

Dream Visualization: A Pilot Study on the Designing of a Digital Application to Explore Self-Reflection among Generation Z

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Abstract

This paper investigates how User Experience (UX) design may support introspection among Generation Z through the visualization of personal dream content. Dream reflection has been linked to emotional processing and expansion of self-awareness, with digital tools enabling users to document and re-engage with lived experiences. Explored through a design lens, the study considers how the design of an application may encourage reflective engagement through interaction with visualized representations of dream content.

A prototype of a digital application, titled *Inoro*, was created through an iterative design process. Data was collected through a questionnaire, interviews, and user testing sessions with a small number of Generation Z participants. Findings indicate that participants responded positively to an abstract and non-literal visual approach to dream visualization, which was viewed as a creative and emotionally safe way of exploring their unconscious mind.

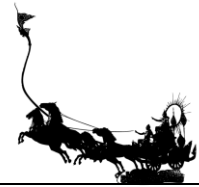
As an exploratory pilot study, situated in the frameworks of design research, the findings are based on a small-scale user testing sample and are not intended to reflect a broader generalization. The results suggest that presenting users with a visual output of their recorded dream content may support reflective practices. The study aims to contribute design-oriented insights into ways digital applications might create engaging introspective experiences among users.

Keywords: *User Experience (UX) Design, Dream Exploration, Generation Z, Introspection*

1. Introduction

In recent years, a growing concern has been raised over the state of mental wellbeing among Generation Z, the group known to be the first, following Millennials, to have grown up in an already digitally established and interconnected world. According to the *2024 Naluri Mental Health Trends* assessment, conducted by the digital health company Naluri with over 28,000 participants across several Asian countries, Generation Z was reported as the group exhibiting the highest mental health risk relative to older generations. Across all the surveyed countries, two-thirds (66%) of Generation Z respondents were classified as being at high risk for mental health concerns, a higher proportion than what was observed among Millennials and Generation X. Although Thailand reported the lowest overall proportion of high-risk individuals among the countries included, Generation Z within Thailand was still classified as the most at-risk group compared with previous generations (Naluri, 2024). These findings indicate that mental health remains a visible concern for young individuals in the region and highlight the need to consider supportive practices that address psychological wellbeing, raising the question as to how design may be used to address this.

Socio-economic data provide additional context for understanding Generation Z in Thailand, a group that differs notably from previous generations, particularly in relation to education, employment, and personal development. Recent data from the National Economic and Social Development Council indicates that some individuals choose to postpone formal education due to concerns regarding the cost, quality, and limited flexibility of the existing education system. At the same time, labor market participation among this group has become increasingly precarious. In 2024, 13.6% of Generation Z reported experiencing unemployment for longer than one year, while unemployment among individuals without prior work experience reached 48.5%. These patterns reflect a broader tendency toward delayed entry into the workforce, which can be associated with a need for gap years and periods of self-exploration. Despite these challenges, Generation Z in Thailand also demonstrates a growing entrepreneurial trend, with participation in own-account businesses increasing from an average of 0.4% prior to the COVID-19 pandemic to 1.8% in subsequent years. Alongside this shift, young workers report changing expectations regarding employment, placing greater importance on



factors such as work-life balance (NESDC, 2025). Examined together, these trends suggest that Generation Z is navigating less linear life paths than previous generations, while actively reflecting on questions relating to identity, purpose, and personal direction. This socio-economic context underscores the importance of further examining reflective and self-directed practices.

One such practice that has been examined within psychological theory is dreaming, which has long been considered a significant access point into the human psyche, functioning as a window into a person's unconscious mind and a way of shining light on underlying thoughts and emotions suppressed by waking life. Carl Jung (1946) described dreams as "a product of nature that enables us to know the truth about ourselves". Throughout his multiple decades of work, Jung analyzed thousands of dreams, identifying the many roles they carry, such as providing "a first-class source of information" (1935), aiding in balancing the conscious and unconscious mind.

Despite the established psychological significance of dreams and growing evidence concerning Generation Z's state of mental wellbeing, there remains limited research on how design approaches may meaningfully connect these domains. The aim of this research is to examine how User Experience (UX) design can facilitate an introspective digital experience for Generation Z users through the integration of dream recall and visualization. This study addresses the following research question: How can a digital application foster self-reflection among Generation Z users through the visualization of their recorded dreams?

2. Objectives

- 1) To design and prototype an application that translates dream descriptions into visual, interactive formats.
- 2) To test the effectiveness of visual dream representation in facilitating self-reflection among Generation Z users.

3. Materials and Methods

3.1 Scope of research

The study focuses on the development and exploration of a digital prototype, *Inoro*, designed to encourage dream-based reflection through visualization. As part of the process, user testing with a selected group of participants (N = 4) has served as a method of gaining feedback on the proposed features and guiding the direction of the design while also examining how the design may operate in practice. Participants perceived engagement, dream recall, sense of self-awareness and dream experiences after interacting with the prototype were evaluated to assess the overall user experience of the application. The intention of the study was not to validate claims, measure psychological outcomes, or examine participants as a broader demographic group, but rather to investigate the research question through engagement with the prototype as it progressed from low- to -mid, to high- fidelity stages.

3.2 Definition of research terminology

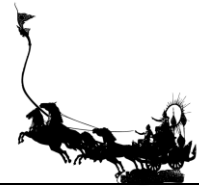
To provide clarity and contextual consistency, recurring terms used in this paper are defined as follows:

Generation Z: refers to the generation born between the late 1990s and early 2010s (Oxford English Dictionary, n.d.).

UX Design: User Experience (UX) design entails the processes employed by designers to develop products, both digital and physical, which provide meaningful and relevant experiences for the intended users (IxDF, 2016).

Human-centred design: Human-centred design (HCD) is an approach to problem-solving that focuses on actively including users and stakeholders as a core part of the design process, while seeking to address core problems or opportunities (IxDF, 2021).

Dream recall: The ability to remember and reflect on the contents of a dream upon awakening.



Dream visualization: The representation of dream content, through visual or interactive formats, such as images, emotions, or narrative elements.

3.3 Research methodology

The research adopts a mixed-methods approach, utilizing both qualitative and quantitative methods. The process is structured into three main stages: exploratory research, prototype development, and user evaluation.

Table 1 Research stages, corresponding steps, and tools used

Research stage	Research step	Tools
1 - Exploratory	Identify users' problem space and needs through qualitative research	User interviews, questionnaire
1 - Exploratory	Develop and apply UX design tools to better understand users and their context	Personas, empathy maps, user journeys
2 - Development	Begin visual ideation and concept exploration	Sketching, low- fidelity wireframes
2 - Development	Gather user data to inform the development of the prototype	User interviews, questionnaire
2 - Development	Incorporate findings into the finalisation of the digital prototype	
3 - Evaluation	Evaluate the final prototype with selected participants	Figma, video call

Source: Researcher, 2025

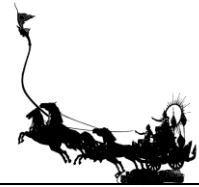
3.4 Methods of data collection

The first stage, exploratory research, utilized qualitative methods to gather data in order to establish a deeper understanding of the problem space and overall emotional landscape of the user group in relation to dreaming. Participants were selected based on availability and their fulfilment of the inclusion criteria, which required them to belong to Generation Z and reside in Thailand, be aged 22-27 and represent mixed genders. No requirements related to educational status, job background, design knowledge, or other factors were imposed. The data collection methods employed are as follows:

Online questionnaire: An online questionnaire (N = 10) was distributed to gather contextual insight into participants' relationship to dreams and introspection, as well as their previous/current experience with digital wellness applications. The purpose was to inform the design direction, by identifying preferences and habits among the targeted user group. The questionnaire was distributed through a QR Code linking to an online survey form.

The questions were divided into three overarching categories: "Dream habits", "Digital behaviour" and "Needs and motivation". Each category included 2-3 questions. Examples of questions included: "How often do you remember your dreams?", "Do you believe dreams are or can be meaningful?" and "Do you record your dreams (e.g., note-taking, voice recording, drawings)?" The questions were designed to be concise while also allowing for more open-ended reflections.

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User interviews & testing: Following the prototypes' development, four participants (N = 4) who were selected based on availability and proximity, engaged with the prototype through user testing sessions, with accompanying interviews. In total, four user testing sessions and two interviews were conducted, all one-on-one. The sessions and interviews were conducted both in person and online. The online sessions took place via video call, while additional interview responses were collected through a shared digital document, completed by the participants at their own convenience.

The content of the testing sessions varied depending on the stage of the prototype as each session was intended to examine a proposed feature or design and to observe how participants interacted with it. For two sessions, users were asked to prepare material to bring to the session. In each session, the researcher presented a different stage of the prototype, progressing from low -to mid- to high- fidelity. Participants did not engage with the same stage repeatedly. All testing sessions included a set of pre-prepared prompts, varying from 3 - 6 per session. These included guided tasks for engaging with the prototype, followed by post-testing questions designed to measure engagement and reflections.

3.5 Measures of effective engagement

Within the scope of this project, engagement was evaluated through participants' reflections written or verbal reflections following interaction with the prototype. Rather than relying solely on a statistical measure, the focus was on how participants described their emotional state, their experiences of navigating through the design, and the depths of their reflections. Physical cues were also recorded, such as the length of time spent on specific tasks or feature within the prototype.

The collected responses were organized thematically in order to identify design opportunities, potential concerns, and emotional patterns. Following an iterative design process, the collected data were repeatedly analyzed across the various stages of the research.

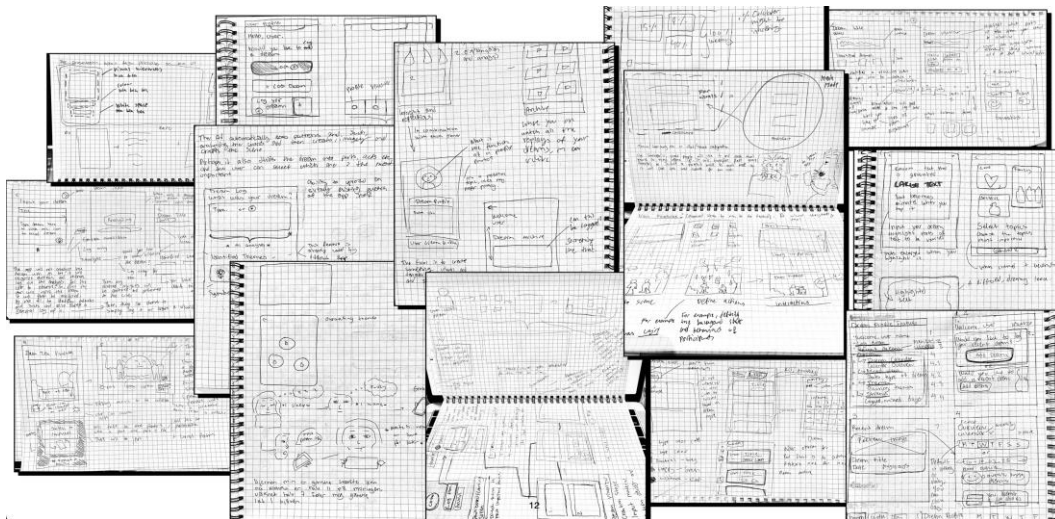


Figure 1 Sample of the thematic themes established from participant interviews and the questionnaire

Source: Researcher, 2025

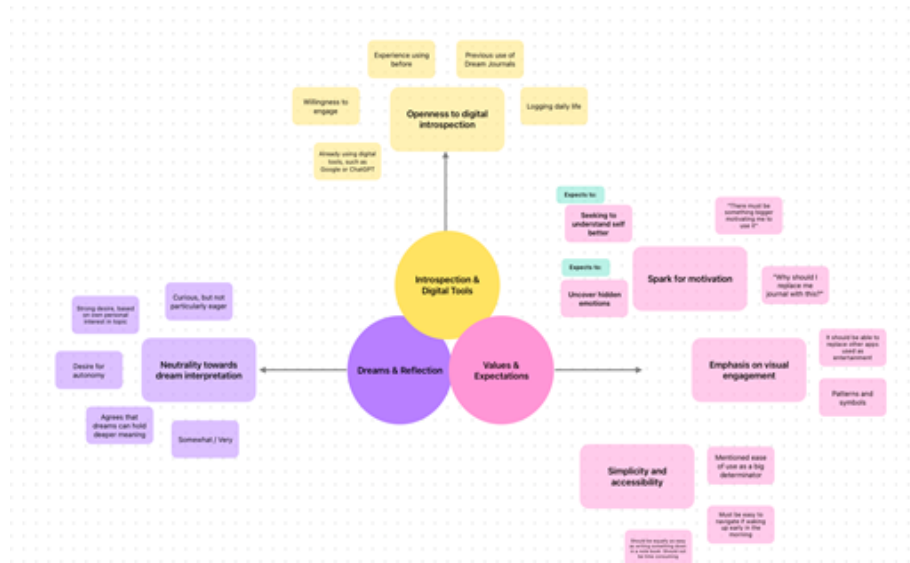
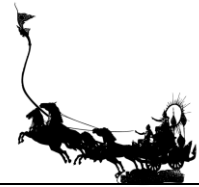


Figure 2 Concept development sketches
 Source: Researcher, 2025

4. Results and discussion 4.1 Design overview

The final design outcome was a prototype of an application titled *Inoro*, designed to transform recorded dream recollections into visual imagery. The application was intended to encourage users to observe and engage more deeply with their dreams and their content, extending beyond simple recall or memorization.

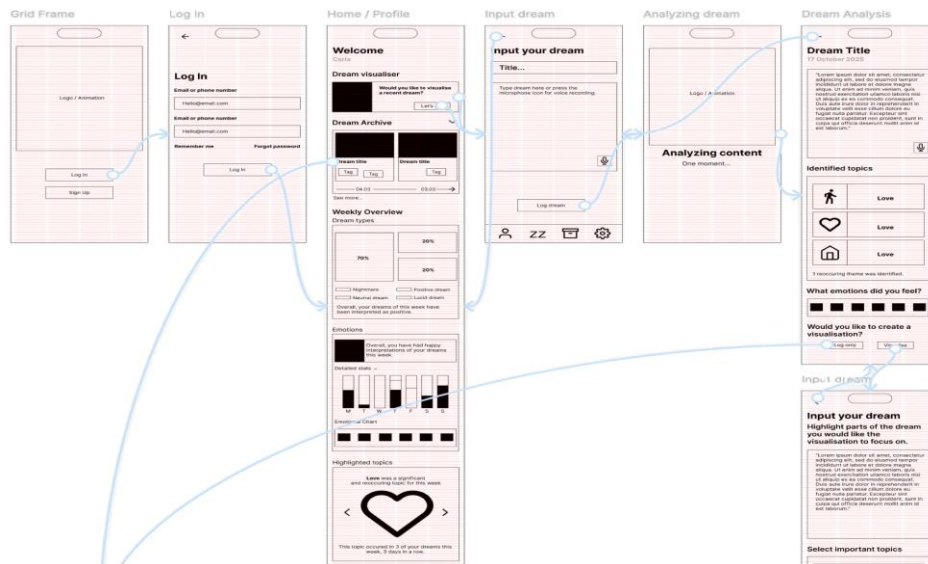
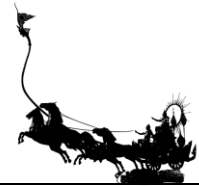


Figure 3 Screens of low fidelity prototype
 Source: Researcher, 2025



4.2 Summary of design features

Within UX design, a feature is defined as a specific function or component of an application that supports a particular user action or experience. *Inoro*, is structured around a sequence of selected features, each intended to support meaningful engagement with recorded dream content. The following summary outlines the main components of *Inoro* and their intended purposes. To provide insight into the design process, the accompanying figures display various iterations of the prototype across different stages of development. These iterations may reflect alternative design directions and do not represent the final design outcome.

Dream Log: The *Dream Log* enables users to record their dreams through written or voice input, which can later be used to generate a dream visualization. It was designed to support dream recall and encourage a consistent dream tracking habit. The feature is considered the foundation of the application, as it provides the content needed for users to engage with and reflect upon.

Dream Analysis: Following the logging of a dream, the Dream Analysis feature utilizes artificial intelligence to identify significant and recurring topics, themes or symbols appearing in the dream. The algorithm highlights elements that may stand out, such as specific locations, people or objects, encouraging further exploration for the themes to be further examined. Users can manually input or edit the content, which includes labelling ways the dream made them feel, add tags and notes. The purpose of the feature is to evoke a sense of pattern recognition across the dream timeline, drawing attention to areas of interest that may warrant further review.

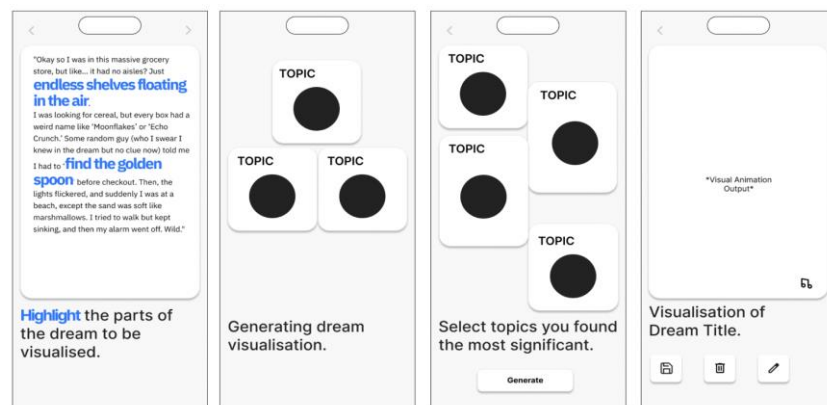


Figure 4 Medium fidelity wireframe of the home screen and dream log

Source: Researcher, 2025

Dream Visualizer: The *Dream Visualizer* turns a dream log into a visual representation. Users can highlight a selected line of text or topic or element identified by the Dream Analysis feature, to visualize. The purpose of this feature is to capture the emotional essence of the dream and relay it back to the user to facilitate reflection. Users can adjust the colour palette and level of abstraction to create an output that resonates with their personal interpretation of the dream experience. As the application's primary feature, the Dream Visualizer is intended to encourage reflection through visual engagement by externalizing internal experiences, thereby enabling users to better understand and evaluate them.

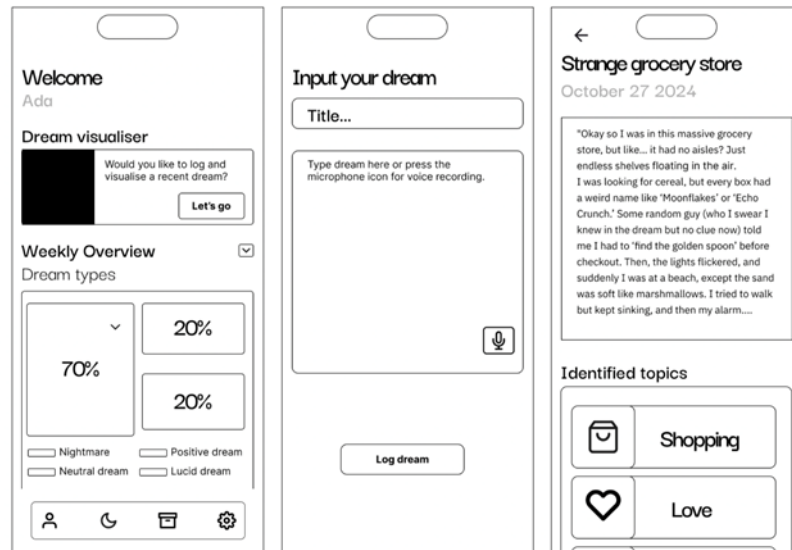


Figure 5 Medium fidelity wireframe of the visualization process
Source: Researcher, 2025

Dream Archive: The *Dream Archive* functions as the user’s digital dream library, providing access to their logged dreams and accompanying visualizations. Dreams can be filtered and sorted by tags, dates and identified themes. They are also available for viewing in a timeline-format, offering weekly and monthly overviews. The feature aims to promote long-term insights by encouraging users to make connections between past and present dream content. In doing so, it functions as a reflective window into the evolving unconscious.

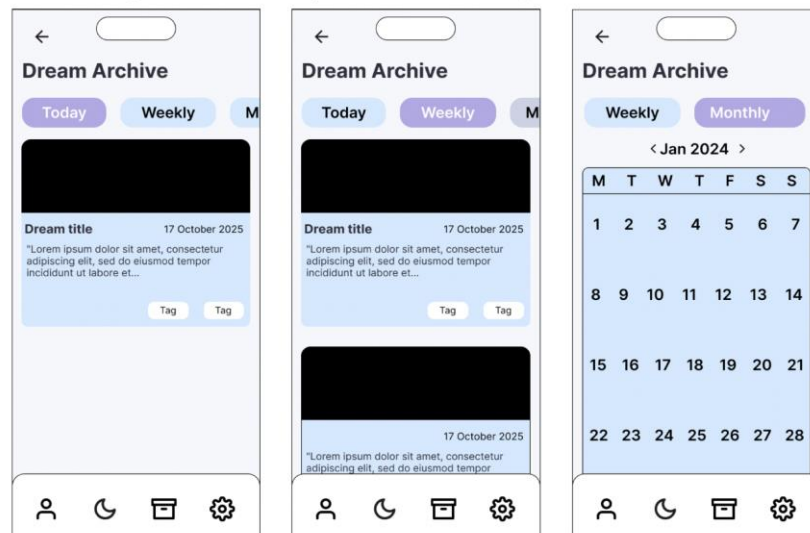
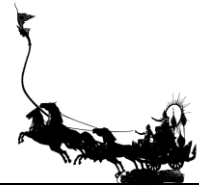


Figure 6 Medium fidelity wireframe of the archive
Source: Researcher, 2025



4.3 Translating dream descriptions into visual outputs

The results of the exploratory questionnaire showed varying levels of dream recall among the participants, while the majority expressed a belief that dreams hold emotional significance. Participants also displayed openness towards the use of digital wellness applications, as many reported prior experiences using such tools. There was an overall acceptance of the topic of dream exploration. However, the enthusiasm observed was moderate rather than strong; Participants with established introspective practices demonstrated the strongest enthusiasm towards the topic.

The first two user testing sessions focused on the usability of the application and the features proposed by the researcher, while the last two investigated visual expressions and designs to illustrate the dream content through the Dream Visualization feature. The feedback indicated a preference for abstraction and less stylistically prescriptive visuals. As part of the third session, participants were required to submit a brief description of a recent dream. To test the core function of the dream visualization, the researcher drew an illustration of the submitted dream description. Upon viewing the illustrations, some participants perceived them as inaccurate, which created a sense of distance from the dream. This response was particularly evident when the visual representation did not align with their personal recollections and emotions tied to the dreams. Several of the participants reported difficulty relating to visualization that depicted dream content too literally. They suggested that such representations felt distant rather than reflective of their inner experiences. In response to these insights, the selected visual direction emphasized abstraction in the presentation of dream content. Additionally, the design was informed by the fragmented, often incomplete and hazy nature of dreams, with the aim of mimicking the fog-like visuals that commonly arise when reflecting on them. The findings gathered from the exploratory process indicated that translating dream descriptions into interactive formats was perceived as viable. However, designing dream visuals that appealed collectively to participants remained a challenge. The accompanying figures reflect the creative process and does not represent the finalized visual outcome of the prototype.

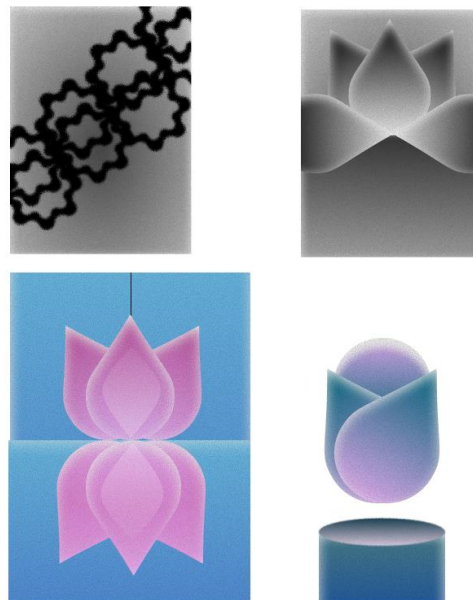


Figure 7 4 different visuals exploring how different dream types could be visualized
Source: Researcher, 2025

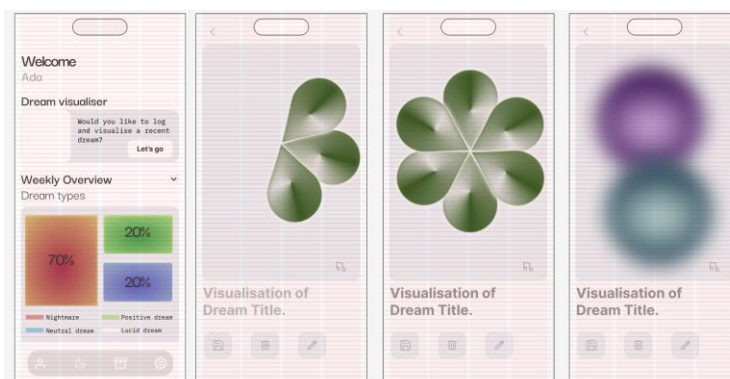


Figure 8 Visuals exploring how different dream types could be visualized within the interface
Source: Researcher, 2025

4.4 Reflective engagement through visual dream representation

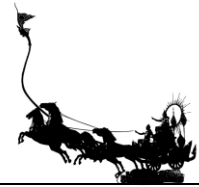
The second research objective investigated how *Inoro* as a whole could support reflective engagement through dream visualization and its accompanying features. Participants engaged with the prototype in various ways, highlighting common patterns.

Preparing and inputting notes for the Dream Log often led participants to pause and reflect on the details of the dream. Some demonstrated increased awareness of dream events as they described them aloud, ensuring that relevant details were included. For others, however, the process was swift and appeared to involve a lower level of reflection. The observations revealed varying levels of engagement across the sample rather than a uniform level of response. Although long-term usage of the “Dream Archive” was not tested, the feature’s core idea was explored through an exercise in which participants were asked to record their dreams for one week prior to the user test. Upon reviewing the notes collectively, one participant expressed a positive response to viewing an overview of their weekly dream insight. Another participant identified a connection between dream content and events in waking life. When presented with the idea of the Dream Analysis feature, feedback was generally positive, and participants were open to the idea of seeing elements of their dream placed in a different context, highlighting information that may otherwise have been overlooked. Participants also expressed an appreciation for the way the feature focused on presenting information rather than telling users how to feel. This emphasized the importance of the application feeling as though it was guiding users towards engagement rather than imposing interpretation or meaning. One participant expressed interest in understanding the psychological meaning behind the identified elements, which was beyond the scope of the research.

The responses to the prototype suggested that presenting users with their dream content in a digital and visual format evoked reflection. Feedback also highlighted that engagement levels depended on the amount of effort required to use the application, and that ease of use was particularly valued.

5. Conclusion

The findings of this pilot study suggested that integrating dream recall and visualization within a digital application can support introspective engagement among Generation Z users. Rather than relying on a preset, structured interpretation, participants responded more positively to an interface that balanced guidance with autonomy, allowing them to relate the content to their own personal recollections. Reflection appeared more likely when the content was presented in an open-ended manner, and ease of use was identified as a key priority. For the application to be considered worthwhile in the long term, the process of logging and reviewing dream content needed to feel straightforward and low-effort rather than time-consuming. The findings underscore the importance of designing tools that support emotional engagement without imposing preset rules.



However, several limitations remain. The prototype has not undergone long-term evaluation with a larger and more diverse sample. Future research could investigate whether sustained interaction with the application supports emotional regulation, creative engagement or enhanced self-understanding. From a design perspective, further empirical testing would be required to refine the visual direction in response to the diverse preferences expressed during user testing.

In conclusion, the findings indicate that Generation Z users demonstrate openness towards engaging with digital tools as a means of emotional exploration.

6. Acknowledgements

The researcher extends sincere gratitude to the College of Design at Rangsit University and the project advisors for their invaluable guidance and support. Appreciation is also extended to all participants who generously shared their insights and perspectives throughout the study.

7. References

- Naluri. (n.d.). *Mental Health Trends in Asia 2024: Gen Z at highest risk*. Retrieved December 22, 2025 from <https://www.naluri.life/news/2024-mental-health-asia-gen-z-most-at-risk>
- Office of the National Economic and Social Development Council. (2025, August 25). *Thailand's social outlook of Q2/2025*. https://www.nesdc.go.th/wordpress/wp-content/uploads/2025/08/3.1-Press-Q2_2568-ENG-27.08-09.41.pdf
- Jung, C. G. (1954). *The Collected Works of C.G Jung: Vol. 17. Development of Personality* (R. F. C. Hull, Trans). Princeton University Press. (Original work published 1946)
- Jung, C. G. (1954). *The Collected Works of C.G Jung: Vol. 18. The symbolic life* (R. F. C. Hull, Trans). Princeton University Press. (Original work published 1935)
- Oxford English Dictionary. (n.d.). *Generation Z, N. Meaning, etymology and more*. Retrieved November 1, 2025, from https://www.oed.com/dictionary/generation-z_n?tab=meaning_and_use&tl=true#1286796960
- Interaction Design Foundation - IxDF. (2016). *What is User Experience Design?*. Retrieved November 1, 2025 from <https://www.interaction-design.org/literature/topics/ux-design>
- Interaction Design Foundation - IxDF. (2021). *What is Human-Centered Design (HCD)?*. Retrieved November 1, 2025, from <https://www.interaction-design.org/literature/topics/human-centereddesign>