# Gen Z’s Digital Autonomy

## Investigating How Social Media Platforms Affect Autonomy in Gen Z Users

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**Key Words:** Autonomy, Social Media, Interaction, Awareness, Transparency

**Abstract:** Modern social media platforms like TikTok, Instagram, and YouTube use algorithms that prioritize engagement over user well-being, often exploiting emotional triggers to keep users scrolling. This can lead to compulsive usage patterns, particularly for Gen Z, who spend the most time on these platforms.

To explore how Gen Z users engage with social media, and the impact it has on their autonomy, we conducted diary studies, interviews, and literature reviews. We then used these findings to inform wireframes as potential design solutions. Through these investigations, we learned about Gen Z's social media usage patterns and the impact of these usage patterns on their overall well being, attention, and sense of autonomy.

**Content vs Social Media:** Content refers to the media that is consumed when a user is on social media. Social media refers to the platform that a user uses. In the context of our project, we use “consuming content” and “using social media” interchangeably. since they both refer to a user scrolling and taking in what they see on social media.

# Introduction

In our current day in age, everyone has a phone within their reach. Though its initial use was for quicker and more direct communication, its use case has shifted as technology has evolved. As phones became more powerful, users were able to keep up with multiple people simultaneously through the use of social media.

Slowly, applications like Instagram and Tiktok began incorporating recommendation algorithms that would feed users content based on what they consume and interact with. This began influencing the way users interacted with social media, leading them to scroll for longer than they had intended.

As users of social media ourselves, we noticed this pattern exists in not only our own lives, but also with the people around us. We wanted to get a better understanding of individuals’ social media usage behaviors, specifically focusing on whether their usage of social media was intentional or compulsive and how we could explore giving users back control of their experiences. This led us to our research questions: How do Gen Z users experience autonomy while using social media? What situations lead to intentional versus compulsive engagement? How might we design solutions that promote user autonomy?

# Background

Understanding the autonomy of Gen Z on social media requires examining prior research on social media design, user psychology, and interventions to restore user control. We needed to look into the addictive design patterns, emotional triggers that cause compulsive use, role of values and intentionality in usage, and self-tracking tools.

## Boredom & Compulsivity

Boredom and other emotional factors are strong aspects of Gen Z's social media habits. Boredom proneness can predict increased social media use and a reduction in wellbeing (Bai et al., 2021). But what came first, the chicken or the egg; many claim that digital life has reduced our tolerance for unstructured and "down" moments (Tam & Inzlicht, 2024). We can't sit in silence anymore. Additionally, adolescents are experiencing immense emotional dysregulation and an increase in problematic social media usage (Iannattone et al., 2024). Our study results showed that users often stayed longer on social media than they originally planned during downtime, which is supported by these research insights.

## Autonomy & Intentionality

Autonomy in digital spaces is shaped less by how much time users are spending on a platform, but more by whether their behaviors align with their intentions. Current digital technologies are being designed to diminish one's autonomy, which can be framed as an ongoing negotiation between users and technology; this creates a critical need for more "autonomy-enhancing" patterns in digital design (Pérez-Verdugo & Barandiaran, 2023). Other empirical work supports that interventions aligned with a user's values can strengthen their motivation to regulate their social media use (Galla et al., 2021). These findings reinforce our focus on intentionality.

# Tripartite Investigation & Design Process

## Tripartite Methodology

We began with a technical&conceptual investigation, examining platforms like TikTok and Instagram, along with stakeholder and value analyses. We then moved onto an empirical investigation, including a diary study and semi-structured interviews to capture real usage patterns. We supplemented these findings with a conceptual investigation in the form of a literature review. Finally, we finished off with a technical investigation by exploring potential design solutions through wireframes.

**Ethical Considerations:** All participant data was anonymized. Interviews were conducted respectfully, emphasizing voluntary participation. Our design process prioritized solutions that empower autonomy without imposing restrictive controls or exploiting behavioral patterns.

## Design Process & Timeline *(Refer to figure 1)*

We conducted 10 diary studies in week one and 6 interviews in week two, synthesizing both through an affinity map. The diary study required participants to make 3 diary entries in total, spread over a week. Here are the diary study diary study instructions, diary study responses, interview questions, interview notes and affinity map. Because our data reached theoretical saturation, we replaced a planned survey in week 3 with a literature review.

Based on the findings from our investigations, we realized that there were a variety of ways that we could approach building a solution. During the final weeks, we decided that we were each going to develop our own wireframes that targeted a specific solution.

## Value Sensitive Design Methods

In addition to our Value Oriented Semi Structured Interviews, our Value Oriented Coding Manual (Affinity Map), and our Value Sketches (Wireframes), we used the following Value Sensitive Design methods.

- **Stakeholder Analysis** – We discussed which stakeholders are the most impacted by social media.
- **Value Source Analysis** – We explored the values of the stakeholders who were most impacted by social media.
- **Value Dams & Flows** – Based on our stakeholder & value analysis, we mapped out recurring stakeholder values. We then determined how each of those values interacted with each-other, highlighting value tensions vs. value alignments. This helped inform our final designs.

# Findings

We identified several key patterns in how users experience autonomy with social media through diary studies (n=10), interviews (n=6) and literature reviews. Themes include loss of control, habitual use, emotional triggers and platform design influences.

## Loss of Control & Autopilot Phenomenon

The most striking finding was how frequently participants used social media without conscious intention. P3 described this vividly “After I checked the notification and determined I didn’t care about it, I went looking for dopamine in the reels section. The dangerous and scary part is, I didn’t even click over to the reels. Once I clicked the back button out of the notification, instagram autodirected me to the reels tab and I, brainless zombie that I am, sat and scrolled.” P5 noted opening instagram 30 seconds at a spotlight. “I wasn’t thinking about it—I just instinctively opened Instagram while waiting for the light to turn green.”

Time distortion accompanied this autopilot behavior. Participants consistently underestimated session duration. P3 sat scrolling for 20 mins when she had “mountains of homework” to complete, and admits to feeling ashamed by saying she “sat in my chair, bouncing my leg, needing to pee, being a simple 8 steps

away, for 15 minutes” before she could physically put her phone down. P4 noted “even though it was a conscious choice, I felt like time was lost because it went by very fast."

## Intentional Use vs. Loss of Control

When participants entered social media with clear intentions, they reported higher autonomy and less internal conflict. P5’s photography work on Instagram demonstrated this: “This was a conscious choice. I knew what I was trying to accomplish. I did not really notice any conflict since this is what I was trying to do and it's part of my work... This didn't feel like time lost. I was aware of the time I was spending and it was all intentional."

However, even intentional use could be compromised by platform design. P6’s work research session showed this. "This session occurred sitting at my work desk... I used the app instagram for about an hour total... needing inspiration for what to create on our brand launch... but while I'm using these apps for this type of 'research' is still logged into my personal accounts, so I still will come across my peers content and sometimes get distracted, and out of habit will hit the refresh button and start scrolling forgetting I'm supposed to be looking at other teams content."

## Ineffective Self Regulation

Every participant who set boundaries reported regularly overriding them. P14 "has a limit on tiktok for an hour a day but always ignored it. Doesn't even think about it, just hits ignore." P13 mentioned when she overrode her one-hour TikTok limit, she felt "guilty but didn't care, nobody knows, an app can't tell me what to do."

This resistance to app-imposed limits created a paradox - users wanted control but resented external regulation. P3 caught this tension: "This makes me want to set an app timer that locks me out of Instagram after a certain amount of time, but even that feels pathetic because why do I need to set baby locks on my devices? Can't I just say 'no more' like the adult I'm supposed to be and carry on with my day? Apparently not."

## Emotional Regulation through digital escape

Social media served as a primary coping mechanism for difficult emotions, but this strategy often backfired. P1 deliberately used YouTube Shorts when "overwhelmed with school & personal responsibilities, and feeling a lot of anxiety. Scrolling sometimes helps me disassociate from these feelings temporarily." However, she consistently reported feeling numb during use and guilty afterward. After her break, she spent an hour scrolling despite being “exhausted and the whole time I knew I should stop," experiencing Brain Fog as a result.

Literature supports this pattern of using social media for emotional regulation. Adolescents who struggle with emotion dysregulation experience boredom more easily and turn to social media to fill the void, creating a cycle where boredom leads to scrolling which fails to resolve the underlying emotional state (Iannattone et al., 2024).

## Platform Design

Participants seemed aware of design features like algorithmic recommendations, infinite scroll, and short-form content that hooked them in and yet couldn't resist them. P2 explained "Recommended content - thumbnail - tailored - is addicting. Content geared towards interests. Short form is more addicting." P1 also explained "The recommended content is tailored to what I typically watch, so it was entertaining and kept me hooked. If I kept scrolling, I could stay entertained for a long time."

The infinite scroll feature was specifically identified as one that was violating their autonomy, as mentioned by P1, P2 & P3. P3 also described how Instagram “autodirected me to the reels tab" without her conscious effort. "I didn't even need to make the conscious effort to click on the app, my phone just took me there, and my dumb addicted baby brain didn't fight back."

Research on sensorimotor design validates these experiences, showing that apps that are extremely easy and flowy to use can be autonomy-diminishing when they automate behavior instead of helping users regulate it (Pérez-Verdugo & Barandiaran, 2023). Dark pattern research identifies the specific features participants described as infinite scrolling, autoplay, and algorithmic recommendations as "interactive hooks" that teach users to act in certain ways and create obstacles to free choice (Mildner et al., 2023).

## Context dependent patterns

Certain contexts and times emerged as triggers to usage. P9, P8, P10 all checked phones immediately upon waking, P14 & P9 mentioned scrolling before bedtime, transitioning between tasks for P9, and moments of boredom for P5 & P9. Our literature review confirms that digital life has reduced our tolerance for unstructured and "down" moments, with downtime now feeling increasingly threatening in our digital age (Tam & Inzlicht, 2024).

# Individual Solutions

## Azita’s Solution *(Refer to figure 2)*

When thinking about how to support Gen Z users’ sense of autonomy, I kept coming back to a key idea: increasing self-awareness. I was especially interested in how the type of content users consume (not just total screen time) shapes their emotional and behavioral outcomes. Existing tools like Apple Screen Time focus primarily on time, but time alone doesn’t capture whether users are engaging with content that aligns with their values or unintentionally slipping into compulsive scrolling. This led me to a guiding hypothesis: If users gain clearer awareness of what they’re consuming, they’ll be better equipped to make intentional choices and feel more in control of their social media use.

During my literature review, I found that data visualization has been effective in driving behavior change in other domains such as physical activity and environmental impact. However, I couldn’t find research exploring how visualizing social media content consumption might influence user reflection or habits.

That gap inspired me to prototype a few early concepts focused on helping users understand their content consumption over time.

These wireframes serve as a foundation for future research rather than a finalized design solution. They show potential approaches to visualizing content consumption that could be used in later studies to explore which techniques resonate most with users, increase self-awareness, and potentially spark behavior change. While we didn't test them in this project, they highlight how visual feedback could support more intentional, autonomy-driven social media use.

## Kira's Solution *(Refer to figure 3)*

For my solution (Fig.3), I focused on how we could encourage users to not spend as much time scrolling on social media. I came up with two solutions, the first one involving different locations (restaurants, museums, etc.) that would attach coupon codes to their videos which would encourage users to go in and visit, rather than continuing to scroll. The second solution involved adding a new setting called "Algorithm Sensitivity" which would allow users to select how sensitive they want their algorithm to be and then lock it for a certain amount of time.

Out of these two solutions, I think the second one would have more success in helping users spend less time on social media. Referencing back to one of the interviews that was had, the user mentioned how they uninstalled tiktok because their content was so catered towards them that they often found themselves doomscrolling. When asked about Instagram Reels, they said that the algorithm wasn't as good which meant their content didn't fully align with their interests, making it easier for them to pull away when need be. This solution would slowly start addressing users' habits of falling into compulsive scrolling patterns by providing them with content they aren't interested in.

## Reid's Solution (*Refer to figure 4*)

Across my diary studies and interviews, participants did not always equate heavy usage with a loss of control; especially those whose work, identity, or responsibilities require them to spend significant time online. A diary study participant, a video director for a major league sports team, must use social media every day for research, inspiration, and trend awareness. I use Instagram heavily for my own photography brand, where a large portion of my time is spent productively, growing my network, posting and building my portfolio, or learning new tools. One interviewee, a UW student-athlete, relies on social media to curate her persona and manage her NIL obligations. The main concern during these moments was the user straying from their original purpose of opening the app and getting lost in the black hole that social media can feel like.

All of this is to say, autonomy is not defined by *how much* time an individual spends on an app, but if their time aligns with their *intent*. Time online is often purposeful or necessary, making time alone a poor measurement of autonomy. The student athlete shared, "I wish that there was an easier way to set screen time limits, that worked with you instead of setting exact times." This led me here: if platforms can help users stay connected to their original goal of opening the app, they can promote a stronger sense of control without punishing or policing their time. The idea is to prevent moments that cause users to forget

why they opened in the app in the first place. My design introduces a mode-selection feature that asks users why they are there to do so the UI can adapt to that purpose. The intent is not to remove their freedom; they can enter, exit, or ignore the modes at any time. It's a redesigned screen time tool that protects focus rather than limiting minutes. For example, choosing "Research / Work" mode simplifies the interface; the explore page highlights only relevant content, saved research and other important materials become easily accessible, and notifications that trigger compulsive checking (e.g. DMs, comments, likes). These visual changes remind the user of their mode and purpose.

### Sawani's solution *(Refer to figure 5)*

For my solution, I focused on what autonomy means and how technology can support individuals in feeling more in control of their habits, behaviors, and emotions. Autonomy can't be given or taken away, but we can design conditions that strengthen it. Our research showed that while nudges and notifications can deter certain behaviors, they can also create **unintended dependency**, reinforcing reliance on digital reminders instead of fostering self-regulated change. This raised the core question: **How can we create technological conditions that genuinely support autonomy?**

To address this, I proposed a progressive program (Fig. 5) centered on increasing internal awareness through transparent usage data. The app would be downloaded when users feel ready to understand their patterns and work toward changing their habits. Weeks 1–2 function as a passive observation phase, collecting data on which apps are used, when they are opened, and for how long. Weeks 3–4 make this information visible to users, paired with optional reflective prompts. Weeks 5–6 introduce mood-based modes: a calming experience for users seeking a break, or an inspiring one for those seeking motivation. All features remain optional. Weeks 7–8 gradually reduce system involvement, **aiming for sustained awareness and intentional behavior even after the system is removed.** A key limitation is that progress varies across individuals, so timelines must remain flexible.

## Discussion & Impact

Gen Z, the first generation of true "digital natives," grew up with ever-present technology and became highly reliant on social media's short-form, low-commitment content. Our research shows that autonomy cannot be imposed through external controls but must develop through internal awareness. Effective design should reveal patterns rather than prescribe behavior, helping users notice habits like reflexively picking up their phones or slipping into doomscrolling. Yet social media business models prioritize engagement, often conflicting with user autonomy. Meaningful digital wellbeing will require both user awareness and greater platform accountability through transparency, supportive tools, or policy to ensure individuals aren't left to manage this alone.

Our research on Gen Z's media use and autonomy offers insights that extend beyond a single generation, inviting future designers and researchers to build on this work. Considering multi-lifespan design, the strategies we propose grounded in supporting long-term digital wellbeing can benefit future generations who will face even greater media saturation. In terms of time, our aim is for these design approaches to evolve alongside social media itself, providing durable support for user autonomy rather than short-term

fixes. The pervasiveness of our findings is strengthened by the diversity of our participant pool, though we acknowledge the cultural limitations of US centric, English-speaking samples, future work can adapt these insights across global contexts. Our design is rooted in values of human agency, prioritizing internal awareness over system dependency and minimizing environmental impact by leveraging existing infrastructures while also recognizing the tension this creates with attention-driven platform economics. Finally, our stakeholders extend across generations and use cases: from Gen Z to younger "iPad kids" to adults who rely on social media for work. By centering autonomy and adaptability, we hope to inspire designs that support people's wellbeing without restricting or exploiting them.

# Conclusion

Our research explored how Gen Z's social media use relates to autonomy, showing that the core issue is not time online but the loss of intentionality caused by algorithmic design. Across studies, participants underestimated their usage and struggled to disconnect, though many also relied on social media for work and connection. Our design concepts aim to build internal awareness rather than restrict behavior, using tools like consumption feedback, intention-anchored modes, and adjustable algorithm sensitivity. By making patterns and algorithmic influence visible, these interventions help restore user agency.

# Roles & Division of Labor

These are the roles we started off the project with: Kira (PM), Azita (UX Researcher & Designer), Reid (UI/UX Designer), Sawani (Research Analyst). In reality, all group members worked together on all parts of the project. Group contributions include : Conducting Interviews, Synthesizing Diary Study Results into Affinity Map, Conducting Literature Review & Gathering Findings, Wireframes, Completing Final Presentation & Report. Individual contributions were from Azita for Diary Study Instructions & Questions and Kira for the Interview Questions.

# AI Disclosure

**Everyone**: ASTA – Sourcing research articles for literature review

Azita: Before designing wireframes, I asked ChatGPT to help me brainstorm what data visualization techniques existed. It suggested bar charts, pie charts, bubble charts, histograms, etc. I asked ChatGPT for tips on how I could improve the wording of my hypothesis in the Individual Findings Section of this report.

Sawani: Wireframes through Figma Make and wireframe prompts engineered through Claude. I outlined my design ideas along with how I wanted the wireframes to look and asked it to generate a prompt of required wireframes, and posted it in Figma make.

Reid: Sometimes, I didn't know how to say something in a way I felt was eloquent enough, so I would give it my half-baked thoughts and ask it to form a coherent sentence.

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# Appendix

- Stakeholder & Value Source Analysis
- Value Dams & Flows
- Diary Study Instructions
- Diary Study Responses
- Interview Questions
- Interview Notes
- Affinity Map
- Literature Review
- Wireframes

# Images

Fig. 1

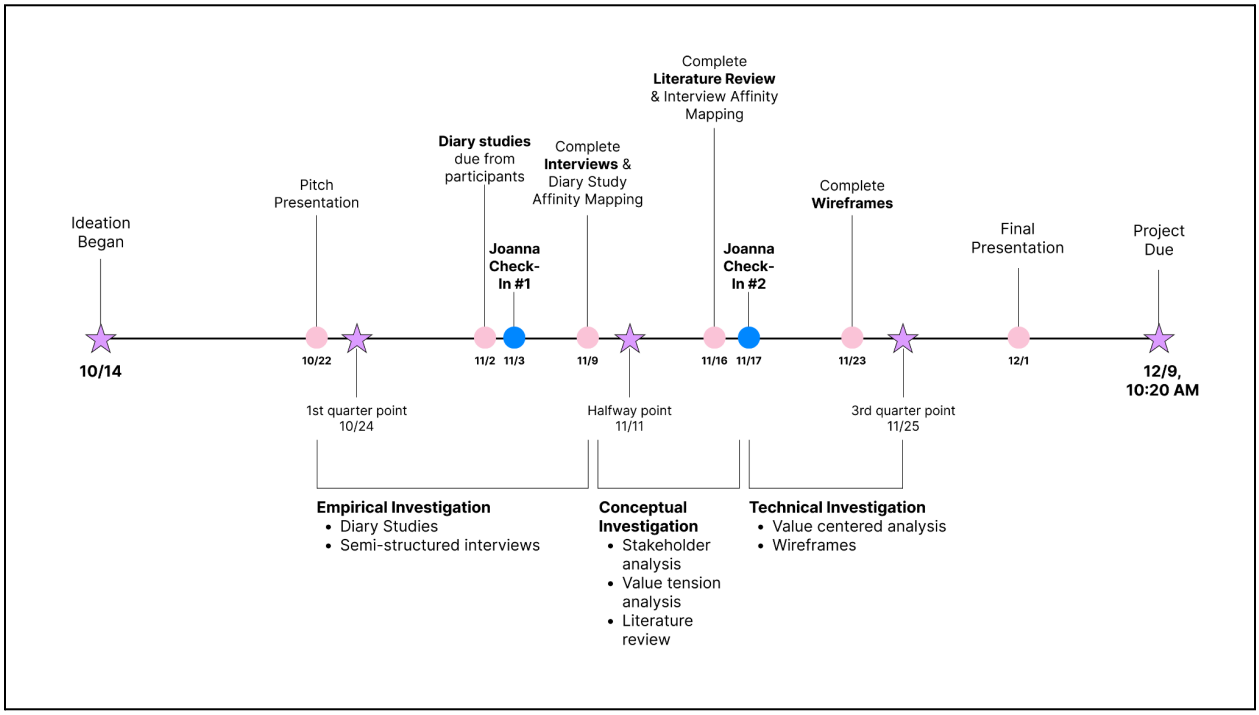
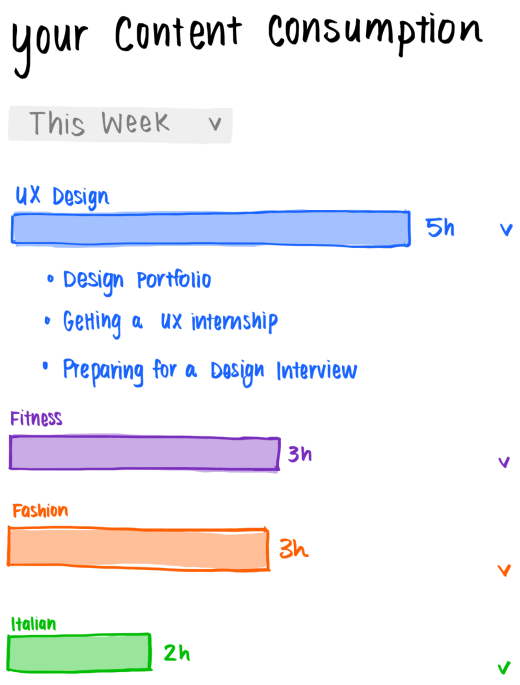
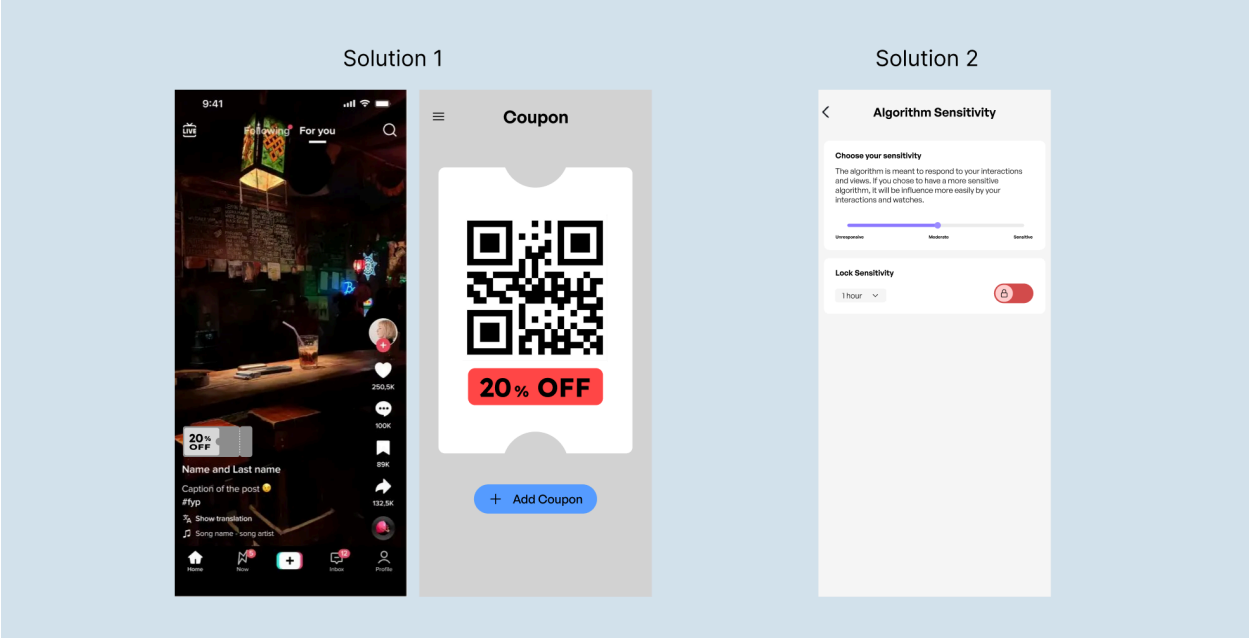



Fig. 2

| Bar Chart | Pie Chart |
| --- | --- |
| User can visualize the **absolute** amount of time they spent across top content categories<br><br>Helps users see where their time actually goes, counteracting the self-estimation bias observed in the literature review.<br><br>  | User can visualize the **relative** amount of time they spent across top content categories<br><br>Makes it immediately clear when content that doesn't align with their values occupies a disproportionate share of attention.<br><br>  |

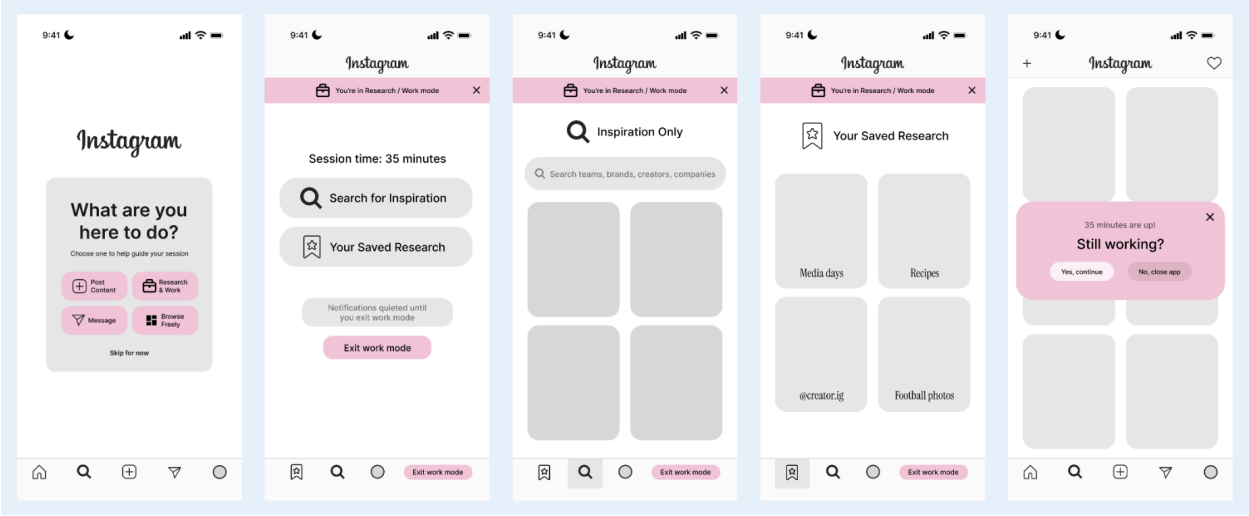
Azita's solutions

Fig. 3



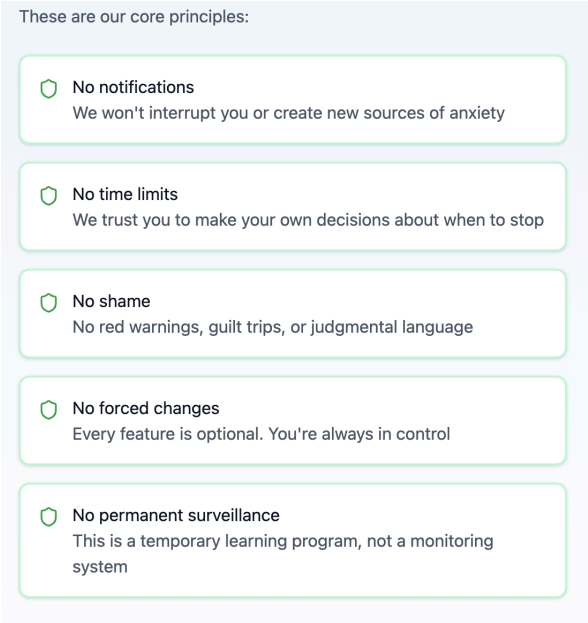

Kira's Solutions

Fig. 4

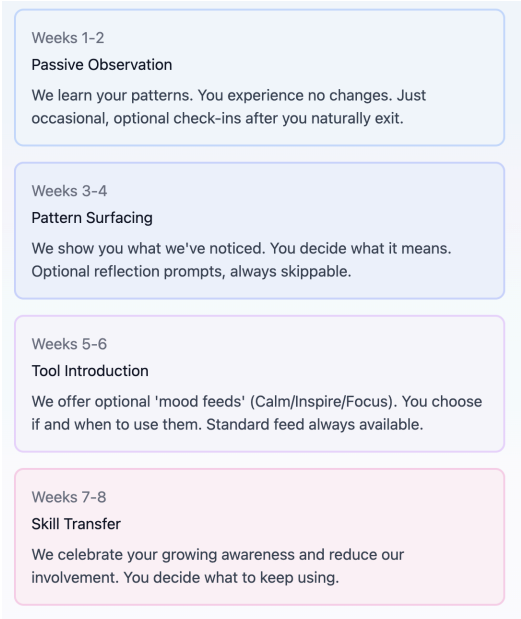



Reid's usage-mode solution wireframes.

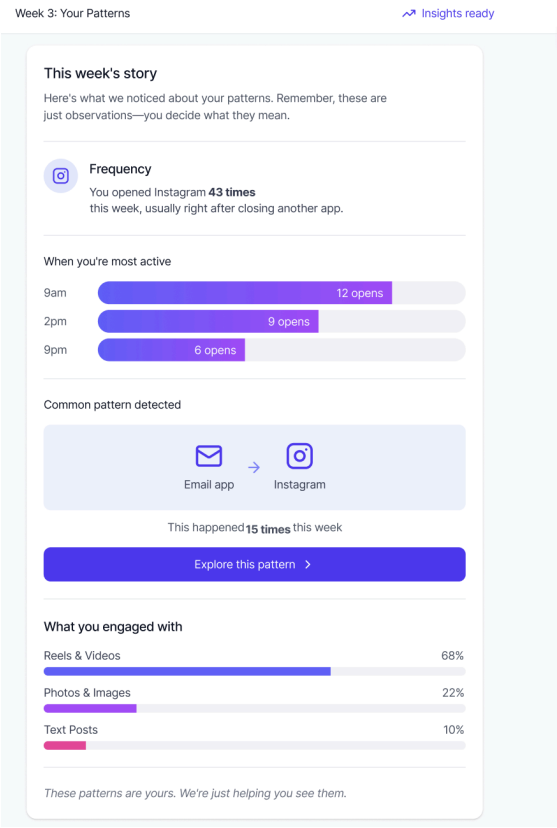
Fig. 5



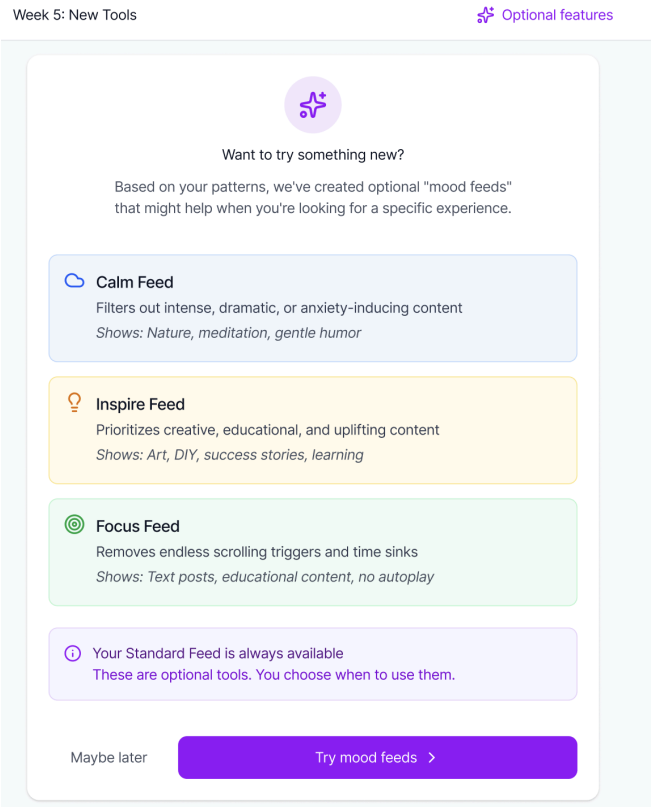

Core principles of the app



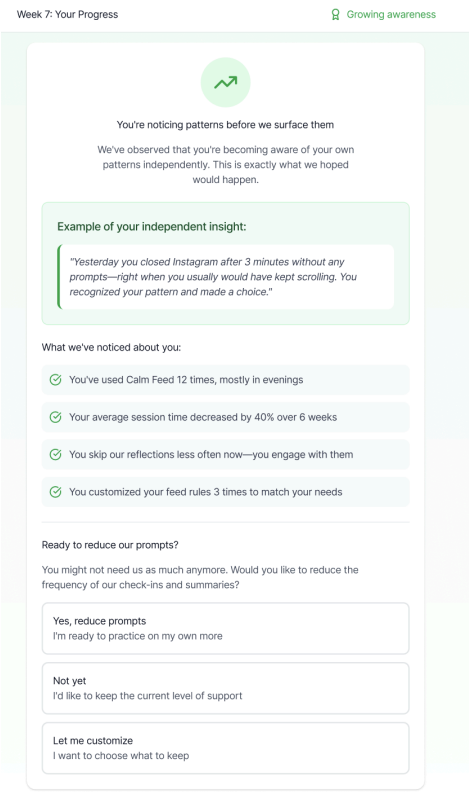

8 week timeline brief




Data transparency




Algorithm alterations




Transferring from insights to independence

Sawani's Wireframes