

FinLearn: An Online Finance Learning Platform

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Abstract—The FinLearn is an online learning platform which developed to improve financial literacy among young adults in Malaysia. This approach implied self-paced learning on its online platform consists of progress tracking and personalization for users. Users can gain access to different courses and quizzes which allows them to learn more about personal finance topics such as debt management, savings, and more. The online learning platform is made available on the web to give easy access to the users from various backgrounds and locations. Programming languages used in this project include PHP, HTML, CSS, and JS with the aid of development tools such as Visual Studio, Code, Laragon, Github, Microsoft 365, and Firefox via MySQL database. Besides, FinLearn is expected to benefit users by enabling them to keep engaged in finance learning digitally interactively, as well as allowing them to track their progress and adjust their learning strategies. Hence, this abstract is focus in outlining the online learning platform's functions and emphasizing the roles and benefits of FinLearn in improving financial literacy among Malaysian young adults.

Keyword—Finance; Online Learning; Malaysia; Young Adult;

I. INTRODUCTION

The introduction and project background of this document underscore the critical importance of financial literacy in Malaysia, a concern highlighted by the "Malaysia National Strategy for Financial Literacy 2019-2023 [1]." This strategy aims to enhance the financial well-being of Malaysians through improved financial literacy, promoting responsible financial behaviors and attitudes. This initiative responds to findings from the "Bank Negara Malaysia's Financial Capability and Inclusion Demand Side Survey 2018," which identified key areas for improvement among Malaysians, including financial literacy, saving and budgeting habits, preparedness for unforeseen life events, and retirement planning [2].

FinLearn, an online learning platform specifically designed to enhance financial literacy among Malaysian youth, exemplifies this approach. It aims to revolutionize financial education by making it more engaging, relevant, and accessible. Through dynamic modules on real-world financial topics, interactive quizzes, virtual currency and rewards, challenges, and social interactions, FinLearn seeks to equip the youth with the knowledge and skills necessary for financial security. The platform's unique features not only facilitate learning in an enjoyable manner but also promise to empower young Malaysians to make prudent financial decisions, thereby contributing to their

financial confidence and security in the future. This initiative holds great promise in addressing the pressing need for improved financial literacy, particularly among the youth, by leveraging the benefits of digital learning to foster a financially savvy generation.

A. Problem Statement and Objectives

Financial literacy among young adults is a critical issue. Several significant indicators illustrate the severity of the situation. According to an Asian Financial Centre (AFC) poll of persons aged 20 to 33, 75 percent have at least one long-term loan, with 37 percent having more than one (Selvaraj, 2023). Furthermore, there were 10,378 young Malaysians declared bankrupt between 2018 and September 2022. The AFC study also looked at how financial literacy and overall spending are related (Selvaraj, 2023). According to the survey, those with little financial literacy spent 84 percent of their income and saved or invested the remainder. Those with sound financial awareness, however, only spent 64 percent of their income, saving or investing the remainder. There is convincing evidence that financial behaviour and knowledge are strongly correlated. According to figures from the Insolvency Department website, almost 20 percent of the 47,929 people declared bankrupt during the time were under the age of 34; 10,138 were between the ages of 25 and 34; and those under 25 accounted for 240 bankruptcy cases [3]. Therefore there is a serious issue with Malaysians' inadequate financial literacy, and game-based learning appears to be a potential solution.

Therefore, the objectives of this study are to study the level of finance literacy among young adults, create an online learning platform to improve the finance literacy of young adults, and test the effectiveness of online learning platform in finance literacy.

B. Research Questions

The research questions of the study will be focusing on what is the level of finance literacy among young adults, does an online learning platform improve the finance literacy of young adults, and what is the level of finance literacy among young adults?

II. LITERATURE REVIEW

A. Online Learning Platform

Online learning platforms, also known as e-learning, utilize the internet and digital content to facilitate education worldwide. They emerged as a vital tool, particularly during the COVID-19 pandemic, when traditional schooling faced disruptions due to closures and distancing measures. These platforms became essential for maintaining educational continuity, with institutions and individuals turning to them for learning and upskilling opportunities. Their accessibility and flexibility proved beneficial, especially for remote learners or those with mobility restrictions. Advancements in technology further enhanced these platforms, making them more interactive and personalized, leading to increased investment and innovation in their development [4] [5].

It offers several advantages. Firstly, they serve as centralized hubs for various learning materials, including videos, interactive modules, quizzes, and e-books. Users can learn at their own pace and convenience, thanks to flexible scheduling options. Moreover, these platforms incorporate interactive elements such as gamification, simulations, and virtual labs to keep learners engaged and enhance the effectiveness of learning. Some platforms even employ algorithms to personalize the learning experience for each user, analyzing their progress and adjusting content accordingly. Additionally, these platforms facilitate communication and collaboration through forums, discussion boards, and chat rooms, allowing learners to connect with peers and instructors, share insights, and engage in collaborative activities. Lastly, they provide assessment tools like quizzes and assignments, offering immediate feedback to help users track their progress and adjust their learning strategies accordingly.

B. Existing Online Learning Platform

1) *Coursera*: Coursera, established in 2012, is a leading online learning platform offering a wide array of educational content globally. Partnering with prestigious universities and companies, it provides high-quality courses across various disciplines. These courses encompass video lectures by renowned experts, interactive activities like quizzes and projects, and specializations aimed at equipping learners with specific skills. Coursera facilitates upskilling and reskilling, making education accessible and affordable, fostering social mobility. Moreover, businesses leverage Coursera to train employees and stay competitive amidst rapid changes.

2) *Udemy*: Udemy is a unique online learning platform with an open marketplace model, contrasting with Coursera's curated content. It allows anyone to become an instructor and offer courses on a wide range of subjects, surpassing 200,000 courses. The quality of content varies as independent instructors create courses, offering video lectures, quizzes, and assignments. Instructors set prices independently, often resulting in lower costs, and Udemy frequently offers discounts, enhancing affordability.

3) *Quizlet*: Quizlet, though not a traditional online learning platform, holds significance in education by focusing on active learning through flashcards and interactive exercises. Its core function involves creating customized flashcards with multimedia elements. Quizlet offers various learning modes to test knowledge, including "Match," "Learn," "Test," and "Gravity," making studying engaging and dynamic. Additionally, it incorporates gamification elements like points and leaderboards to enhance motivation and consistency in learning.

III. METHODOLOGY

A. Research Methodology Structure

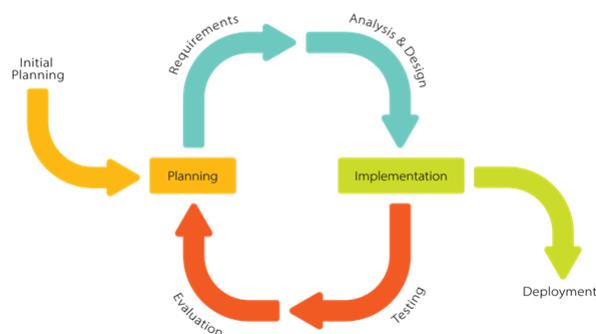


Fig. 1. Iterative Incremental Methodology

1) *Planning*: The Planning Phase is a crucial stage in the Iterative Model of software development, where the foundation for the entire project is laid out. This phase is characterized by a systematic approach to understanding the project's objectives, gathering requirements, and designing the software solution.

2) *Requirements*: The first step in the Planning Phase involves gathering and documenting the software requirements in Software Requirements Specification (SRS). This includes identifying the needs and expectations of the stakeholders, such as clients, end-users, and other relevant parties. Requirements can be functional (what the software should do) or non-functional (how it should perform).

3) *Analysis and Design*: Once the requirements are collected, they are analyzed to ensure that they are clear, complete, and consistent. This phase involves refining the requirements, identifying any potential conflicts or ambiguities, and prioritizing them based on their importance. In the Design phase, the high-level architecture and system structure are defined. This includes creating a detailed system design, specifying how different components will interact, and deciding on the technology stack to be used. The design phase also involves creating prototypes and mock-ups to visualize the final product.

4) *Implementation*: After the design is complete, the actual coding and development of the software take place. Developers write the source code, following the design specifications and

adhering to coding standards. This phase involves creating modules, classes, functions, and integrating them into a working system.

5) *Testing*: Testing is a critical part of the implementation phase. It involves verifying that the software meets the specified requirements and functions correctly. Different levels of testing, such as unit testing, integration testing, and system testing, are performed to identify and rectify defects or bugs.

6) *Evaluation*: In an iterative model, evaluation is an ongoing process throughout the development lifecycle. After each iteration, the software is evaluated to assess its performance, functionality, and adherence to the project goals. Feedback from stakeholders, end-users, and testers is collected and used to make improvements and refinements in subsequent iterations.

7) *Deployment*: The Deployment Phase is a critical step in the software development lifecycle, marking the transition from development and testing to the actual release and use of the software in a production environment. This phase involves the careful planning and execution of activities to ensure a smooth and successful deployment of the software to end-users or customers

IV. PROTOTYPE DEVELOPMENT

Figma was used to prototyping the website's User Interface (UI). Once the design was decided and finalized, the final product was developed using Microsoft Visual Studio for users.

A. Hardware Requirement

The following table shows the hardware requirements for the online learning platform development.

Hardware
Lenovo IdeaPad 3
CPU: Intel core i5
RAM: 20GB
SSD: 128 GB
OS: Windows 10

B. Software Requirement

The following table shows the software requirements for the online learning platform development.

Software Requirements	
Programming Language	PHP HTML CSS JS
Development Tools	Visual Studio Code Laragon Github Microsoft 365 Firefox
Database	MySQL

C. Prototype Design

User Interface

Figure 2-8 shows all the web pages designed for FinLearns user. The theme colors of the online learning platform is purple and white. Purple evokes feelings of wisdom and calmness, ideal for learning. It also hints at creativity, potentially useful depending on the content. White brings a sense of cleanliness, professionalism, and trust, important for any learning platform. Together, they create a professional yet inviting atmosphere. Ultimately, purple and white are solid choices that can promote a positive learning experience.

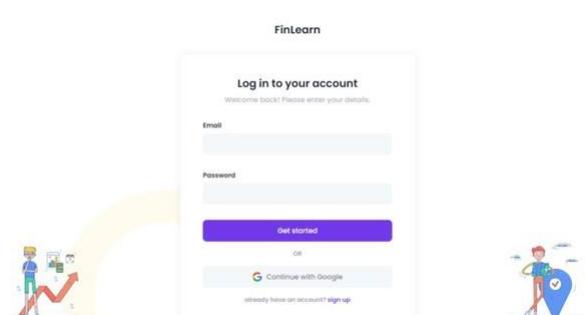


Fig. 2. FinLearn Login Interface

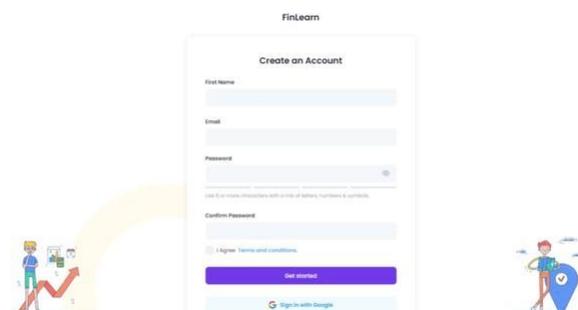


Fig. 3. FinLearn Register Interface



Fig. 4. FinLearn User Dashboard Interface

Instructor Interface

Figure 9-15 shows all the web pages designed for FinLearn's instructor. The instructor can have access to dashboard of course, quiz, and user's progress.

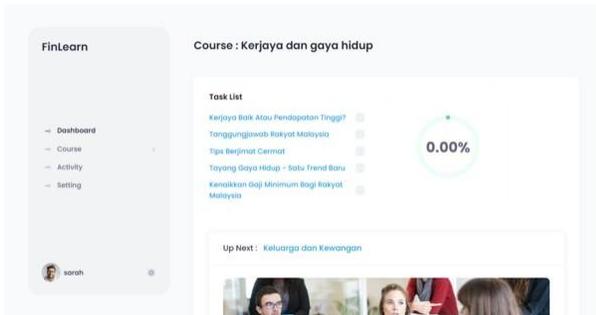


Fig. 5. FinLearn User Course Interface

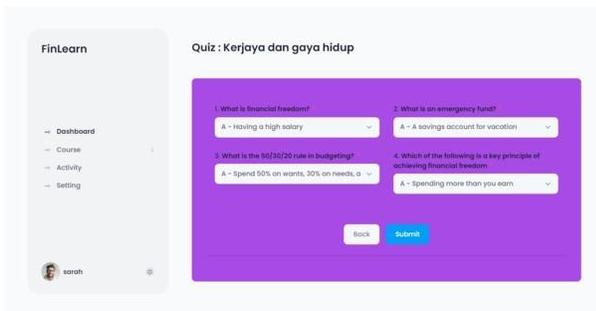


Fig. 6. FinLearn User Quiz Interface

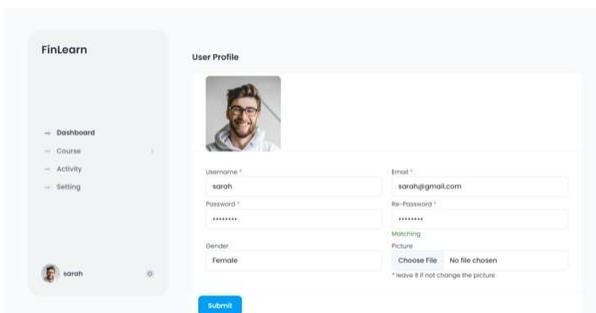


Fig. 7. FinLearn User Setting Interface

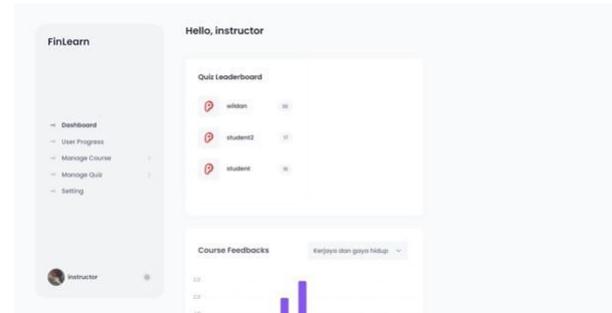


Fig. 9. FinLearn Instructor Dashboard Interface

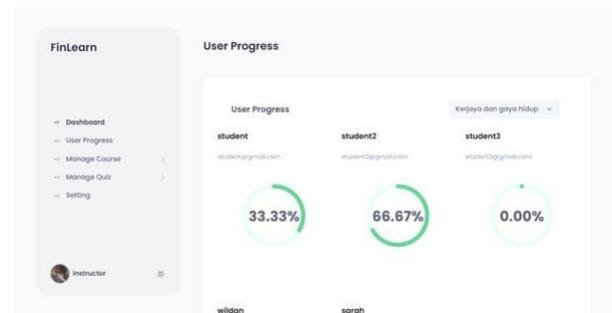


Fig. 10. FinLearn Instructor User Progress Interface

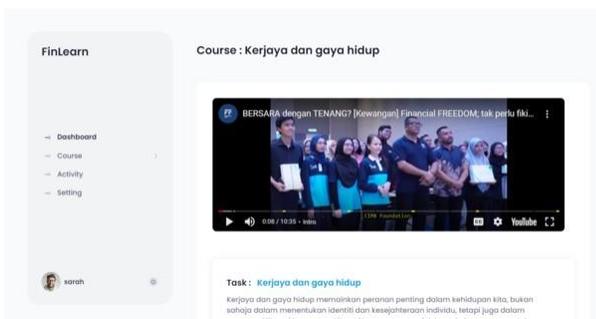


Fig. 8. FinLearn User Course Interface

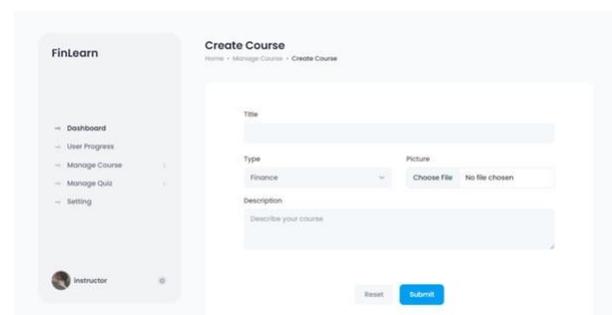


Fig. 11. FinLearn Instructor Create Course Interface



Fig. 12. FinLearn Instructor Listing Course Interface

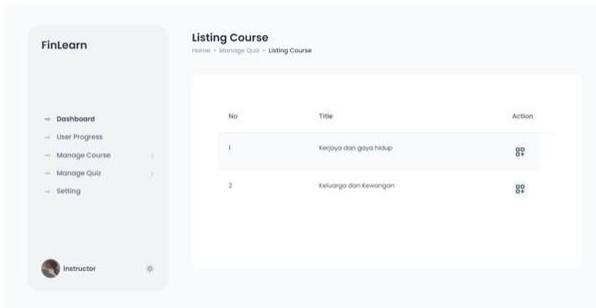


Fig. 13. FinLearn Instructor Edit Course Interface

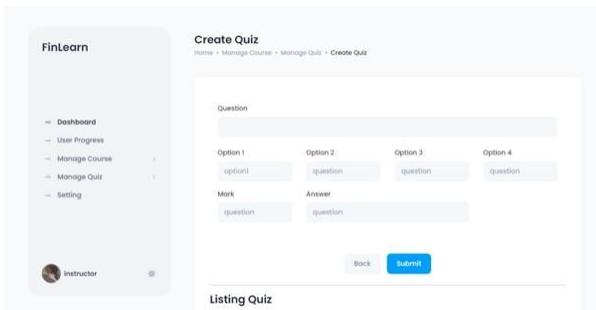


Fig. 14. FinLearn Instructor Create Quiz Interface

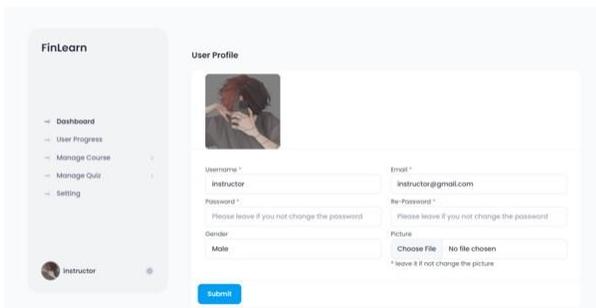


Fig. 15. FinLearn Instructor Setting Interface

Admin Interface

Figure 16-18 shows all the web pages designed for FinLearn's admin. The admin is able to monitor and review the

course and quiz content, profile of users and instructors, and provides necessary updates over time.

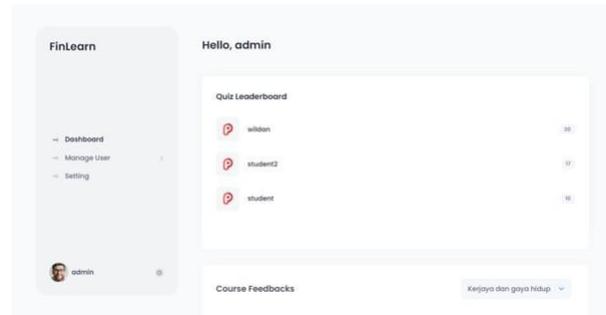


Fig. 16. FinLearn Admin Dashboard Interface

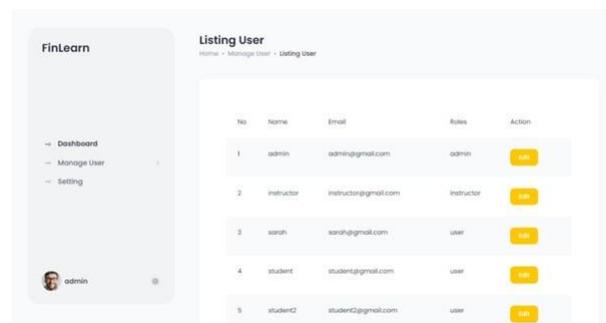


Fig. 17. FinLearn Admin Listing User Interface

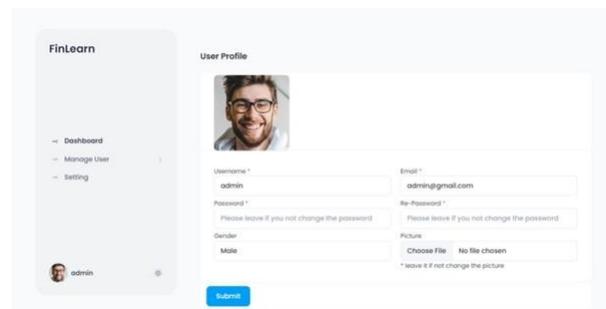


Fig. 18. FinLearn Admin Setting Interface

D. Prototype Features

As overall review, the web has the following features that might help users in exploring FinLearn:

- 1) Provides information on personal finance.
- 2) Provides search option to find specific course.
- 3) Provides images and videos that might users in understanding finance more efficiently
- 4) Minimalist UI/UX designs that are comfortable to user's eye

V. TESTING AND RESULTS

Upon completion of the entire design and development process, FinLearn was tested by a reviewer. The functional

testing approach was used by the reviewer in order to test FinLearn. Once the tests were done and approved by the tester, the developer evaluated FinLearn by using questionnaires and the users were also given the opportunity to use the online learning platform before answering the questionnaires.

A. Survey Result

The survey was carried out among UniKL students via online. The findings help to support the future development and improvement of the web application. The questionnaire has 3 sections; demo graphic, financial knowledge before using FinLearn and financial knowledge after using FinLearn . The following graphs and pie charts provide the results of the collected data.

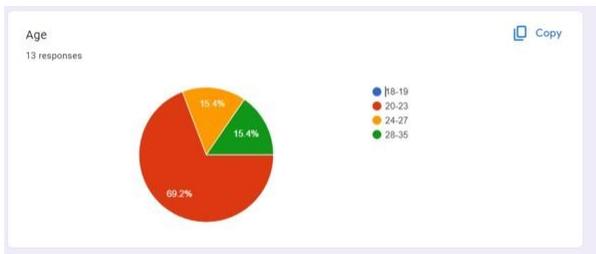


Fig. 19. Respondents Age

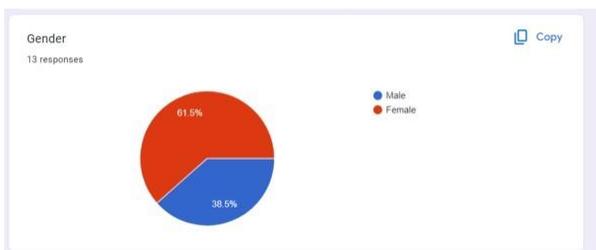


Fig. 20. Respondents Gender

Based on Figure 19 and 20, it shows that the questionnaires were answered by most female and respondents age range from 20 to 23.

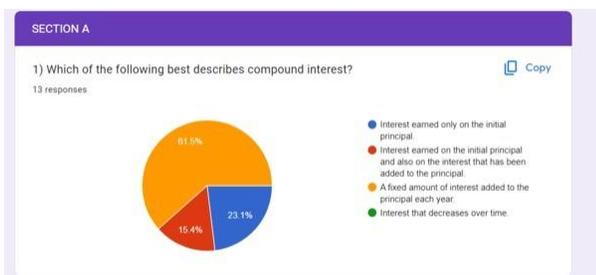


Fig. 21. Respondent feedback on Retirement Savings

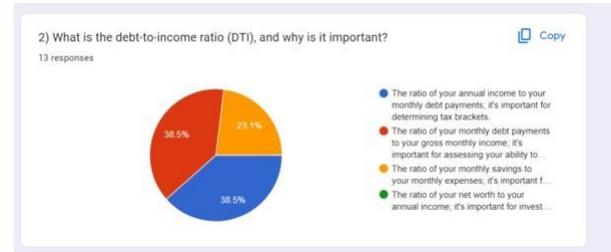


Fig. 22. Respondent feedback on Compound Interest

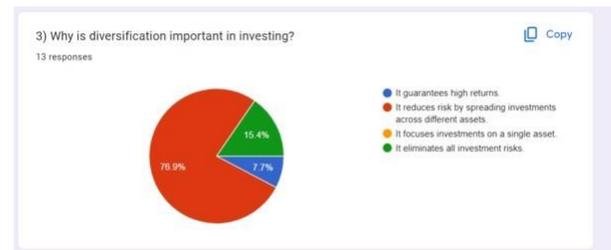


Fig. 23. Respondent feedback on Debt-to-Income Ratio



Fig. 24. Respondent feedback on Risk Diversification

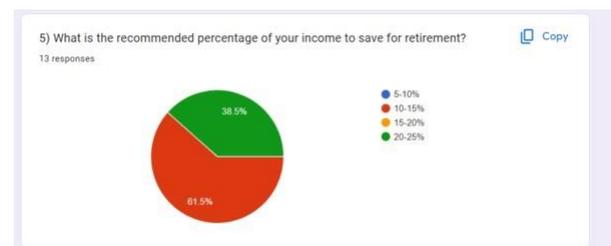


Fig. 25. Respondent feedback on Credit Score Factors

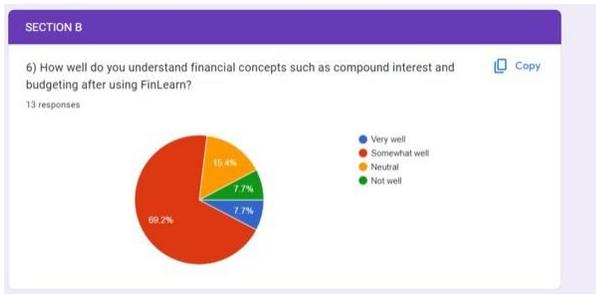


Fig. 26. Respondent feedback on how FinLearn improve respondent understanding of financial concept such as compound interest



Fig. 30. Respondent feedback on how FinLearn made changes to respondent financial behavior



Fig. 27. Respondent feedback on FinLearn improved respondent confidence in making financial decisions such as managing debt and investing

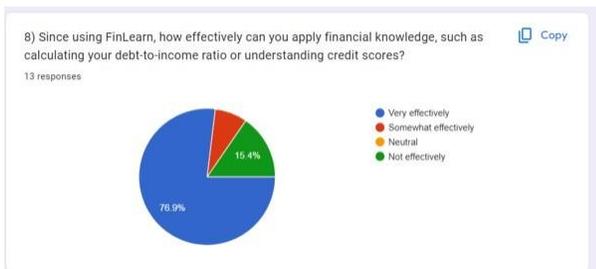


Fig. 28. Respondent feedback on how FinLearn help respondent apply financial knowledge effectively such as calculating debt-to-income ratio

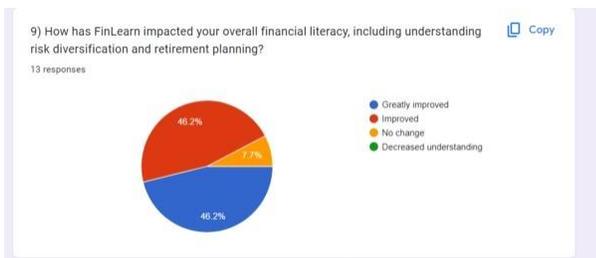


Fig. 29. Respondent feedback on how FinLearn increase understanding of risk diversification and retirement planning

Figure 26-30 shows that a lot of the respondents are showing an improving understanding of financial concepts. Hence, all the feedback have been gathered and system has received favorable feedback in general.

VI. CONCLUSION AND RECOMMENDATION

The FinLearn project successfully developed a user-friendly and informative online platform to address the financial literacy gap among Malaysian young adults. The platform covers essential financial topics through engaging modules and interactive features, and user testing confirmed that it meets user needs and expectations.

To further enhance the FinLearn platform and user experience, several recommendations are proposed. First, future researchers need to implement real-time interaction features, personalized learning paths, and gamification elements to increase user engagement and cater to individual needs. Cross-browser compatibility and the database for scalability should be optimized, and conduct further UI/UX design iterations for an intuitive and visually appealing platform. Furthermore, introduce advanced financial modules, incorporate interactive content like simulations, and develop a robust feedback mechanism for continuous improvement. Lastly, partner with educational institutions and financial organizations, and foster a user community through forums and social media groups to promote the platform and create a supportive learning environment.

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