# BUILDING MENTAL HEALTH RESOURCES: THE HUMAN-CENTERED INTERACTION DESIGN IMPLEMENTED IN me_HeLi-D PLATFORM

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This paper analyzes user feedback on the Moodle-based digital mental health literacy platform developed under the Erasmus+ project "me_HeLi-D: Mental Health Literacy and Diversity. Enhancing Mental Health and Resilience through digital Resources for Youth" (me_HeLi-D). The platform aimed to provide interactive mental health literacy content, and supported by user feedback contribute for engagement and improve learning outcomes. A mixed-methods approach, combining structured surveys and open-ended comments, was used to collect data on user experiences. Feedback was systematically categorized into general comments, module-specific critiques, and technical issues. Analysis helped identify recurring issues related to navigation, content accessibility, and technical difficulties with multimedia components, particularly with the multimedia functionality. Inconsistencies like the lack of availability for a "back to course" option confused users, and duplicated titles in some modules created additional navigational obstacles. Technical issues, such as the multimedia functionality, made content engagement difficult. These findings underscore the critical importance of user-centered design principles in developing effective digital learning environments. The study highlights the need for rigorous testing across diverse devices and operating systems to ensure accessibility and functionality. Furthermore, the feedback emphasizes the demand for more interactive learning experiences, suggesting that incorporating active learning strategies can enhance engagement and knowledge retention. Recommendations for platform revisions include addressing navigation inconsistencies, improving multimedia functionality, and incorporating interactive elements to promote active learning. This study contributes to the growing body of knowledge on best practices for designing and evaluating digital mental health literacy interventions and emphasizes the iterative nature of development based on continuous user feedback.

**Keywords:** mental health literacy (MHL), digital mental health literacy (DMHL), information technology (IT), interactive digital resources, human-centered design, H5P, Moodle

**CCS Concepts:**

• Human-centered computing∼Interaction design∼Empirical studies in interaction design (High Relevance)

1. Introduction

The Erasmus+ project "me_HeLi-D: Mental Health Literacy and Diversity. Enhancing Mental Health and Resilience through digital Resources for Youth" (me_HeLi-D) [7] recognized the potential of digital tools to enhance 'mental health literacy' [4] among young people. The me_HeLi-D project aimed to develop and implement a digital mental health literacy platform using Moodle, a widely used open-source learning management system [2]. Moodle provides a flexible framework for creating interactive learning environments, allowing for the integration of various multimedia elements and facilitating communication between learners and educators. The me_HeLi-D platform was designed to provide young people with access to engaging and informative content related to mental health, covering topics such as common mental health conditions, recognizing symptoms, seeking help, and promoting resilience. The platform aimed to not only increase knowledge about mental health but also to foster positive attitudes towards mental health and reduce stigma associated with mental illness.

The rapid advancement of digital technologies has revolutionized various aspects of modern life, including healthcare and education. This so-called digital transformation opened up new horizons for addressing critical public health challenges, such as mental health literacy, which has an additional importance particularly among youth. Mental health literacy, defined as the knowledge and beliefs about mental disorders which aid in their recognition, management, or prevention [1], is a crucial factor in promoting help-seeking behavior, reducing stigma, and improving overall mental well-being [10]. Young people, facing unique developmental challenges and often experiencing the onset of mental health conditions during adolescence or young adulthood [6], represent a key target group for mental health literacy interventions. However, traditional approaches to mental health education may not always reach or effectively engage this population. Digital platforms, with their accessibility, flexibility, and potential for interactive learning experiences, offer a promising alternative and supplement to traditional methods.

The me_HeLi-D platform is designed to support digital learning through interactive modules. It is organized into thematic units, each containing multimedia content, self-assessment tools, and discussion forums. The interaction design follows principles of intuitive navigation, responsive feedback, and accessibility compliance. Users engage with curated content including instructional videos, annotated readings, and peer-reviewed assignments.

The development of the me_HeLi-D platform was grounded in the principles of human-centered computing and interaction design principles [9]. The user-centered design emphasizes on importance of understanding the needs, preferences, and experiences of the target users throughout the design and development process. This approach recognizes that technology is most effective when it is tailored to the specific needs and characteristics of the individuals who will be using it. In the context of digital mental health literacy interventions, user-centered design is particularly

critical, as it can influence the acceptability, usability, and ultimately, the effectiveness of the intervention [3]. By involving young people in the development process, the me_HeLi-D project sought to create a platform that was relevant, engaging, and accessible to its target audience.

While the me_HeLi-D platform held great promise for enhancing mental health literacy, the project team recognized the importance of evaluating the platform's effectiveness and identifying areas for improvement [11]. User feedback plays a crucial role in formative evaluation, providing valuable insights into user experiences and informing iterative design processes [8]. Collecting and analyzing user feedback allows developers to identify potential usability issues, technical problems, and areas where the content or design can be enhanced to better meet the needs of the target audience [5]. This iterative approach to development, where feedback is continuously gathered and incorporated into platform revisions, is essential for creating effective and sustainable digital health interventions [7].

This paper presents an analysis of user feedback received on the me_HeLi-D digital mental health literacy platform. The study employed a mixed-methods approach, combining structured surveys and open-ended comments to gather rich data on user experiences. The feedback was systematically categorized and analyzed to identify recurring themes and specific suggestions for improvement.

This study is guided by the following research questions:

- Which design, and technical aspects hinder or facilitate engagement and learning in me_HeLi-D platform?

  and

- How can the me_HeLi-D platform be improved to enhance learning effectiveness?

The findings of this study will provide valuable insights for the me_HeLi-D project team and other developers working in the field of digital mental health literacy. Furthermore, this research underscores the importance of user-centered design and continuous feedback in the development of effective digital learning environments. The ultimate goal is to create digital resources that empower young people to improve their mental health literacy and promote their overall well-being [7].

## 2. Methodology

The study employed a mixed-methods approach to investigate user feedback on the me_HeLi-D digital mental health literacy platform. Mixed-methods research, combining both qualitative and quantitative data collection and analysis techniques, allows a wider understanding of complex user expectations than either approach alone. In this context, qualitative data provided rich insights into the nuances of user experiences, while quantitative data helped to identify patterns and trends in user feedback. This combined approach facilitated a deeper understanding of the platform's strengths and weaknesses and informed actionable recommendations for improvement.

## 2.1. Participants

Most of the participants had solid prior experience with mental health resources, but limited tech comprehensibility. They were formed by the work groups engaged in preparing the pilot deployment. Precisely, the participants were 22 adults aged 21–35, with a gender distribution of 18 females and 4 males. Ethical considerations were paramount throughout the study. All participants provided informed consent before participating in the study. Participants were assured of anonymity and confidentiality, and all data were stored securely.

## 2.2. Data collection

As mentioned, data were collected using a combination of structured surveys and open-ended feedback prompts. This approach allowed for the collection of both quantifiable data and rich qualitative insights into user experiences.

**Structured surveys.** The structured survey consisted of the specific aspects of the platform it assesses, namely, navigation, content, design, technical functionality. All modules, and all activities were on the survey. For the responses a simple scale was used providing multiple choice. The survey included user satisfaction with the platform's navigation, content relevance, and technical performance. Items were rated on a 3-point scale ranging from 'Disagree', 'Neutral' to 'Agree'. Examples of survey questions included: 'The platform was easy to navigate' and 'The content was relevant to my needs'. The survey was administered online using direct access to a spreadsheet.

**Open-ended feedback.** In addition to the structured survey, participants were provided with open-ended feedback prompts to elicit more detailed information about their experiences with the platform. Participants were asked to provide open-ended feedback on all aspects of the platform. These open-ended responses allowed participants to express their thoughts and feelings about the platform in their own words, providing valuable contextual information.

## 2.3. Data analysis

The data collected through the structured surveys were analyzed using descriptive statistics. This analysis provided an overview of user ratings and identified areas of general satisfaction or dissatisfaction. The qualitative data from the open-ended feedback prompts were analyzed by subject. This analysis was used for identifying, organizing, and interpreting patterns of meaning within qualitative data. Finally, both the qualitative and quantitative findings were integrated to provide a comprehensive understanding of user experiences with the me_HeLi-D platform.

## 3. Results

This section presents the findings from the analysis of user feedback on the me_HeLi-D digital mental health literacy platform. The results are organized ac-

cording to the main themes that emerged from the thematic analysis of the open-ended feedback and are supplemented by quantitative data from the structured surveys where relevant. The themes reflect the key areas of user experience with the platform, highlighting both strengths and weaknesses.

### 3.1. NAVIGATION AND USER INTERFACE

A significant portion of user feedback focused on the platform's navigation and user interface. While some participants found the platform easy to navigate, a substantial percentage reported difficulties in finding information and moving between different sections (see Table 1).

Table 1

Navigation and user interface-related feedback

| Navigation challenge | Percentage of users reporting issue | Example user comment | Suggested improvement |
|---|---|---|---|
| Inconsistent "Back" button functionality | 82% | "Sometimes the 'back' button took me to the previous page, other times it disappeared." | Implement a consistent 'back' button across all modules. |
| Difficulty finding specific modules | 68% | "I couldn't easily find the module on stress management. The menu was confusing." | Improve the organization and labeling of the main menu. |
| Confusing module titles | 45% | "The titles of some modules were unclear and didn't tell me what the content was about." | Use more descriptive and user-friendly module titles. |
| Lack of visual tips | 23% | "I felt lost navigating within some modules. There weren't clear visual tips to guide me." | Add visual tips, such as progress bars to show users their location. |
| Mobile navigation issues (e.g., menu not displaying correctly) | 9% | "The menu was difficult to use on my phone. It wouldn't expand properly." | Optimize the mobile navigation for different screen sizes. |

*Inconsistent navigation.* A recurring issue was the inconsistency in navigation controls across different modules. For instance, the "back to course" button (see Figure 1, lower left corner) was not available on all pages, leading to user frustration and confusion. One participant stated, 'I got lost several times because the back button disappeared, and I had to click through multiple pages to find my way back.' This inconsistency disrupted the user flow and made it difficult for participants to orient themselves within the platform.

*Messy layout.* Some users found the layout of certain modules to be messy. Several participants commented on the excessive amount of text and visual elements on some pages, making it difficult to focus on the key information. This visual overload negatively impacted the user experience and potentially hindered information processing.

Table 1 and Figure 2 summarize the most commonly reported navigation challenges. The majority of users (82%) experienced inconsistent behavior of the 'Back'
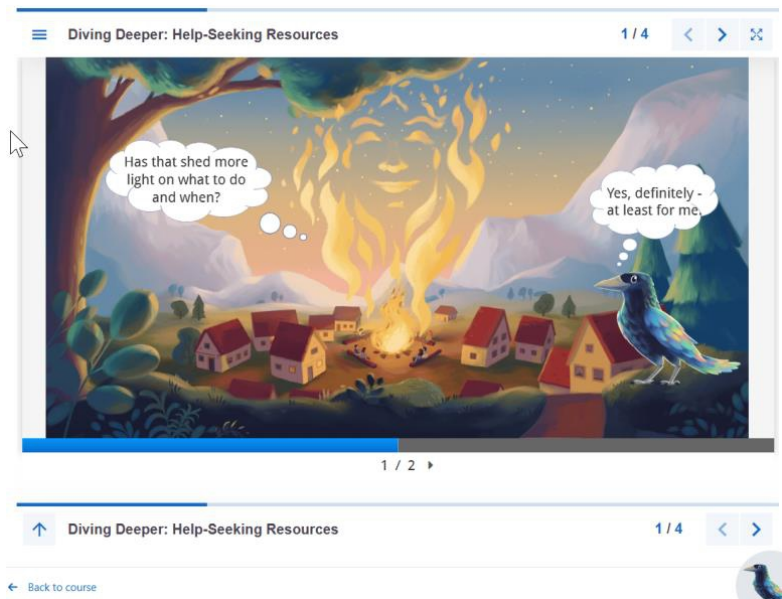
Figure 1. H5P Interactive Book Activity "H4 | Diving deeper: Help-seeking Resources"
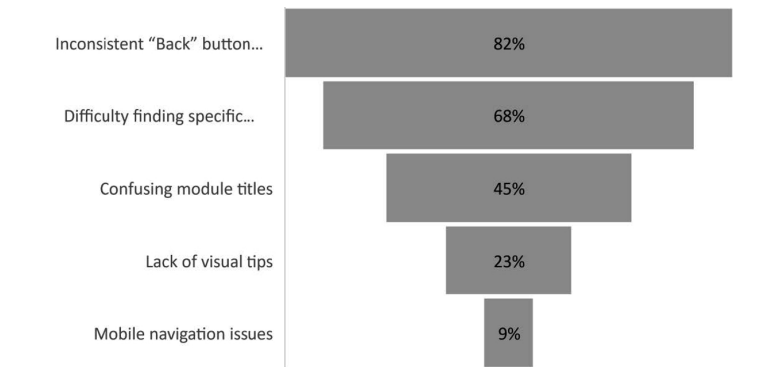


Figure 2. Navigation challenge

button, which disrupted their workflow. Additionally, 68% found it difficult to locate specific modules, citing unclear menu organization. These findings highlight the need for improved interface consistency and clearer content labeling.

### 3.2. Content and features

Feedback regarding the platform's content and features was varied. While many participants appreciated the informative nature of the content, some suggestions were made for improvement (see Table 2).

Table 2

Content and features-related feedback

| Content theme | Percentage of positive comments | Percentage of negative comments | Example quote (Positive) | Example quote (Negative) |
|---|---|---|---|---|
| Information on anxiety | 68% | 23% | "The information on anxiety was very helpful and clear." | "I felt the section on anxiety could have been more detailed." |
| Coping strategies | 82% | 5% | "I appreciated the practical coping strategies provided." | "Some of the coping strategies were not relevant to me." |
| Recognizing mental health issues | 91% | 9% | "The platform helped me better understand mental health." | "I already knew most of the information presented." |

*Content relevance.* The majority of participants found the content to be relevant and informative. For example: Many participants referred to the platform for providing valuable information on mental health topics that were absolutely relevant.

*Interactive elements.* While the platform included some interactive elements, several participants suggested incorporating more interactive activities to enhance engagement. Participants suggested including quizzes, interactive scenarios, and videos to make the learning experience more engaging.

Table 2 presents user sentiment toward key content themes. Feedback was overwhelmingly positive (Figure 3), particularly regarding coping strategies and mental health awareness. However, 23% of users felt the anxiety section lacked depth, suggesting an opportunity for content expansion. Also, the majority of respondents expressed positive feedback across all content themes, with "Recognizing Mental Health Issues" receiving the highest approval (91%). Negative feedback was minimal, though some users desired more depth in the 'Information on Anxiety' section.
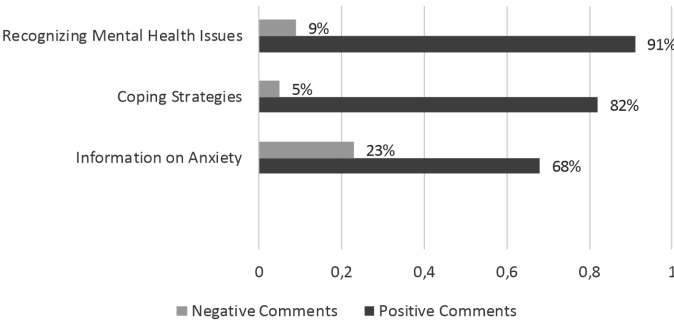


Figure 3. Content and features-related feedback

### 3.3. Technical issues

*Multimedia functionality.* Technical issues with multimedia components, particularly video playback, were frequently reported (68%). A significant percentage of participants reported problems with video playback, with some experiencing audio-only playback or buffering issues.

Technical issues, beyond those related to multimedia, also emerged as a theme in the user feedback (see Figure 4).
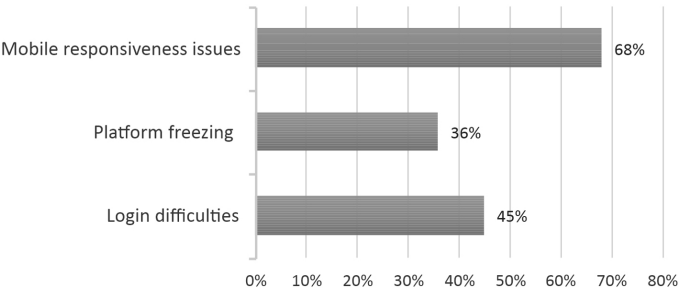


Figure 4. Technical issues-related feedback

*Platform stability.* Some participants reported experiencing occasional platform instability. Participants mentioned experiencing error messages or being logged out unexpectedly. Also reported "The platform froze a couple of times, and I lost my progress." These technical issues disrupted the learning process and negatively impacted the overall user satisfaction.

*Login issues.* Difficulties with the login process were also reported by some users. Some participants reported difficulties creating accounts or logging in to the platform. The smooth and issues-free login process is essential for ensuring user access to the platform.

Figure 4 summarizes the technical issues reported by users. Video playback and mobile responsiveness were the most common problems, each cited by 68% of respondents. These findings suggest that multimedia delivery and mobile compatibility are critical areas for platform improvement.

### 3.4. Overall user experience

Despite the challenges mentioned above, many participants expressed a positive overall impression of the me_HeLi-D platform. Many participants acknowledged the platform's potential as a valuable resource for mental health information. One participant summarized the overall sentiment by stating, "Despite some technical issues, I think this platform has the potential to be very helpful for young people." However, the feedback clearly highlighted areas where improvements are needed to enhance user experience and maximize the platform's effectiveness (see Table 3).

Table 3 and Figure 5 present user-suggested improvements to the HeLi-D platform. The vast majority (91%) requested more interactive activities, such as quizzes

Table 3

Overall user experience-related feedback

| Suggested improvement | Percentage of suggestions | Example user suggestion |
|---|---|---|
| More interactive activities | 91% | "Include more quizzes and interactive exercises." |
| Improved navigation | 68% | "Make the navigation more consistent across all modules." |
| Enhanced multimedia content | 45% | "Add more videos and multimedia examples." |
| Mobile optimization | 36% | "Improve the platform's responsiveness on mobile devices." |
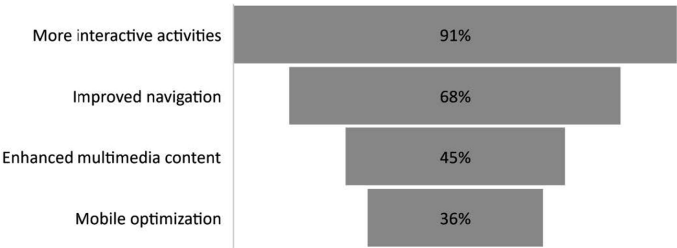


Figure 5. Suggested improvement

and exercises. Navigation enhancements (68%) and multimedia content expansion (45%) were also common themes. These insights highlight key areas for future development to improve user engagement and satisfaction.

## 4. DISCUSSION

The results of this study offer valuable insights into user experiences with the me_HeLi-D digital mental health literacy platform, highlighting both its strengths and areas requiring improvement. The recurring theme of navigation difficulties underscores the critical importance of user-centered design specially in the specific area of educational platforms. Inconsistent navigation, as evidenced by the issue related to the availability of the "back to course" button and confusing module labeling, disrupts user flow and creates dissatisfaction. When users struggle to navigate the platform, their cognitive resources are diverted from learning the content to simply trying to find their way around, undervaluing the effect of knowledge acquisition.

The technical issues reported, particularly with video playback and mobile responsiveness, highlight the challenges related to ensuring accessibility and functionality across diverse devices that can support various users. In an educational platform, the users may have varying levels of access to technology and different device access and/or preference. Thus, it is of crucial importance to test and optimize the platform's performance across a range of devices and operating systems. The difficulties

encountered with video playback not only limit access to multimedia content but also raise concerns about equity and inclusivity. If some users are unable to fully engage with the platform's content due to technical limitations, it can exacerbate existing disparities in access to mental health resources.

The feedback regarding content and features suggests that while users appreciated the relevance and informativeness of the content, they clearly state that they desired a more interactive learning experience. Passive consumption of information, such as simply reading text, is less effective than interactive activities that encourage learners to actively process and apply the material. Incorporating more interactive elements, such as quizzes, scenarios, and gamified activities, could significantly enhance user engagement and learning outcomes.

The study also revealed the importance of addressing technical issues beyond navigation and multimedia. Reports of platform instability and login difficulties point to the need for robust technical infrastructure and ongoing maintenance. A seamless and reliable user experience is essential for maintaining user motivation and encouraging continued engagement with the platform. If users encounter frequent technical problems, they are likely to become discouraged and abandon the platform altogether.

This study has some limitations. The sample size, 22 participants so far, may limit the generalizability of the findings to a broader population of young people. The developed environment is intended for young people (15–24 years old), but the testing was carried out with adults (21–35 years old) who had solid knowledge on the field, so this affects the final results of the study. Furthermore, the study relied on self-reported feedback, which may be subject to biases. Thus, the research is ongoing and further more results could incorporate more objective measures of user behavior and provide a more comprehensive understanding of user engagement. Despite these limitations, this study provides valuable insights into user experiences with the me_HeLi-D platform and offers practical recommendations for improvement.

## 5. Recommendations

Based on the findings of this study, several key recommendations can be made to enhance the me_HeLi-D digital mental health literacy platform and improve user engagement and learning outcomes.

1. *Enhance navigation and user interface.*

   - Implement consistent navigation. Ensure that navigation controls, such as the "back to course" button, are consistently available across all modules. This will prevent user confusion and improve overall platform usability.

   - Improve menu organization. Reorganize the main menu to make it easier for users to find specific modules. Consider using clear and descriptive labels and grouping related modules together.

- Provide visual tips. Incorporate visual tips, such as progress bars or breadcrumb trails, to help users track their progress and orient themselves within the platform.

2. *Improve technical functionality.*

- Thorough testing. Conduct rigorous testing of the platform across a range of devices and operating systems to identify and resolve any technical issues, particularly those related to video playback and mobile responsiveness. Multimedia optimization. Optimize multimedia content for different devices and internet connections to ensure smooth playback and accessibility for all users.
- Platform stability. Address any reported issues with platform instability and login difficulties to ensure a seamless and reliable user experience.

3. *Enhance content and features.*

- Incorporate interactive elements. Integrate more interactive activities, such as quizzes, scenarios, and gamified challenges, to promote active learning and enhance user engagement.
- Diversify content formats. Explore the use of different content formats, such as videos, infographics, and podcasts, to cater to diverse learning styles and preferences.
- Regularly update content. Ensure that the platform's content is regularly updated to reflect the latest research and best practices in mental health.

By implementing these recommendations, the me_HeLi-D platform can be significantly enhanced to provide a more engaging, effective, and accessible learning experience for young people seeking to improve their mental health literacy. The iterative nature of digital platform development necessitates a commitment to continuous evaluation and improvement, grounded in the principles of user-centered design, to maximize the platform's impact and reach.

## 6. Conclusions

This study provides valuable insights into user experiences interaction design with a digital mental health literacy platform, highlighting the crucial role of user feedback in the development of effective educational technology. The findings underscore the importance of prioritizing human-centered computing and interaction design principles to ensure platform usability, accessibility, and engagement. The identified navigation inconsistencies, technical issues with multimedia, and requests for more interactive content point to specific areas requiring attention. The proper addressing of those issues will be critical for maximizing the platform's potential to improve mental health literacy among youth. The study reinforces the iterative nature of digital platform development, emphasizing the need for continuous user feedback and ongoing evaluation. Future iterations of the me_HeLi-D platform should

prioritize the recommendations outlined, including streamlining navigation, thoroughly testing multimedia functionality across various devices, and incorporating interactive elements to promote active learning. Further research could explore the long-term impact of the platform on mental health knowledge and behavior, as well as investigate the effectiveness of different interactive learning strategies in this context. By embracing user-centered design and prioritizing continuous improvement, digital mental health platforms can become powerful tools for promoting well-being and empowering individuals to manage their mental health.

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