually engaging content on social media often competes with the slower, more focused process of reading, making it harder for teens to engage in sustained attention or develop deep reading habits.

## 2.2 The benefits of reading

However, reading plays a crucial role in cognitive development, strengthening neural connections, enhancing comprehension, and improving memory retention (Chang, Wu, & Hsiung, 2021). It is an active process that requires focus and mental engagement, which contrasts with the instant gratification associated with digital media. Studies have shown that regular reading can significantly boost cognitive function, as it engages multiple brain areas that are essential for critical thinking and problem-solving (Davidovitch & Gerkerova, 2023). Additionally, reading has been linked to various mental health benefits, such as stress reduction, increased happiness, and improved emotional resilience. The act of reading, particularly long-form content, provides an escape from the pressures of everyday life and can serve as a powerful tool for emotional regulation and well-being (Arslan et al., 2022). These benefits underscore the importance of developing effective strategies to encourage reading habits among teenagers, particularly in a digital age that prioritizes quick, often superficial content consumption.

Additionally, the rise of digital formats like e-books, audiobooks, and graphic novels has shown potential in engaging reluctant readers (Rutherford

et al., 2017). Despite this, research indicates that adolescents in the 13 to 16 age group are particularly susceptible to shifting interests, increased academic pressures, and the growing appeal of digital entertainment (Twenge, Martin, & Spitzberg, 2019). This combination of factors further deepens the divide between traditional reading habits and the digital distractions that now dominate teenagers' daily lives.

## 2.3 Initiatives to encourage reading habits

One notable initiative aimed at reversing this trend is the Porch Reads (Gauder, Giglierano, & Schramm, 2007) program at the University of Dayton, which sought to encourage college students to engage in reading for pleasure. Through a yearlong pilot, students joined small group discussions around a free book, showing that even minimal motivation and social interaction can reignite interest in reading for enjoyment. The findings from this project could also be relevant for teenagers, as they, too, may benefit from similar approaches to rekindle their interest in reading outside of academic requirements.

Another research (Sackris, 2020) shows that structured learning activities can play a significant role in fostering reading engagement among students. Various approaches, such as active reading assignments, group discussions, and structured argument analysis, have been effective in helping students engage more deeply with texts. Integrating technology, such as online access to materials and structured responses, effectively boosts student engagement. These findings highlight how interactive, discussion-based approaches can enhance comprehension and motivation, offering useful strategies for younger readers.

Mansor et al. (2013) has highlighted the strong influence of both parents and peers in shaping teenagers' reading habits. While parental encouragement and access to resources play a foundational role in developing an interest in reading, peer influence often serves as a powerful motivator in sustaining and expanding reading engagement. Teenagers are more likely to pick up books that their friends discuss and recommend, as shared reading experiences create a sense of belonging and excitement. This study suggests that peer influence plays a more significant role in determining the types of books teenagers choose and their overall enthusiasm for reading. Understanding this dynamic is useful for developing strategies that leverage social interactions to promote reading among young audiences.

Another approach aimed at shifting teenagers' attitudes toward reading involved the use of nudging techniques. Nudging can play a valuable role in encouraging teenagers to choose reading over more immediately appealing activities by making reading more noticeable through subtle reminders (van der Sande et al., 2023). These reminders bring reading to the forefront of teenagers' minds as a leisure option, increasing the chances they will engage with it during their free time. The study has shown that sending

visual nudges, such as images of books or shared reading moments, to teenagers or their parents helps reinforce reading as a valued activity. This method tends to be most effective when both parents and teens already have a positive attitude toward reading but need extra motivation to act on it. However, nudging alone is often not enough to change behavior in teenagers who initially show little interest in reading. The timing and delivery of these reminders, ideally outside school hours and tailored to fit daily routines, can boost their effectiveness by aligning with natural reading opportunities. While nudges can encourage a more positive reading attitude and increase leisure reading frequency, they are most successful when combined with broader strategies that address motivation, engagement, and supportive environments rather than used in isolation.

The research reviewed in this section emphasizes that social interaction, structured engagement, nudging and personal motivation all play important roles in fostering lasting reading habits. However, these strategies must also contend with the broader challenge of time management in teenagers' busy, distraction-filled lives. With competing demands from school, social media, and other digital entertainment, finding consistent time to read, and sticking to it, remains a significant hurdle. To truly support long-term engagement, it is essential to address the practical issue of time management and help teenagers integrate reading into their daily routines. This project therefore also focuses on exploring how structured time management techniques and habit-building strategies can reduce barriers to reading, making it easier for young readers to develop and maintain regular reading practices.

## 2.4 Approaches to time management

Building lasting reading habits among teenagers requires more than just fostering interest, it also demands effective strategies to navigate the challenges of time management in a distraction-heavy environment. Teenagers often struggle to allocate time for sustained, focused activities like reading, as their daily routines are dominated by academic pressures, social media, and digital entertainment (Twenge, Martin, & Spitzberg, 2019). Time management interventions, such as structured routines, have been shown to improve the ability to balance activities and to reduce the stress of starting a new activity (Biwer et al., 2023). Furthermore, research on habit formation highlights that repeating simple actions within a consistent context gradually builds automaticity, even without external rewards, however intrinsic reward could be helpful (Lally et al., 2010). The same study highlights that over time, this repetition reduces the need for conscious effort, making the behavior more likely to persist as a long-term habit.

Several methods have been shown to improve productivity and time management, which in turn support habit formation. One such method is the Pomodoro Technique, which enhances focus by breaking tasks into smaller,

more manageable segments, making it easier to begin (Biwer et al., 2023). Another approach is body doubling, commonly used to encourage task completion by having someone else present (Eagle, Baltaxe-Admony, & Ringland, 2024). Although body doubling is especially popular among neurodivergent individuals, the assumption here is that it can also benefit anyone who needs external stimulation or accountability to get started on activities.

### 2.4.1 Body doubling

Body doubling can be broadly defined as using the presence of others to facilitate task completion. This presence can be physical or technologically mediated, such as through video or voice calls, social media live streams, or even pre-recorded content (Eagle, Baltaxe-Admony, & Ringland, 2023). Interestingly, the presence doesn't necessarily have to be a real person, many individuals find motivation and companionship from YouTube videos featuring real or animated characters while working (Eagle, Baltaxe-Admony, & Ringland, 2023).

For neurodivergent individuals, body doubling addresses specific challenges encountered during different stages of task completion, including preparing to start, beginning, staying focused, and finishing tasks (Eagle, Baltaxe-Admony, & Ringland, 2024). The presence of others helps mitigate feelings of isolation and intimidation that can arise from overwhelming to-do lists. The same study shows that body doubling helps participants feel less alone in their tasks and fosters a supportive mindset, which makes tasks feel less overwhelming.

Body doubling varies in terms of mutual awareness and accountability. On one end of the spectrum, it involves performative accountability where two people actively support each other, for example by video calling. On the other end, body doubling can simply mean sharing a space with someone unaware of their role as a body double (Eagle, Baltaxe-Admony, & Ringland, 2023).

Surveys indicate that many neurodivergent individuals rely on body doubling to accomplish a wide range of tasks, from academic work and professional duties to household chores and cooking. While friends and family are commonly used as body doubles, people also utilize strangers online through platforms like Discord or Focusmate, and even strangers in public spaces such as cafés (Eagle, Baltaxe-Admony, & Ringland, 2024). This practice has emerged as a community-driven phenomenon to address the productivity challenges faced by these groups (Eagle, Baltaxe-Admony, & Ringland, 2024).

### 2.4.2 The Pomodoro technique

The Pomodoro Technique, developed by Francesco Cirillo in the late 1980s, is a time management method designed to boost productivity by structuring

work sessions into 25-minute intervals followed by 5-minute breaks. Each session, or *pomodoro*, is named after the tomato-shaped kitchen timer Cirillo used during his university years (Ahmed et al., 2014; Costales et al., 2022). The system aims to create clear boundaries between work and rest, minimizing distractions and mental fatigue (Ahmed et al., 2014; Costales et al., 2022).

Studies have shown that structured, system-regulated breaks, like those prescribed by the Pomodoro Technique, are more effective than self-regulated break-taking. Participants using pre-determined breaks reported better mood, less fatigue, and greater concentration, while self-regulating individuals experienced higher levels of distraction, cognitive load, and demotivation (Biwer et al., 2023). The systematic approach also alleviates the secondary cognitive load of having to decide when to take breaks, thereby preserving mental resources for learning tasks (Biwer et al., 2023).

In practical applications, the Pomodoro Technique has demonstrated measurable success in educational settings. For instance, its implementation during online learning at STAMI Pematangsiantar led to improved time management and reading performance. Students who used Pomodoro-based strategies showed significant increases in reading comprehension from physical books, especially during the COVID-19 pandemic when maintaining motivation was a challenge (Kisno, 2020).

Additionally, tools based on the Pomodoro Technique have been developed to support graduate students in managing time, boosting productivity, and combating procrastination. One study reported that 71.4% of users reduced their procrastination behaviours after using a Pomodoro-based tool, though some found it difficult to strictly adhere to timed work and break intervals (Almalki et al., 2020). Still, the technique's simplicity, breaking large tasks into smaller, manageable chunks with scheduled breaks, makes it a practical and accessible solution for improving focus and task completion (Almalki et al., 2020).

Given its proven effectiveness in managing attention, reducing procrastination, and enhancing motivation, the Pomodoro Technique presents a valuable opportunity for promoting reading among teenagers, particularly those who struggle with focus or lack established reading habits. By framing reading sessions as manageable 25-minute tasks followed by short, rewarding breaks, the technique can lower the psychological barrier often associated with longer or unstructured reading periods. This structure could not only help in forming consistent habits but also making reading feel more achievable and less overwhelming. Additionally, integrating Pomodoro timers into reading environments, tailored to teens' preferences, could offer a compelling, gamified approach to encourage sustained engagement with physical books, especially when reinforced with other incentives, such as visual or social.

## 3 Methods

This project follows a User-Centered Design (UCD) approach as its main framework, ensuring that the needs, behaviors, and preferences of the target audience directly shape the design process. UCD prioritizes gathering insights from users to inform design decisions, with the goal of developing intuitive and engaging solutions that address usability challenges and improve user satisfaction (Muratovski, 2016). By focusing on the user experience, the project aims to create a product that resonates with teenagers and encourages reading engagement.

To add structure to the process I follow the Revamped Double Diamond (Figure 1) design model (Pedersen, 2024), moving through the phases of Discover, Define, Develop, and Deliver. This model was chosen over the simpler Double Diamond framework (Rugman & D'Cruz, 1993) because it provides a more detailed and structured design approach, making it a better fit for the project's needs. Minor modifications may be made to this framework as necessary to accommodate project needs and findings throughout the process.

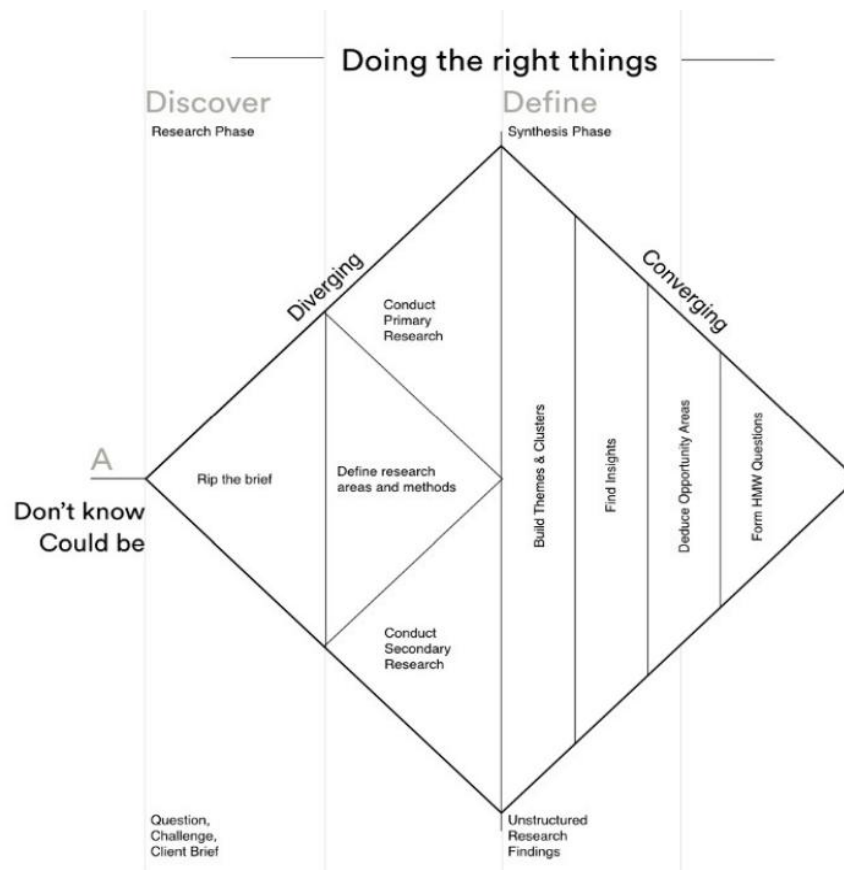


Figure 1.a: First half of the Revamped Double Diamond design model as presented by Pedersen (2024)

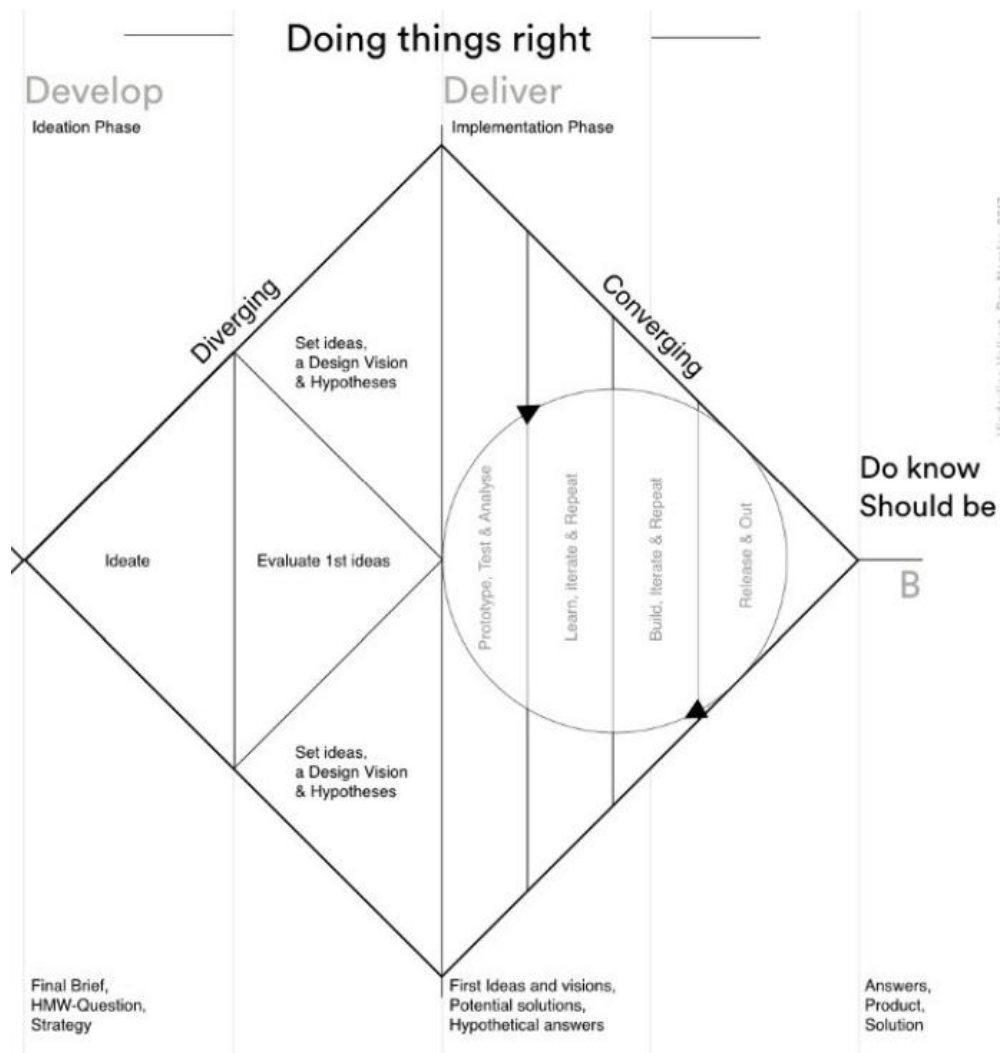


Figure 1.b: Second half of the Revamped Double Diamond design model as presented by Pedersen (2024)

### 3.1 Research Methods and Process

A qualitative research methodology guides this project, chosen for its ability to explore complex behaviors, attitudes, and motivations in-depth. This methodology allows the collection of rich, detailed data essential for understanding teenage reading habits and identifying factors influencing their engagement with reading (Muratovski, 2016).

The research process includes two rounds of semi-structured interviews with selected participants. The first round took place early in the project, during the Discover phase (Figure 1.a), to gain insight into participants' current reading habits, preferences, and their relationship with reading, as well as identify common patterns or challenges (See Appendix A). As outlined in Figure 1.a, this phase includes both primary and secondary research activities. Review of relevant academic literature serves as the primary research component, providing a theoretical foundation and helping

to identify established gaps and opportunities in the field. The interviews complement this as secondary research, offering contextual, user-specific insights that contribute to a more grounded understanding of the problem space. The semi-structured interview format allows flexibility, encouraging participants to share personal experiences in detail. Many of the questions are open-ended, designed to elicit descriptive responses (See Appendix A), allowing participants to express thoughts freely and provide context-rich insights. Together, these methods help define the research area and determine which design methods are most appropriate for the project moving forward.

The second round of interviews is conducted during the Deliver phase (Figure 1.b) and serves to evaluate the proposed solution and make small adjustments accordingly. These interviews (See Appendix C) function as a tool for testing initial concepts, gathering direct user feedback on the prototypes, and identifying areas that may require improvement before final implementation.

### 3.2 Interviews in the Discover phase

All of the interviews were conducted remotely via phone or online voice calls due to the participants' locations. The participants live abroad with their families in various European countries, making remote interviews the most practical and accessible format.

The interviews conducted for this project followed a semi-structured format (See Appendix A), guided by a flexible script that outlined key themes and topics to explore (Kvale, 2007). This approach allowed room for spontaneous discussion and for participants to share personal experiences and reflections in their own words, while still ensuring consistency across sessions. As recommended by Kvale (2007) in the interview methodology, the setting was designed to be comfortable and informal, encouraging participants to speak openly about their reading habits and attitudes.

As mentioned by the author, a key factor is to build rapport and trust with the participants, this was handled here by interviewees by drawing interviewees from my personal network. This pre-existing relationship created a foundation of familiarity and mutual trust, which supported a more open and honest dialogue from the outset. Following the structure described by Kvale (2007), at the beginning of each interview, I conducted a interviewees to explain the purpose of the conversation, how the information would be used, and obtained consent for audio recording. Participants were also invited to ask questions before we began, reinforcing a sense of transparency and comfort.

At the end of each session, I asked whether participants had any final thoughts to share and briefly checked in on their experience of the interview itself. This not only allowed for any missed insights to surface but also

contributed to a more respectful and participant-centered process, as recommended (Kvale, 2007).

All interviews were audio recorded (with consent) and later transcribed using faster-whisper, an AI-based for faster and more efficient transcription, to ensure accuracy in capturing participants' responses. Transcriptions are used to extract key insights and inform the design process and they are analyzed using thematic analysis (Braun & Clarke, 2006).

As presented by Braun and Clarke (2006), thematic analysis is a technique used to identify, analyze, and report patterns (themes) within a data set. At a basic level, it organizes and provides a detailed description of the data. However, it often goes beyond mere description by interpreting different facets of the research topic. Thematic analysis involves familiarizing yourself with the data, coding interesting features, grouping codes into themes, reviewing and refining these themes, and finally producing a report that connects the analysis to the research question.

The participant group consists of Romanian teenagers who have relocated from Romania to other European countries. These participants are bilingual, speaking both their mother tongue and the local language of their new country. During the interviews, the project touched upon how this bilingual experience may impact on their reading habits, preferences, and engagement. This specific context is expected to provide perspectives on reading practices within multicultural and multilingual environments. Although this is a specific subgroup, for the purposes of this work, I will assume that the reading-related struggles they experience are similar to those faced by other teenagers.

### **3.3 Define, Develop and Deliver**

Based on findings from the interviews in the Discover phase, the ideation phase explores possible concepts and features designed to make reading more engaging for the target audience. Those turn into prototypes, which are then tested with participants. Testing sessions aim to observe interactions, collect feedback, and refine the prototypes accordingly.

#### **3.3.1 Ideation**

Ideation enables the generation and refinement of ideas based on insights gathered during research. In this project, there will be two ideation sessions. The first will take place during the Define phase of the Revamped Double Diamond model (Figure 1.a), helping to narrow down options and determine the specific focus of the project by identifying the most promising directions. This first ideation phase will also serve to build themes and clusters, drawing from the findings of the earlier interviews and literature review conducted in the Discover phase. It aims to translate these insights into clear project directions.

The second ideation session occurs during the Develop phase (Figure 1.b), where brainstorming method (Putman & Paulus, 2009) is used to explore concrete solutions for making reading more engaging for teenagers. During this project, sticky notes were the main tool for brainstorming, as they proved highly effective in generating, organizing, and visualizing ideas (Ball, Christensen, & Halskov, 2021). Their nature allowed for the creation of mind maps, categorization of themes, and rearrangement of thoughts, making them useful, particularly in contexts where creativity and ideation are essential. The brainstorming method, originally developed by Osborn (1953) as cited by Ball, Christensen and Halskov (2021), is still commonly practiced using sticky notes, which serve not only as idea-capturing tools but also as visual aids.

This phase will focus on shaping early ideas into a prototype and evaluating it through user input. Ultimately, the goal is to refine this prototype iteratively, evolving it into a final version based on feedback and testing outcomes. This dual approach ensures that the project is both well-defined from the outset and remains adaptable as new insights emerge.

Prototyping is essential for transforming abstract ideas into tangible representations that can be tested and refined. For this project, the phase occurs within the Develop (Figure 1.b) stage, where initial low-fidelity prototypes will be created to experiment with different features and formats. By building and iterating prototypes, the project evaluates potential solutions before committing to a final design, reducing the risk of ineffective outcomes.

### 3.3.2 Testing

Testing plays a crucial role in assessing how well the proposed solutions address the identified challenges. Conducted during the Develop and Deliver (Figure 1.b) phase of the Double Diamond process, testing involves gathering user feedback to refine and optimize the design. Testing is carried out for the prototype during the Develop phase, with possible small adjustments made on the spot based on participant feedback. This approach allows for immediate improvements to better address user needs before finalizing the solution. In the Deliver phase, testing will be necessary to identify and address any remaining issues, ensuring that the final solution demonstrates the intended purpose and serves as a foundation for future improvements.

## 3.4 Data Analysis

The interview data collected over two distinct rounds, first during the Discover phase (See Appendix A) and later during the Deliver phase (See Appendix C), were analysed using a structured and methodologically grounded approach. The initial round, conducted online captures participants' preliminary thoughts, experiences, and practices related to reading. This data was then analysed thematically, following the approach outlined by Muratovski (2016), as well as Braun and Clarke (2006) method

of theoretical thematic analysis. This involves identifying and interpreting patterns (themes) that reflect key aspects of reading behavior and preferences in relation to the central research question. The analysis was explicitly analyst-driven, focusing on predefined areas such as reading habits, preferences, motivations, social influences, and barriers to reading. Interview transcripts were read multiple times to gain a holistic understanding, then systematically coded, with codes grouped into themes based on similarities and differences across participant responses. This allows for rich, focused insights that inform the early stages of the design process.

The second round, conducted in person during the Deliver phase, focuses on evaluating the prototype. Data from this phase consisted primarily of observational notes and short discussions with participants. These were analyzed using a qualitative content analysis approach described by Graneheim and Lundman (2004), emphasizing both manifest and latent content. Observational notes from each session will be read repeatedly to develop a comprehensive understanding of user behavior. The data were then divided into meaning units, condensed and interpreted considering the design criteria, such as usability, distraction levels, clarity of purpose, and the degree to which the prototype supports the intended reading behavior. These condensed units abstracted reflect both what was observed and the potential implications for refining the design.

Through this process, gathering insights, analysing them in depth, and applying the findings, the likelihood that the final design will be grounded in the real needs and experiences of the target audience increases, enhancing the potential for the solution to support teenage reading habits.

### **3.5 Use of Generative AI tools**

Generative AI tools, such as ChatGPT, were used throughout the project as a creative and critical sparring partner. It was used to challenge ideas, refine concepts, and provoke deeper reflection. For example, prompts were posed to the AI to question the design decisions, or flag potential limitations, allowing for self-assessment and iteration. Importantly, all conceptual work, study design, data analysis, and critical reflections presented in this thesis are solely the result of the author's own intellectual effort.

## **4 Design process**

The Design Process section of this thesis provides a comprehensive overview of the project's development, detailing the steps taken from initial research to final prototype. Each phase will be presented in its own dedicated subsection, outlining the activities conducted, the insights gathered, and the

decisions made along the way. Guided by the Revamped Double Diamond model (Figure 1), this section follows the progression through the Discover, Define, Develop, and Deliver phases, emphasizing how insights gathered from interviews, academic literature, and iterative testing shaped the design direction. It outlines the ideation stages, the evolution of concepts, and the rationale behind key design decisions. Special attention is given to the prototypes developed throughout the process, including their features, the feedback received, and how that feedback informed further refinements. This section not only documents the design journey but also demonstrates how user-centered thinking and research-driven exploration contributed to crafting solutions tailored to teenage reading habits.

Additionally, this section will reflect on any adaptations made to the original design process to better suit the context of the project, ensuring that the chosen methodology remained flexible and responsive to emerging insights.

## 4.1 Discover

The Discover phase marked the starting point of the design process, focused on understanding the context of the brief and investigating whether the decline in teenage reading habits is a real and relevant issue. The first step was to “rip the brief,” (Figure 2) a process that involved deconstructing and critically analyzing the assignment in order to identify its broader scope.

This process involved analyzing the reading environment and identifying potential challenges within it. During this stage, the focus was primarily on physical reading techniques and the issues that might arise from them. Four key categories of problems were identified:

1. **Behavioral issues** – such as lack of motivation, difficulty forming habits, procrastination, and limited attention span, all of which can reduce engagement with physical reading.
2. **Cultural factors** – including the influence of family and friends who do not read, leading to a lack of reading among users.
3. **Accessibility challenges** – such as literacy barriers, neurodivergence (e.g., ADHD), and visual difficulties (color perception, typography) that make reading harder.
4. **Technological problems** – for instance, algorithms that fail to recommend appropriate or diverse books, limiting discovery; differences between physical and digital books; and opportunities to improve the reading experience through multimodal environments, like incorporating sound or enhancing the physical setting.

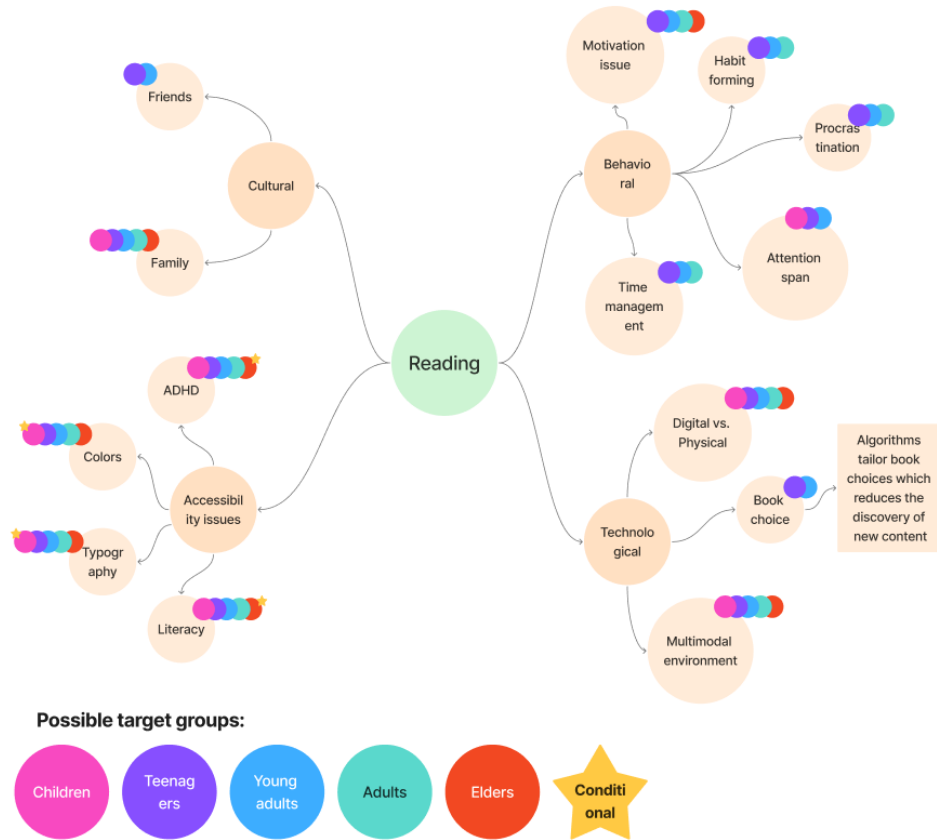


Figure 2: A visual breakdown of the project’s possible directions, categorized into four areas: Behavioral, Accessibility, Cultural, and Technological. Each category explores challenges and identifies potential target groups relevant to that direction.

Although these categories were developed with teenagers in mind, it was also considered how these issues might affect other age groups. This broader perspective helped assess whether shifting the project’s focus to a different demographic might be more beneficial.

Ultimately, the project focused primarily on the behavioral category, as fostering consistent reading habits requires addressing how teenagers engage with and manage their reading routines. By focusing on behaviour, the project targets practical actions and patterns that can lead to long-term habit formation, which is important for making reading a sustainable part of their daily lives. However, as will be shown later, interviews and further research also touched upon aspects of the cultural and multimodal environment categories. This initial exploration led to a focus on teenage reading practices and the need to determine whether there is a measurable decline in this regard and possible reasons for it.

To validate the existence of the problem, a review of academic literature was carried out. This primary research centered on examining scholarly articles that investigate teenage literacy trends, their engagement with reading, and the influence of digital distractions such as social media. These findings helped confirm that the decline in reading is both significant

and widespread. Additionally, this research helped identify some of the core factors contributing to this decline, as well as solutions and strategies that have been previously explored. This review is discussed in more detail in the Background section of the thesis.

In parallel with the literature review, qualitative interviews were conducted as a form of secondary research. These aimed to explore the lived experiences of teenagers in relation to reading. (See Appendix A) Four semi-structured interviews were held with Romanian teenagers aged 12 to 15 who currently reside in other European countries. The participants were:

1. 12-year-old Romanian girl who moved to France one year ago
2. 13-year-old Romanian boy who moved to Germany three years ago
3. 14-year-old Romanian boy who moved to Belgium one year ago
4. 15-year-old Romanian girl who moved to Germany two years ago

The interviews provided personal insights into the participants' habits, attitudes, and emotional connections (or lack thereof) with reading, as well as the role of language and cultural adaptation in shaping these experiences. Together, the academic literature and user interviews offered a foundation of understanding, helping to guide the potential the direction of the project in the next phase. As mentioned earlier, these teenagers were part of my personal network, which helped create a more relaxed atmosphere and, hopefully, encouraged more honest responses.

The participants opinions, needs, and lived experiences revealed both the complexity of the problem and the importance of designing with empathy. This user-focused perspective guided the choice of methods, favouring iterative and qualitative approaches that prioritize user input and ensure that the resulting solutions are relevant, engaging, and grounded in real-world contexts.

## 4.2 Define

The Define phase focused on analyzing the insights gathered from the interviews to better understand the challenges faced by teenagers regarding reading. By carefully reviewing the interview data, key themes, patterns, and pain points were identified, allowing for the definition of the project's scope and the identification of potential opportunity areas. This analysis helped narrow the focus of the project, as the initial scope was quite broad, and the timeline for the project limited the ability to explore every possible angle. The purpose of this phase was to clearly define the design opportunity, which would serve as a guiding principle throughout the rest of the project. A critical part of this phase was the formulation of the "How Might We" question, a central design opportunity question aimed at framing the challenge and setting the direction for the design process. By honing in on specific, actionable areas of interest, this phase helped shape the project's focus, ensuring that the design efforts would be both manageable and impactful.

### 4.2.1 Insights from User Interviews

The qualitative interviews offered a perspective into the reading behaviors and motivations of the selected teenage participants. Despite their different contexts, living in various European countries, several common themes emerged that helped explain the decline in reading among teenagers.

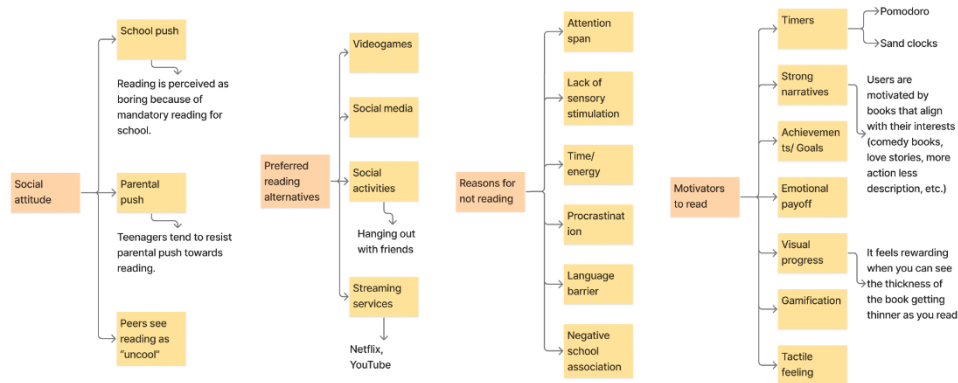


Figure 3: Summary of insights from the interviews organized in four categories: (1) social attitude, (2) preferred reading alternatives, (3) reasons for not reading, (4) motivators

Building upon the foundation discovered during “ripping the brief” and the categories that emerged from that, the interview framework was developed to delve deeper into the user perspective. The interviews focused on four main categories of insights, each reflecting key themes identified during the brief analysis: social attitudes, to explore whether social context might contribute to a decline in reading; preferred activities that replace reading; reasons for not reading beyond competing activities, such as time constraints, lack of motivation, or external factors; and motivations for reading, if any, to identify potential directions for developing a design solution. This progression ensured that user insights were directly connected to the challenges uncovered during the initial deconstruction of the brief.

Figure 3 summarizes these insights, with some accompanied by additional explanations where brief summaries were insufficient to fully capture their meaning. The insights do not reflect the frequency of teenagers reading physical books, as the participants were specifically selected for having minimal to no reading habits outside of school.

#### *Reading as Obligation, Not Leisure*

None of the four participants viewed reading as a pleasurable activity.

All four participants reported reading mainly when required by school, with little to no voluntary reading outside of that context. Traditional books were often described as boring, overly descriptive, or irrelevant to their interests. I interpret this as a utilitarian perspective on reading, one that links it primarily to academic performance, which significantly weakens intrinsic motivation and the potential for genuine enjoyment.

### *Competing High-Stimulation Activities*

All four participants identified digital and social activities, such as gaming, TikTok, YouTube, and chatting with friends, as their preferred forms of engagement. These activities are fast-paced, interactive, and sensory-rich, contrasting sharply with the slower, introspective nature of reading. I interpret this to mean that, for many, the lack of visual and auditory stimulation in books made them feel flat or unrewarding in comparison.

### *Attention Span and Time Constraints*

Three participants (#2, #3, #4) mentioned time and energy as barriers, especially due to school, homework, and extracurricular demands. There was also a notable struggle with attention span; participants found it hard to engage with books that didn't hook them within the first few pages. For some, the cognitive load of reading, especially in a second language, is further a complicated engagement.

### *Social Attitudes and Identity*

Reading was often described as “uncool” or irrelevant among peers. The activity was framed as a solitary or academic task, disconnected from their social world. However, a few exceptions emerged. Participants #3 and #4 mentioned that when reading was socially reinforced, through discussions with friends, it became more appealing. In one case, participant #4 described peer conversations about books and films as motivating factors that encouraged her to read more.

### *Content Preferences and Format Flexibility*

Where there was interest in reading, it often centered on stories with emotional resonance, humor, drama, or strong characters. Formats such as audiobooks, graphic novels, and even fanfiction platforms like Wattpad were cited as more accessible and enjoyable alternatives to traditional novels. Three participants (#1, #3, #4) also expressed an appreciation for physical books, valuing the tactile experience and sense of progress they offered.

### *Language and Cultural Adjustment*

For the participants considering they had moved abroad, language posed an added challenge. Reading in a second language, especially for school, made comprehension slower and less enjoyable. Romanian-language books were easier to process but were not always appealing due to outdated themes or lack of relevance to their current lives.

### *Procrastination as a Barrier*

Another recurring insight that emerged during the discussions was the issue of procrastination. Three of the participants (#1, #2, #4) expressed that, despite recognizing the importance of reading and having the desire to engage in it, they struggled to find the motivation to begin. The act of starting often felt overwhelming, which led them to postpone it repeatedly.

These interviews revealed that the issue is not simply about disinterest in reading, but a complex interplay of social norms, media habits, school pressure, cognitive overload, and cultural framing. These insights, taken together with the academic literature, helped shape the design direction of the project, focusing on how reading can be reintroduced as a meaningful, engaging, and socially relevant activity for modern teenagers.

#### 4.2.2 Design opportunity

Drawing from the insights gathered during this phase, it became evident that simply encouraging teenagers to read more is not enough. The core challenge lies in reshaping how reading is perceived, transforming it from a school-bound obligation into an enjoyable, socially relevant, and emotionally resonant experience. With this in mind, the design opportunity was defined through the formulation of a central “How Might We” question:

*How might we make reading physical books more engaging for teenagers through a smart, tech-enhanced experience that supports focus and builds positive habits?*

This question reflects the need to address both the internal and external barriers to reading. It builds upon the recognition that teenagers are more likely to engage in stories when they feel emotionally connected, socially supported, and stimulated in ways that align with their media habits. By grounding the design opportunity in the real motivations, frustrations, and contexts of the users, this question provides a clear, user-centered direction for the project, ensuring that all future design decisions remain anchored in the needs and realities of its intended audience. This design opportunity does not primarily aim to tackle the challenge of motivating teenagers to start reading, though that remains a significant issue. Instead, it focuses on supporting the development of consistent reading habits once reading has begun. It also considers the potential to ease the mental burden associated with getting started, as identified in earlier interviews.

### 4.3 Develop

The Develop phase focused on ideating and prototyping a solution based on the insights and design opportunity established in the previous phase. Building on the “How Might We” question and the previous gathered insights, this stage explored how tangible interaction, and subtle behavioral nudges could reintroduce reading as a valuable and enjoyable habit.

These initial concepts emerged from a brainstorming phase aimed at synthesizing insights from the interviews and identifying potential directions for the design solution. By analyzing recurring themes, such as time constraints, lack of motivation, and the overwhelming nature of long reading sessions, it uncovered a potential in how supporting time management could offer a practical and motivating entry point. As a result, early ideas focused

on tools that structure reading sessions in manageable, approachable intervals, helping users engage with reading without feeling pressured or overwhelmed also considering the influence of peer presence suggested by the body doubling practice (Eagle, Baltaxe-Admony, & Ringland, 2024).

Among the most promising directions was the Pomodoro technique, a well-documented productivity method that breaks work into timed intervals, usually 25 minutes of focused activity followed by short breaks (Ahmed et al., 2014). Almalki et al. (2020) highlights its effectiveness in improving focus and reducing procrastination, particularly for younger audiences with fluctuating attention spans.

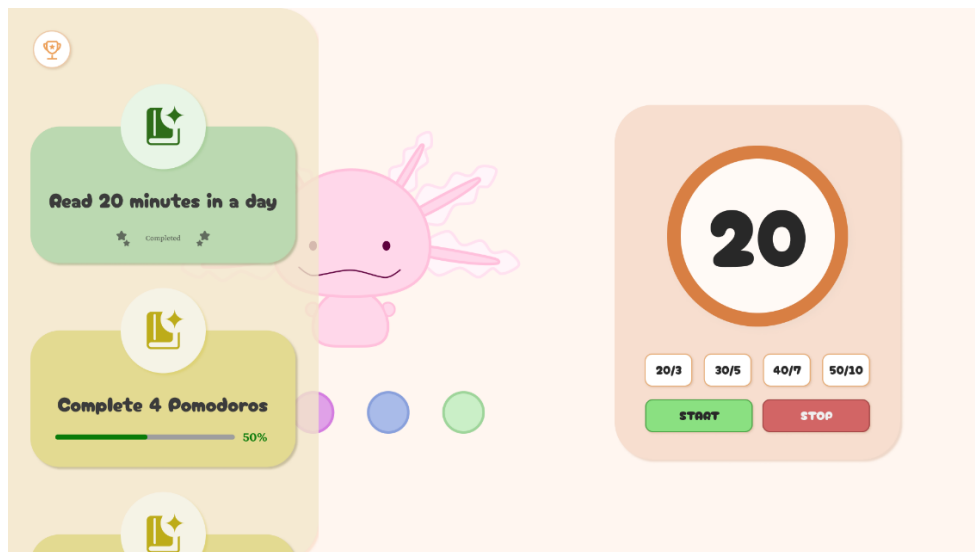


Figure 4: Screenshot of the first prototype

During the early ideation process, a second layer of motivation was considered through a goal and achievement system. This aimed to create a sense of progress and satisfaction by rewarding the reader with small milestones reached during reading sessions. The first conceptual prototype took the form of a virtual companion (Figure 4), designed to replicate the effects of body doubling, a motivational technique where simply having another person present and engaged in a task can help individuals stay focused (Eagle, Baltaxe-Admony, & Ringland, 2024). The idea of a virtual companion emerged from exploring the social aspect of the background research, particularly the role social interaction can play in encouraging reading habits among teenagers. The prototype took the form of an animal companion designed to evoke the feeling of a friend accompanying the reader during their reading experience.

The virtual companion also featured four different colour palettes. While primarily aesthetic, this element was designed to give teenagers a sense of personalization, subtly incorporating a light touch of gamification through visual customization. This prototype incorporated a Pomodoro timer and a digital achievements tracker to support sustained attention and a sense of

accomplishment. While this prototype does not strictly follow the traditional Pomodoro structure of 25-minute work sessions followed by 5-minute breaks, it is built on the same core idea: breaking reading into smaller, manageable intervals with regular breaks. However, it offers a more flexible and customizable approach, providing four different session options: 20 minutes with a 3-minute break, 30 with 5, 40 with 7, and 50 with 10. This allows users to choose the session length that best suits their needs, giving them control over how much time they want to dedicate to reading. The user would manually start a reading session, and the companion would signal breaks with sound notifications.

However, feedback from interviews in the Discover phase quickly revealed key challenges: most participants found auditory cues disruptive while reading, and the screen-based interaction contradicted the project's core aim, to reduce screen time and refocus on physical reading experiences.

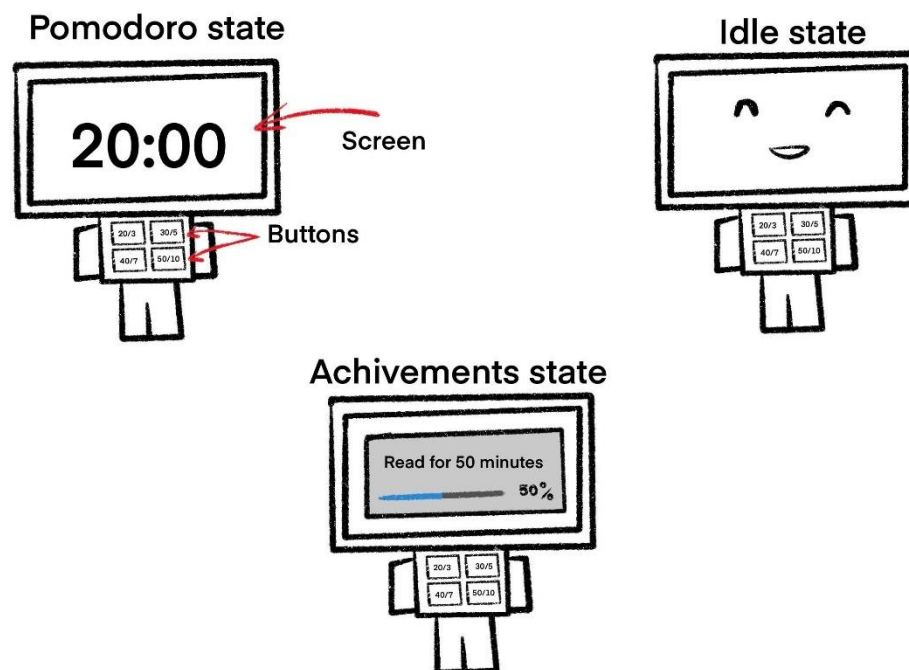


Figure 5: Sketch of the physical reading companion concept, showing its three states: Pomodoro state, Achievements state and Idle state

As a result, the concept evolved into a physical reading companion, envisioned as a small, desk-friendly robot that would sit next to the reader (Figure 5). The decision to develop a physical prototype aligned with insights that emerged during the interviews in the Discover phase, where participants expressed an appreciation for physical books, valuing their tactile experience and the sense of progress they provided. The social aspect was preserved in this prototype through the companion's friendly, animated behaviour in the Idle state, aiming to simulate the presence of a supportive peer during reading. This version retained the embedded Pomodoro timer and achievement tracking but posed new challenges around how to display



This phase marked a departure from the social aspect of the companion. While the social element was recognized as important, incorporating a companion into the design of the bookmark and reading lamp introduced challenges related to increased friction. Adding a companion at this stage could have introduced extra steps into the reading routine, potentially compromising the simplicity and seamless integration of the prototype with users' existing setups. The enhanced bookmark is then more an item on its own, but that does not rule out that it can be part of a social initiative.

#### 4.4 Deliver

The Deliver phase marked the final stage of the project, focusing on implementing, testing, evaluating, and refining the prototype based on user interaction and feedback. After iterating through design and development stages, the goal during this phase was to assess how the proposed solution performed in real-life reading scenarios and to gather valuable insights into its practicality, usability, and overall impact on the reading experience. By observing teenagers using the prototype and conducting follow-up interviews, this phase aimed to validate the design decisions made throughout the process and identify any remaining areas for improvement. The findings from this stage helped shape a more grounded understanding of how the solution fits into users' daily routines and how it could be further optimized for future iterations.

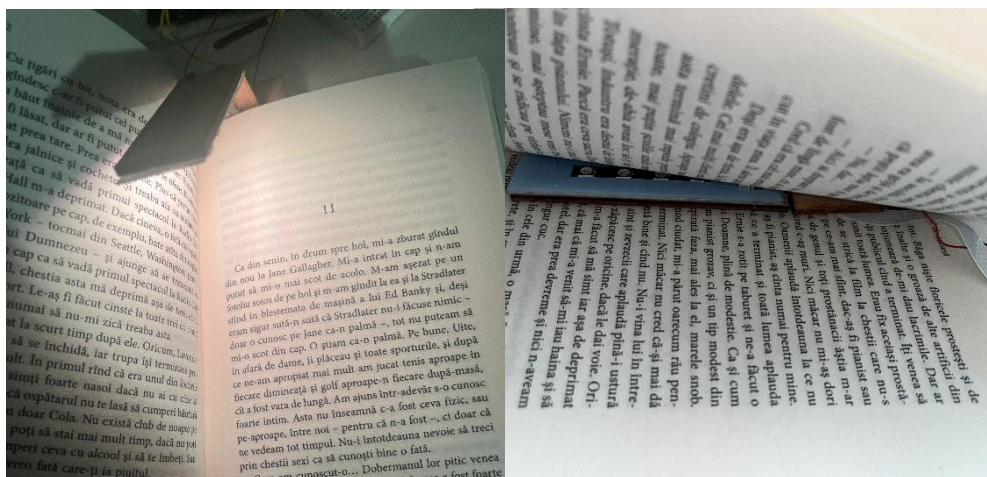


Figure 7: Picture illustrating the core interaction: opening the book starts the Pomodoro timer (left), while closing the book stops the timer and the light, ending the session (right)

To adapt the Pomodoro timer to a reading context without resorting to screens or notifications, the idea of a light-based Pomodoro timer was developed (Figure 7).<sup>1</sup> This approach offers visual feedback that aims to encourage sustained focus while aligning with teens' preference for ambient,

<sup>1</sup> A video demonstration can be found on this link: <https://youtu.be/rFx9rNIEEQo>.

non-disruptive tools. The light slowly transitions into colour over the duration of a reading phase, providing a subtle visual cue that time is passing. During reading sessions, the colour gradually shifts from yellow to dark pink (Figure 8), while break periods transition from dark blue to light yellow. These colour schemes were intentionally chosen to clearly differentiate between the two phases, making it easy for users to recognize not only when a phase has changed but also to distinguish the beginning from the end of each interval. Unlike traditional timers that rely on sound or precise timekeeping, the gradual color change cannot be tracked minute by minute but becomes observable as a process, inviting the user to enter a flow state rather than remain preoccupied with progress.

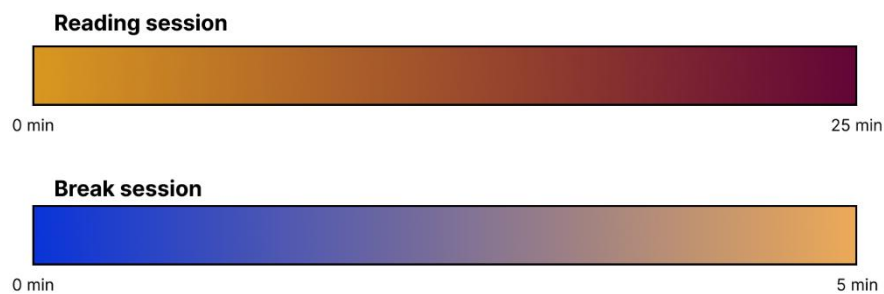


Figure 8: Visual representation of the colour gradient for each phase

Another critical consideration was how the device would fit into teens' existing reading habits, to reduce resistance and avoid adding additional steps to their routines. By embedding the Pomodoro mechanism within an object that already belongs in their environment, the prototype aligns with their behavior rather than attempting to change it.

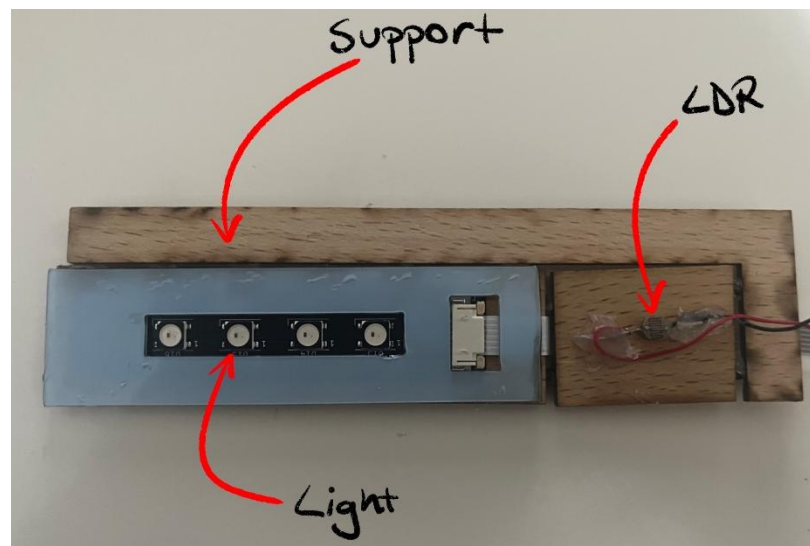


Figure 9: Annotated sketch of prototype's build

An issue previously discovered was the unnecessary friction, specifically the need to manually start the timer, to overcome this an LDR (Light Dependent Resistor) sensor (Figure 9) was integrated into the design. This sensor functions as a trigger by detecting when the book is opened. Since the bookmark typically rests between closed pages, the sensor remains in a dark environment when not in use. Once the book is opened and reading begins, the increase in light is detected by the LDR, automatically activating the Pomodoro timer to signal the start of a reading session. However, not all sources of friction could be eliminated. When the book is opened, the user still needs to manually bend the bookmark to transform it into a reading lamp. This step could be streamlined in a future version by incorporating small motors or a spring that automatically adjust the form when a reading session begins. Another source of friction that, for now, cannot be eliminated is the battery, which is represented by the wires in the figure. Since the bookmark needs a power source for the light to function, this remains a necessary inconvenience.

This prototype incorporates subtle nudging elements designed to support teenagers' reading habits without being intrusive or overwhelming. Unlike loud reminders or notifications, the gradual colour changes in the reading lamp gently signal when it's time to take a break or refocus, encouraging adherence to structured reading intervals in a calm and natural way. By automatically starting the timer as soon as the book is opened, the system removes extra steps or decisions that might discourage teens from beginning a reading session, softly guiding them toward engagement. Furthermore, embedding the timer and cues within familiar objects like a bookmark and reading lamp makes the nudges feel like a seamless part of the reading experience, an unobtrusive support rather than a disruptive interruption.

This idea also draws inspiration from the concept of body doubling, the idea that simply having another presence can help sustain focus. In this case, the device itself acts as a passive companion with its own autonomous behavior, such as starting the timer when the book is opened and signaling breaks through subtle light changes. This independent activity creates a quiet sense of shared rhythm, possibly offering teens the feeling that they're not reading entirely alone, which can support sustained engagement without demanding active interaction.

Testing was an important component of this phase. Since the participants in the first round of interviews were Romanian expats living in various European countries, none of whom resided in Sweden, a new recruitment process was necessary for the testing phase, as the prototype required in-person interaction that couldn't be replicated through online means. Five participants were found through an NGO that supports Romanian students and communities in Sweden. To maintain consistency with the initial research, each potential participant engaged in a scripted,

informal conversation modeled after the first-round interview structure (See Appendix B). These conversations were analyzed to ensure the selected participants had similar experiences and perspectives, reducing variability across the two groups. The participants were all Romanians living in Sweden as follows:

1. 12-year-old boy who moved two years ago
2. 13-year-old boy who moved one year ago
3. 13-year-old girl who moved three and a half years ago
4. 14-year-old boy who moved two years ago
5. 14-year-old girl who moved half a year ago

The study was carried out in a semi-formal setting, where participants read alone while being discreetly observed from the same room, ensuring minimal interference to see how they naturally interacted with the device in their usual reading context. After the testing session, a brief interview was conducted to ask follow-up questions based on the observations made. The goal was to gain deeper insight into certain user behaviours and to evaluate the prototype's functionality and practicality from the participants' perspective.

The testing was structured around four reading cycles, following the 25-minute reading and 5-minute break Pomodoro model. Participants were asked to read uninterrupted for 25 minutes while supported by the device. However, they were informed that they had full autonomy throughout the process, they could stop reading at any point, skip or shorten breaks, or even choose not to complete the full 25 minutes if they didn't feel like it. Each participant was asked to bring a physical book of their choice, except for comic books, which were excluded from the project's scope.

During the sessions, participants were left undisturbed, even during breaks, to observe whether their chosen break-time activities would influence their responsiveness to the timer, for instance, whether they would miss the signal to resume reading. Although no interaction was established during the reading sessions, participants were observed from a distance throughout the entire process to discreetly monitor their behaviour, reactions to the device, and interaction patterns. This aspect was particularly important for evaluating the prototype's subtle behavioral influence and the usability of its physical cues. At the end of the testing session, a short follow-up interview was conducted (See Appendix C). This interview aimed to gather feedback on the physical and functional aspects of the prototype, including questions based on the observation done such as whether participants missed the break signal and why, whether they took breaks earlier than prompted, and how they experienced the behavior of the light: was it distracting, strong enough, or noticeable during transitions? The goal was to assess both the effectiveness of the structured approach and the clarity of the device's cues.

While a few participants paused during the designated break times, others chose to continue reading, stating that they were too engaged in the story to stop. Although time constraints limited the testing to single sessions per participant, the prototype was evaluated in various lighting conditions to assess usability, with follow-up questions to confirm that ambient light changes were perceptible and enhanced the overall experience, it was revealed that low-light conditions facilitated the colour-changing behaviour of the lamp.

However, differences in responsiveness emerged. One participant (#4) missed two of the four reading session signals during the break. When asked why, he explained that the lamp was outside his immediate visual field, so he didn't notice the color change unless he intentionally checked. He suspected the break phase had passed without his awareness and suggested that an added sound cue might help. Another participant (#3), although she didn't miss any breaks, shared that she felt a subtle pressure to remain near the book and device so she wouldn't miss the restart signal. Interestingly, none of the participants chose to end their reading sessions early. Four of them reported that time passed surprisingly quickly. Two participants even skipped breaks entirely due to being immersed in their reading: one (#5) continued until the next scheduled break, totaling a 55-minute session, while another (#2) read through the third break because he was a few pages away to finishing a chapter. He eventually stopped a few minutes into the final session after completing it, stating he didn't feel like beginning a new chapter.

Through iterative development, the prototype improved. Although each participant was only available for a single testing session, small improvements were made on the spot based on immediate feedback, allowing each participant to experience updated versions of the prototype. However, only the first version of the prototype was tested over the full four reading sessions, while the subsequent change, being primarily visual, was tested in just one reading session each to evaluate its effectiveness. The change that couldn't be feasibly implemented on the spot was instead presented as hypothetical idea, and participants were asked for their opinions. A key issue that emerged during the first testing session by participant #4 was the lack of clear feedback marking the transition between reading and break phases. To address this, a blinking effect was added to the final five seconds of each phase, providing a subtle but noticeable cue that a switch was about to occur. This feature was implemented during the same session, and participant #4 noted that it offered some improvement, though he still advocated for an accompanying sound cue.

Subsequent participants tested the prototype both with and without the blinking behavior. Participant #3, who had previously expressed anxiety about missing the phase change, remarked that the blinking cue reduced this concern, as she could detect it even while using her phone during the break. The participants were also asked for their opinions on introducing a sound

element. Three expressed skepticisms (#1, #3, #5), stating that sound could be distracting if they chose to skip a break and continue reading. Participant #2, however, was open to the idea, noting that he could likely ignore certain sounds during focused tasks. Despite this feedback, sound cues were not implemented at this stage due to technical limitations and resource constraints.

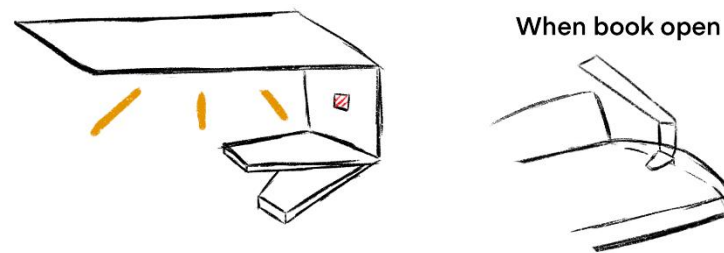


Figure 10: Sketch showcasing the possible clamp solution

One of the main physical drawbacks of the prototype was its rigidity and thickness. Due to material constraints, the current version, while functional, is still too bulky and causes the book to bend when closed. For a final design, a slimmer and more flexible structure would be essential. Another issue arose when the reader progressed to the final quarter of the book and the remaining pages were not thick enough to support the weight of the lamp, causing it to slip or fall. During testing, this was temporarily resolved by repositioning the lamp toward the thicker portion of the book, but this required unnecessary adjustments. A potential solution for future versions would be to integrate a simple clamp mechanism (Figure 10) that can be attached to the book's back cover, providing stable support without the need for repositioning. The clamp could remain in place throughout the entire reading period, whether the book is open or closed, while the bookmark component could be used to track reading progress. Another physical issue identified during testing was related to the power source. The prototype required a power bank connected via cables, but in some cases, the cables were too short to comfortably allow users to hold the book while reading. This posed a challenge for participants who preferred holding the book in their hands rather than placing it on the surface. While this was temporarily managed by having users read with the book placed on a table, the solution was not ideal and received mixed feedback, with several users noting that the position felt uncomfortable. Future iterations would benefit from a more compact, integrated power source.

The result of this phase is points towards an intuitive tool that encourages focus, supports time-structured reading, and fits seamlessly into teens' existing contexts. The prototype doesn't demand behavior change, but

rather supports it, blending form and function in a way that respects users' needs and preferences.

## 4.5 Summary

The testing and feedback gathered during the Delivery phase provided valuable insights into the performance, practicality, and potential impact of the prototype. Overall, participants responded positively, particularly noting how the device supported their ability to remain focused during reading sessions.

- Visual feedback of user focus: Participants responded positively to the ambient light signals, finding the color transitions subtle, non-disruptive, and even cozy. The lighting enhanced the reading atmosphere without causing distraction, supporting the choice of visual over auditory cues.
- Prior experience with Pomodoro: Users familiar with Pomodoro appreciated the prototype's silent design and its clear purpose. Those unfamiliar with it didn't immediately link it to productivity but still valued its ability to break reading into manageable intervals.
- Motivation and habit formation: The prototype didn't directly motivate participants to start reading but framing it as "just 25 minutes" made it feel more approachable. Once they began, some continued beyond the timer, highlighting Pomodoro's potential to reduce resistance and build reading habits.
- Engagement over structure: Some participants skipped breaks because they were too engaged in the content, showing that while time-blocking supports reading, lasting focus depends on intrinsic interest, not external structure.
- Effectiveness in different lighting conditions: The prototype worked best in low-light settings, where its cues were more visible and doubled as a reading lamp. Users preferred it for evening sessions, noting it helped reduce screen time before bed.
- Physical design and book compatibility: The prototype suited medium-sized books and larger but was less effective with smaller formats, making page-turning awkward.
- Initial excitement and long-term use: Two participants noted that initial excitement may have boosted their engagement with the prototype, but its long-term impact on reading habits remains uncertain without extended testing.

## 5 Discussion

This discussion critically reflects on the outcomes of the project, addressing its limitations in scope and participant diversity while situating the findings within the context of existing research. Although the results reveal promising potential for structured, non-intrusive design tools to support teenage reading habits, it is important to acknowledge the study's constraints. To provide a clear and focused analysis, discussion is organized around the central research questions. This structure allows for a detailed evaluation of the design interventions tested, the barriers teenagers face, the integration of supportive tools into their reading routines, and the effectiveness of colour-based feedback. Throughout, the insights gained are compared with relevant literature, highlighting both the strengths of the prototype and areas where further refinement is needed.

### 5.1 Findings related to research questions

1. *What are some design interventions that can encourage long-form reading habits among teenagers?*

This project demonstrates that design interventions centred on structure and subtle support can positively influence teenagers' reading habits. The Pomodoro-enhanced bookmark, which segments reading into manageable, timed sessions accompanied by calm visual cues, aligns closely with existing research on time management and cognitive load reduction (Ahmed et al., 2014; Biwer et al., 2023). One of the strongest parallels with previous studies is the effectiveness of structured approaches like the Pomodoro Technique. Prior literature has emphasized that time-blocking strategies can help reduce procrastination and make long-form tasks feel more approachable. This was confirmed by participants in the study, particularly those already familiar with Pomodoro, who appreciated the sense of structure the prototype provided. Even those new to the method found the "just 25 minutes" framing helpful in lowering the barrier to beginning a reading session, reflecting how time-limited reading can re-engage adolescents in a digitally saturated environment.

However, while structure can support the initiation of reading, the findings also highlight its limitations. Several participants chose to ignore scheduled breaks because they were absorbed in the content, indicating that sustained engagement ultimately depends on intrinsic motivation and the appeal of the reading material itself. This nuance reinforces research emphasizing that external aid can support focus, but cannot substitute for genuine interest (Mansor et al., 2013; Sackris, 2020). Therefore, although the prototype facilitates the start and flow of reading, it should be complemented by strategies that spark and sustain interest in content.

Another insight relates to the social aspect of reading motivation. Literature has shown that peer influence significantly affects teenagers' reading choices, with young people often more inclined to read what their friends discuss or recommend (Mansor et al., 2013). While this project initially explored socially integrated features, such as a digital reading companion or peer-linked feedback, these elements were later omitted to preserve simplicity and avoid additional steps that might deter use. Yet, the potential of social incentives remains highly relevant. Rather than abandoning this element, it should be reconsidered as part of a broader initiative.

The prototype's form as a common object, a bookmark and reading lamp, positions it well to serve not only as an individual tool but also as part of wider social initiatives. Its standalone and low-friction design requires no setup or personalization, making it easy to lend, share, or integrate into group-based programs across schools, libraries, or community centres. This communal adaptability increases its reach and potential impact. Far from needing to solve every challenge alone, the bookmark can act as a modular element within a collective effort to promote long-form reading. Its strength lies in this flexibility by supporting focused reading while potentially complementing peer support, educational activities, and other motivational strategies.

### *1.1 What are some main barriers teenagers face when engaging in long-form reading?*

Participants identified several barriers to long-form reading that closely mirror findings in the literature. Common challenges included feeling overwhelmed by the length and perceived effort of reading tasks, frequent distractions from digital devices, and a lack of intrinsic motivation or compelling content. These difficulties are further compounded by the influence of social media platforms such as TikTok and Instagram, where fast-paced, visually stimulating content conditions users to seek instant gratification (Asif & Kazi, 2024; Galadima & Bright, 2020; Haliti-Sylaj & Sadiku, 2024). The dopamine-driven feedback loops on these platforms (Schultz, 1998; Volkow et al., 2012) have been linked to reduced attention spans, making it increasingly difficult for teenagers to engage in sustained, focused activities like reading.

While the prototype addressed some of these barriers by using structured, time-limited sessions to reduce the sense of overwhelm, it was less effective in overcoming motivational hurdles. Participants still struggled with the initial impulse to begin reading, underscoring the importance of content relevance and intrinsic engagement. In addition, practical limitations in the physical design, such as the prototype's incompatibility with smaller book formats, presented usability issues that could impact regular use. The narrow participant group, comprised of Romanian teenagers living abroad, may also have influenced responses due to specific cultural or contextual

factors. These insights suggest that although structural interventions are helpful in sustaining focus, fostering reading habits in teenagers will likely require a more holistic approach that incorporates motivational, social, and environmental strategies to counter the dominant influence of fast digital media.

*1.2 What are some additional tools or practices that can be integrated into the reading setup of teenagers without adding unnecessary steps?*

The prototype demonstrates how subtle design interventions, like automatic timer activation and ambient visual cues, can support teenagers' reading habits by embedding structure directly into familiar tools such as a bookmark and reading lamp. By removing extra decision points and operating autonomously, the prototype reduces friction and gently nudges teens into focused reading sessions without intrusive disruptions. This approach aligns with research on behavioural nudging, which shows that subtle cues can make reading feel more approachable and salient, especially when paired with intrinsic motivation (van der Sande et al., 2023). Importantly, the prototype also draws from the concept of body doubling, the idea that the presence of another entity, even a passive one, can help sustain attention. With its autonomous behaviour, such as initiating sessions when a book is opened and softly signalling breaks, the device acts as a quiet companion. This subtle, shared rhythm can make the act of reading feel less solitary, offering teens a sense of presence and support without demanding active interaction. While nudging alone may not be enough to initiate reading among disengaged teens, this low-friction, supportive design offers an effective way to sustain focus and integrate reading into everyday routines as part of a broader, multi-faceted strategy.

*1.3 What types of feedback can be most effective and unintrusive while still maintaining reading flow for teenagers?*

The study found that subtle, ambient visual feedback, particularly the gradual colour transitions of the reading lamp, was more preferred by participants compared to auditory reminders. This preference was reinforced during the Discover phase, where teenagers expressed a desire for a calm, non-disruptive reading environment. These findings align with existing research highlighting how constant auditory notifications contribute to fragmented attention spans among teens (Whiting & Murdock, 2021). By contrast, the prototype's visual cues supported a more mindful atmosphere, allowing for sustained focus without breaking immersion, an intentional counterbalance to the fast, dopamine-driven feedback loops typical of social media platforms (Schultz, 1998; Twenge, Martin, & Spitzberg, 2019). However, while these cues are effective in maintaining attention once reading begins, they are not sufficient to motivate teens to start reading, particularly those with low initial interest. As such, visual nudges could be most powerful when integrated into a broader, multi-layered strategy for engagement.

In sum, the findings of this project show partial alignment with existing literature: while structured time-management techniques and non-intrusive visual cues were effective in helping teenagers sustain focus and reduce the friction of starting reading sessions, the prototype fell short in directly motivating reading initiation. This reflects a broader challenge in addressing the multifaceted barriers teens face, such as low intrinsic motivation, digital distractions, and lack of socially or educationally engaging content. The absence of integrated social or academic structures, both highlighted in the literature as key drivers of reading engagement, further limited the prototype's reach. Additionally, the narrow participant pool and certain physical design limitations could raise questions about generalizability and real-world adaptability. These insights suggest that the prototype's primary value lies not in solving every aspect of reading engagement, but in its modular, low-friction approach that supports sustained attention. Rather than acting as a standalone intervention, it should be seen as one element within a broader motivational ecosystem.

## 6 Limitations

Despite its results, this project is constrained by several notable limitations that impact the generalizability and long-term applicability of its findings. First, the prototype was tested in a short-term setting, offering only a brief glimpse into its potential to influence reading habits. Given that reading motivation and habit formation are gradual processes that unfold over extended periods (Lally et al., 2010), it remains uncertain whether the observed initial engagement would persist beyond the novelty phase. Without longitudinal testing, it is difficult to evaluate the prototype's ability to foster sustainable reading behaviours over time.

The participant sample also presents limitations. The study involved a small group of Romanian teenagers living abroad in various European countries. While this demographic provided useful insights, their experiences may not reflect those of a broader teenage population. Cultural influences, migration-related stressors, and unique educational or linguistic contexts could have shaped both their reading preferences and their responses to the prototype. As such, the findings may not be fully representative or applicable to other youth populations.

Furthermore, although efforts were made to create natural reading scenarios, the prototype was still evaluated in a semi-controlled environment. This may have influenced how participants interacted with the tool and how closely their behaviours reflected real-world use. Expanding future testing to include everyday contexts, such as home, school, or public libraries, would

offer a more accurate understanding of how the prototype integrates into teens' daily routines.

Finally, limitations in the physical design of the prototype also emerged. While digital tools and formats have been suggested as effective in re-engaging reluctant readers (Rutherford et al., 2017), this project intentionally focused on improving the experience of reading physical books. However, the current version of the device faced challenges with smaller formats like pocketbooks, highlighting a need for greater adaptability in its physical design. This restricts its versatility and usability for a broader range of readers. To enhance its real-world effectiveness, the prototype should undergo further design iterations to improve its adaptability and compatibility with diverse book sizes and formats.

Together, these limitations highlight areas where the project can grow, through longer-term testing, broader user sampling, real-world deployment, and improved physical adaptability, to more effectively support teenage reading engagement across different contexts and demographics.

## 7 Conclusion

This project sets out to explore how interaction design can be used to encourage long-form reading among teenagers, addressing a growing concern over declining reading habits in the digital age. Grounded in a user-centered, qualitative approach, the project combined interviews, prototype development, and testing to understand teenagers' reading behaviors and evaluate how structured interventions might support them. Drawing from time management strategies like the Pomodoro Technique, the prototype aimed to reduce the sense of overwhelm often associated with reading by breaking it into manageable sessions, supported by subtle visual cues rather than disruptive digital notifications.

The findings offer both affirmation and challenge to existing literature. While the structured approach aligned with prior research highlighting the effectiveness of time-based techniques in improving focus, the physical design revealed unforeseen limitations in compatibility with diverse book formats, suggesting that practicality and adaptability are as crucial as behavioural support in such interventions. Furthermore, despite the clear identification of reading phases, the lack of participant feedback on colour choices indicates an area that warrants further exploration to ensure visual communication is fully optimized.

In conclusion, this project contributes to the conversation on how technology can be leveraged not as a distraction but as a tool to foster meaningful cognitive habits in teenagers. While the prototype represents a

step in the right direction, further development, both in design flexibility and motivational strategies, is needed. Additionally, the prototype's low-friction, shareable nature makes it well-suited for integration into broader social or educational initiatives. In doing so, interaction design can play a meaningful role in supporting teenage reading habits for the digital era.

## 8 Future work

Building on the insights and limitations identified throughout this study, several areas emerge as critical for future work. First and foremost, extended research involving a more diverse participant pool is essential. The current study was limited to Romanian teenagers living abroad, whose reading behaviors may be shaped by unique cultural, educational, and lifestyle factors that are not representative of a broader teenage population. Including participants from varied cultural and geographical contexts would help validate the findings and ensure the prototype's relevance and applicability across different reading environments.

Equally important is the need for long-term testing. As habit formation is a gradual process that unfolds over time, the short-term nature of this project offered only a limited view into the prototype's potential to foster sustained reading behavior. Future studies should adopt a longitudinal approach to assess whether the initial engagement observed can be maintained, and whether the prototype contributes meaningfully to the development of lasting reading habits. Additionally, testing the prototype in more natural environments, such as participants' homes or usual reading spots, would provide a clearer picture of how it integrates into everyday routines and affects real-world reading behavior.

Although none of the participants specifically commented on the colors used, and observations did not indicate any confusion regarding phase transitions, it is worth noting that the phases were described as easily identifiable. However, the absence of feedback on color choice does not necessarily confirm its effectiveness. Therefore, future evaluations should explore whether alternative color schemes could enhance clarity, emotional response, or user engagement, ensuring that the visual language of the prototype is as supportive and intuitive as possible.

Another critical direction for future development lies in improving the physical design of the prototype. To better integrate into the daily reading routines of teenagers, the device should evolve into a thinner, more flexible form that functions seamlessly as a bookmark. This would not only make the design more practical but also ensure it does not interfere with the reading experience. Furthermore, enhancing its adaptability to accommodate various

book formats, especially smaller ones like pocketbooks, will be essential to expand its usability and appeal. In addition, ensuring the prototype performs effectively across different lighting conditions is vital, both for visibility of visual cues and for maintaining its role as a supportive reading companion regardless of environment or time of day.

Future work should also explore the modular potential of the prototype more deliberately, examining how it can be integrated into a range of reading-related activities and programs. For example, in school settings, the prototype could be incorporated into literacy programs or used alongside classroom reading logs to help students manage independent reading time more effectively. In libraries or community centers, it could function as part of collective reading challenges, where multiple teens use the device and share progress, fostering a sense of communal participation and accountability. Within families, the bookmark could support shared routines, such as designated reading hours or parent-teen reading sessions, helping to establish consistent habits in a familiar, supportive environment. By positioning the bookmark as a flexible tool rather than a standalone solution, it can support different motivational strategies. This flexibility not only extends the device's usability but also enhances its relevance across diverse scenarios, encouraging adoption in formal educational initiatives, informal community efforts, and personal or familial settings.

Taken together, these recommendations for future work aim to refine both the methodological approach and the design itself, ensuring that subsequent iterations of the prototype are better equipped to support teenage readers in a wider range of real-world contexts.

## 9 Acknowledgements

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# 11 Appendix

## *Appendix A: Interview questions during Discover phase*

This appendix presents the interview questions used during the Discover phase of the project. The goal of these interviews was to gain a deeper understanding of teenagers' reading behaviours, challenges, and motivations. To structure the inquiry and ensure comprehensive insight, the questions were grouped into three main categories: Current Reading Habits, Barriers to Reading, and Making Reading More Engaging. This categorization helped guide the conversations while allowing flexibility for participants to reflect on their personal experiences.

### **1. Current Reading Habits**

- Can you describe the last book or story you read? What made you pick it?
- How often do you read outside of school, and what types of content do you usually read?
- How do you feel about reading in general?
- When you read, if at all, what does your current reading setup look like? What do you like or dislike about that setting?
- Do you prefer reading on paper or digital formats? What influences your choice?

### **2. Barriers to Reading**

- What are some reasons you might not read as often as you'd like? (If they would like to read, but they don't)
- What is it about reading that you don't find attractive/ doesn't motivate you to read? (If they don't read at all)
- How do other activities in your daily life affect the time you spend reading?
- Are there certain types of books or stories that you find harder to get into?

### **3. Making Reading More Engaging**

- If you could create an ideal reading experience for yourself, what would it include?
- What factors make reading enjoyable or engaging for you?
- How would connecting reading to other interests (could add example based on their previous answers) affect your willingness to read?
- What are your thoughts on different formats, like audiobooks or graphic novels?
- How do you feel about features like rewards, challenges, or group discussions in relation to reading?
- Can you describe a situation where reading felt really rewarding? What made it feel that way?

### *Appendix B: Conversation points during the informal discussion in the Deliver phase*

This appendix outlines the conversation points used during the informal discussions in the Deliver phase. Since the participants involved in prototype testing were different from those in the Discover phase, these informal conversations helped ensure alignment between participant profiles and the project's goals. The discussion focused on assessing participants' existing reading habits, openness to experimenting with new reading tools, and general attitudes toward reading. Although these prompts were not structured as a formal interview, the conversation was organized following the same categories as the Discover phase interview. This approach allowed for effective identification of participants whose behaviours and mindsets were relevant for evaluating the prototype's intended purpose.

#### **Warm-up / Reading Habits**

- Last reading experience (book, story, article) and what motivated the choice
- Include follow-up on plot, characters, genre, emotional response
- Frequency of reading outside school (for fun or curiosity)
- General attitude toward reading (enjoyment vs. obligation)
- Typical reading environment and its impact (e.g. bed, school, public spaces)
- Format preference (physical vs. digital) and reasoning behind it

#### **Barriers & Challenges**

- Personal obstacles to reading more often (time, interest, distractions)
- Perceived reasons why some teens don't enjoy reading
- Influence of lifestyle factors (school demands, hobbies, screen time, etc.)
- Types of stories or formats that feel difficult or unappealing

#### **What Makes Reading Engaging**

- Elements of an ideal reading experience (setting, atmosphere, tools)
- Personal factors that make reading enjoyable or meaningful
- Potential of connecting reading with personal interests (gaming, music, etc.)
- Appeal of alternative formats (audiobooks, graphic novels, etc.)
- Views on motivational elements (rewards, challenges, reading groups)
- Examples of when reading felt rewarding or satisfying, and why

### *Appendix C: Interview question during Deliver phase*

This appendix presents the questions used in the post-testing evaluation sessions to gather user feedback on the prototype and their overall experience. The questions are organized into seven categories: experience with visual feedback, understanding of the perception and timer system, motivation and getting started with reading, reading flow and reactions to breaks, context of use, physical usability and compatibility, as well as initial impressions and potential for long-term use. These categories were designed to capture comprehensive insights into both the functionality and user interaction with the prototype.

#### **Experience with Visual Feedback (Ambient Light)**

- How did you feel about the light signals during the reading session?
- What effect do you consider lighting has on your reading environment or focus?
- Was there anything about the light that you found helpful or distracting?

#### **Understanding and Perception of the Timer System**

- What did you think about the way the time was split during the session?
- How do you consider the timing system helping (or not helping) you during the process?
- How clear or unclear was the purpose of the timer to you when you first started using it?

#### **Motivation and Getting Started with Reading**

- How did it feel to start reading during the session?
- Was there anything that made it feel easier or harder to begin reading?
- What did you think about the length of the reading intervals?

#### **Reading Flow and Reactions to Breaks**

- How did you respond when the breaks came up?
- This question can change based on their behavior:
  - Did you take the breaks, or decide to keep reading? What made you choose that?
- How did the structure of the session (timed intervals and breaks) affect your reading experience, if at all?

#### **Context of Use**

- How well do you think the prototype fits into your usual reading environment?
- Would you see yourself using this in different places or times? Why or why not?

#### **Physical Usability and Compatibility**

- How did the prototype feel to use physically with your book?

- Were there any inconveniences during using the prototype? How do you think they could be overcome?

**Initial Impressions vs. Long-Term Use**

- What was your first impression when you saw the prototype?
- Do you think this is something you'd keep using over time, or just try once or twice? Why?
- How would you integrate it in your routine?
- What would make you want to keep using something like this regularly?

*Appendix D: Informed Consent Form for the interviews in the Discover phase*

This appendix contains the parental consent form used for participants during the Discover phase. The form was designed to inform parents about the nature and purpose of the study, outline the activities their child would participate in, and explain what types of information would be collected. It also clearly states the rights of both the parent and child, including the right to withdraw at any time, ensuring transparency, safety, and ethical compliance throughout the research process.



**Informed Consent Form for Participation in Research Study**

<b>Project title:</b> Encourage teenagers' reading habits	<b>Date:</b> 25 Feb – 15 Jun 2025
Study manager: Lars Holmberg lars.holmberg@mau.se	<b>Studying at Malmö University, Faculty of Culture and Society, S-205 06 Malmö, Phone +46 40 665 70 00</b>
Student: <b>Raluca Pärvan</b> parvanraluca@gmail.com	<b>Education: Interaction Design</b>
	<b>Level: Bachelor</b>

**Who am I?**

My name is Raluca Pârvan, and I am a student in the Bachelor's Programme in Interaction Design at Malmö University. This study is part of my degree project. My supervisor is Lars Holmberg, who can be contacted at lars.holmberg@mau.se.

**What is the purpose of this study?**

The purpose of this research is to design a technical and interactive solution that supports and encourages teenagers to read more physical books. The aim is to make reading feel more accessible and engaging in today's digital society, by addressing the real challenges teenagers face when it comes to reading.

**What will participation involve?**

Your child is invited to participate in an online interview, which may take place via phone or video call. The interview will take approximately 30 minutes to 1 hour. It will be a semi-structured conversation, guided by a few pre-prepared questions, and designed to allow your child to freely express their thoughts and experiences.

Topics include:

1. Current reading practices
2. Social influences (family and friends' attitudes toward reading)
3. School's attitude toward reading
4. Challenges when reading
5. Preferences for alternative reading formats (audiobooks, graphic novels, etc.)
6. Ideal reading environment

**Your and your child's rights**

Participation in this study is entirely voluntary.

- You and/or your child may withdraw at any time, without giving a reason.
- You may request to review the interview questions in advance.
- You are welcome to attend the interview if you wish.
- You and/or your child may decline to be audio-recorded.
- You and/or your child may decline to answer any question, without providing any further details.

**Data Protection and Confidentiality**

This research is conducted in accordance with the **General Data Protection Regulation (GDPR)** and other applicable data protection laws.

- All personal data collected will be **anonymized** and stored securely.
- Only the researcher (myself) and academic supervisor will have access to the data.

- In any thesis or publication, no identifying information will be used.

The following data will be collected and stored:

- Age
- Nationality
- Country of residence and length of stay
- Gender
- Responses to interview questions

### **Use of the results**

The results of this study will be published as part of my Bachelor's thesis at Malmö University and made publicly available via the Digitala Vetenskapliga Arkivet (DiVA). The findings may also be included in other academic publications. No individual participants will be identifiable in any report or publication.

### **Parental/Guardian Consent**

As your child is a minor, we require your informed consent for their participation in this study.

Please complete the section below:

#### **Parental/Guardian Consent Form**

I have read and understood the information provided above regarding this study. I give my child to participate in the interview described above.

- Child's name: \_\_\_\_\_
- Age: \_\_\_\_\_
- Parent/Guardian name: \_\_\_\_\_
- Relationship to child: \_\_\_\_\_
- Contact information (email or phone): \_\_\_\_\_
- I agree to the interview being audio-recorded:  
 Yes     No
- Signature of Parent/Guardian: \_\_\_\_\_
- Date: \_\_\_\_\_

Thank you for your time and consideration.

*Appendix E: Informed Consent Form for the interviews in the Deliver phase*

This appendix includes the parental consent form used for the Deliver phase of the project. While it follows the same ethical structure as the consent form from the Discover phase, it is adapted to reflect the different nature of this stage. The form outlines the specific activities involved in testing the prototype, the type of data collected, and reaffirms the rights of both the child and their parent, including the option to withdraw at any time.



**Informed Consent Form for Participation in Research Study**

<b>Project title:</b> Encourage teenagers' reading habits	<b>Date:</b> 25 Feb – 15 Jun 2025
Study manager: Lars Holmberg lars.holmberg@mau.se	<b>Studying at Malmö University, Faculty of Culture and Society, S-205 06 Malmö, Phone +46 40 665 70 00</b>
Student: <b>Raluca Pârvan</b> <b>parvanraluao@gmail.com</b>	<b>Education: Interaction Design</b>
	<b>Level: Bachelor</b>

**Who am I?**

My name is Raluca Pârvan, and I am a student in the Bachelor's Programme in Interaction Design at Malmö University. This study is part of my degree project. My supervisor is Lars Holmberg, who can be contacted at lars.holmberg@mau.se.

**What is the purpose of this study?**

The purpose of this research is to design a technical and interactive solution that supports and encourages teenagers to read more physical books. The aim is to make reading feel more accessible and engaging in today's digital society, by addressing the real challenges teenagers face when it comes to reading.

**What will participation involve?**

Your child is invited to participate in an online interview, which may take place via phone or video call. The interview will take approximately 30 minutes to 1 hour. It will be a semi-structured conversation, guided by a few pre-prepared questions, and designed to allow your child to freely express their thoughts and experiences.

Topics include:

1. Current reading practices
2. Social influences (family and friends' attitudes toward reading)
3. School's attitude toward reading
4. Challenges when reading
5. Preferences for alternative reading formats (audiobooks, graphic novels, etc.)
6. Ideal reading environment

**Your and your child's rights**

Participation in this study is entirely voluntary.

- You and/or your child may withdraw at any time, without giving a reason.
- You may request to review the interview questions in advance.
- You are welcome to attend the interview if you wish.
- You and/or your child may decline to be audio-recorded.
- You and/or your child may decline to answer any question, without providing any further details.

**Data Protection and Confidentiality**

This research is conducted in accordance with the **General Data Protection Regulation (GDPR)** and other applicable data protection laws.

- All personal data collected will be **anonymized** and stored securely.
- Only the researcher (myself) and academic supervisor will have access to the data.

- In any thesis or publication, no identifying information will be used.

The following data will be collected and stored:

- Age
- Nationality
- Country of residence and length of stay
- Gender
- Responses to interview questions

### **Use of the results**

The results of this study will be published as part of my Bachelor's thesis at Malmö University and made publicly available via the Digitala Vetenskapliga Arkivet (DiVA). The findings may also be included in other academic publications. No individual participants will be identifiable in any report or publication.

### **Parental/Guardian Consent**

As your child is a minor, we require your informed consent for their participation in this study.

Please complete the section below:

#### **Parental/Guardian Consent Form**

I have read and understood the information provided above regarding this study. I give my child to participate in the interview described above.

- Child's name: \_\_\_\_\_
- Age: \_\_\_\_\_
- Parent/Guardian name: \_\_\_\_\_
- Relationship to child: \_\_\_\_\_
- Contact information (email or phone): \_\_\_\_\_
- I agree to the interview being audio-recorded:  
 Yes     No
- Signature of Parent/Guardian: \_\_\_\_\_
- Date: \_\_\_\_\_

Thank you for your time and consideration.