



EFFECTIVENESS OF AI-BASED SOLUTIONS IN SCREEN TIME MANAGEMENT

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INTRODUCTION

- In today's digital age, mobile apps are part and parcel of our lives.
- According to our study, our student respondents have an **average screen time of 4:55:19**; **55.7% of respondents are dissatisfied** with their screen time. (Refer to Figure 1 & Figure 2)
- According to paper published by Saw Swee Hock School of Public Health [1], school aged children and adolescents should be restricted to no more 2 hours a day.
- Based on a study led by Neza Stiglic and Russell M. Viner [2], from Institute of Adolescent Health at University College London (UCL), there is **strong or moderate evidence** suggesting **associations between screen time and several negative outcomes**. These include greater obesity/adiposity, higher depressive symptoms, lower diet quality and diminished quality of life.

Thus, **reducing screen time** is crucial for maintaining a healthy lifestyle.

METHODOLOGY

In order to investigate the effectiveness of the AI-based solutions, we conducted a **survey**, asking **about 83 respondents** from different secondary schools in Singapore to input their weekly screen time before and after applying the AI solutions and their satisfaction of digital productivity.

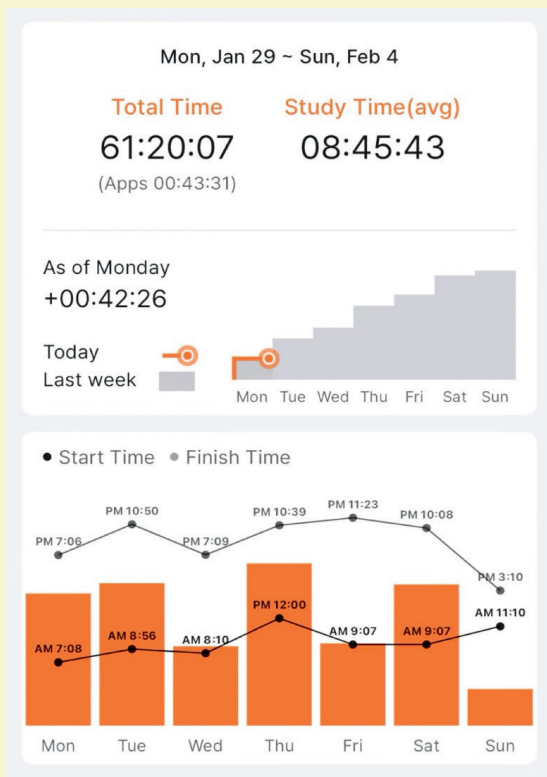
We placed the students into 3 groups for the second round, the **'Do not Disturb'** group, the **'Yeolpumta'*** group, and the **control** group.

*Yeolpumta is a productivity app that helps you track your study time and tasks. Users can use a pomodoro timer, join groups, create study tasks on its built-in planner system.

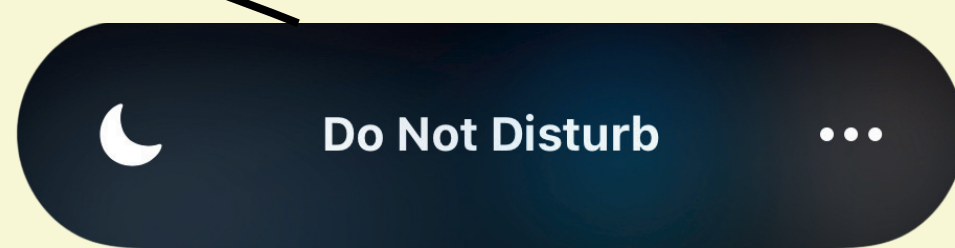
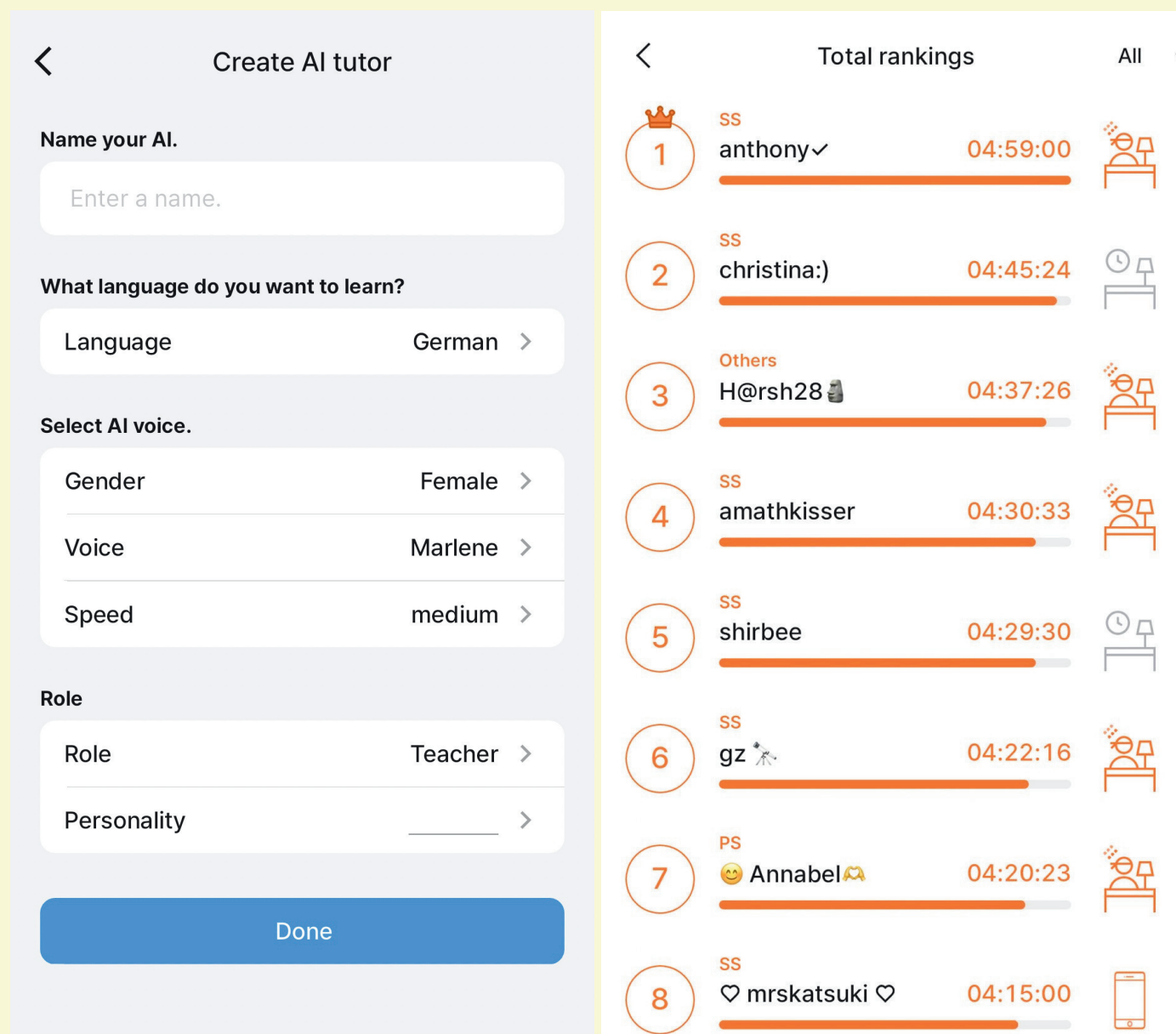
OUR AI-BASED SOLUTION

YEOLPUMTA APP

The customisation of role and personality using the **AI Tutor** can help the user have **offline-access to learning materials** and activities, thus encouraging users to spend less time online.



With **tracking** of their study time in a **clear graphical trend** analysed by AI algorithms, it offers **visual feedback** to users and encourages them to be more mindful in screen usage.



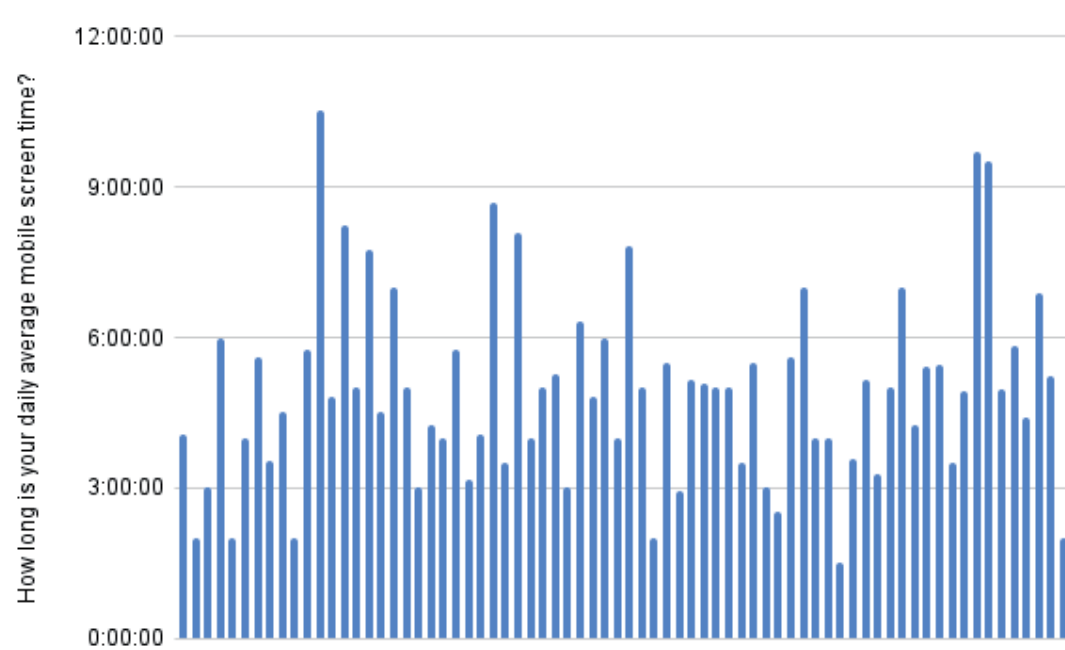
- **Ranking system** in this application uses **Artificial Intelligence algorithm** to generate rankings based on various inputs and criteria.
- Ranking users based on their time spent on productive activities motivates users to **reduce unproductive time usage**.

DO NOT DISTURB MODE

- **Silences most if not all notifications** so that students will **not be distracted** and start to use their phone, increasing their productivity.
- However, students can also set **exceptions**, like their parents' messages, so that if there is an emergency, they can still be notified.
- **AI algorithms** can **analyse various factors** such as user behaviour, calendar events, location and times of the day to determine the **most appropriate time** to activate this mode, which **minimise interruptions** and support users in maximising productivity.

ANALYSIS

Fig. ①



Most students are dissatisfied with their screen time. However, students still have a **mean screen time of 4:55:19**, which shows that even though students know that they use their phones too much, their efforts to reduce their screen time are still unsuccessful.

Fig. ②

General satisfaction of respondents towards their screen time

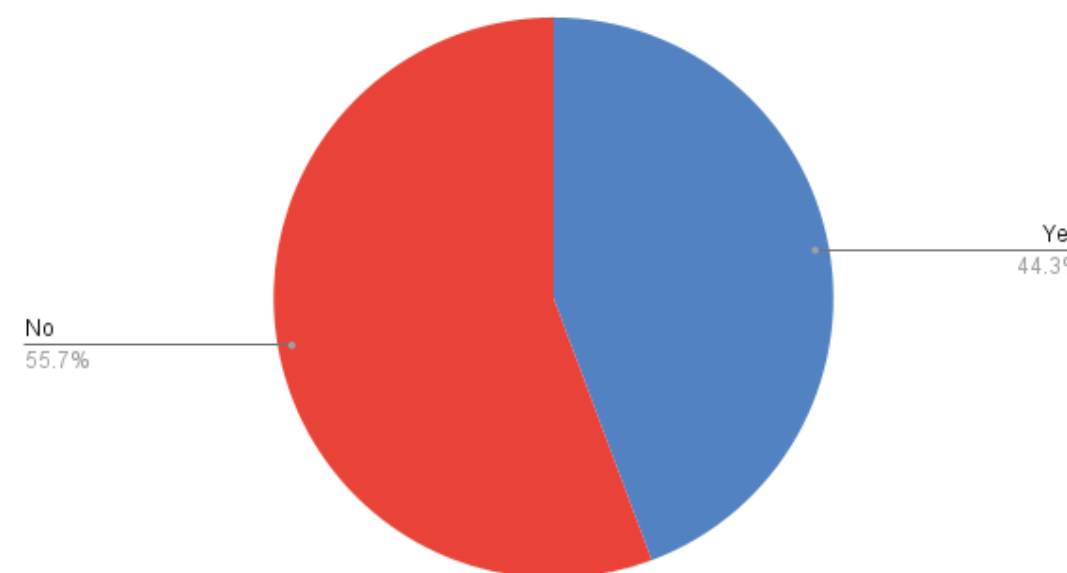
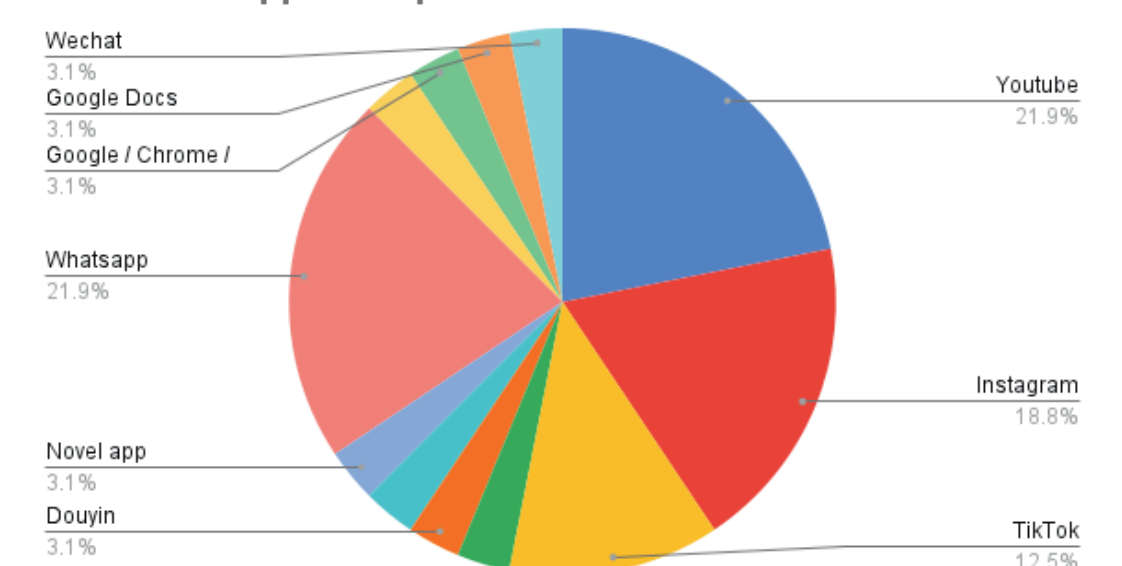


Fig. ③

Most used app of respondents



Apps most commonly used for the longest duration are **social media** apps such as YouTube, Instagram, TikTok and WhatsApp. According to a study published in US National Library of Medicine [3], social media is a major source of **distraction** and hinders users from successfully completing certain tasks.

Fig. ④

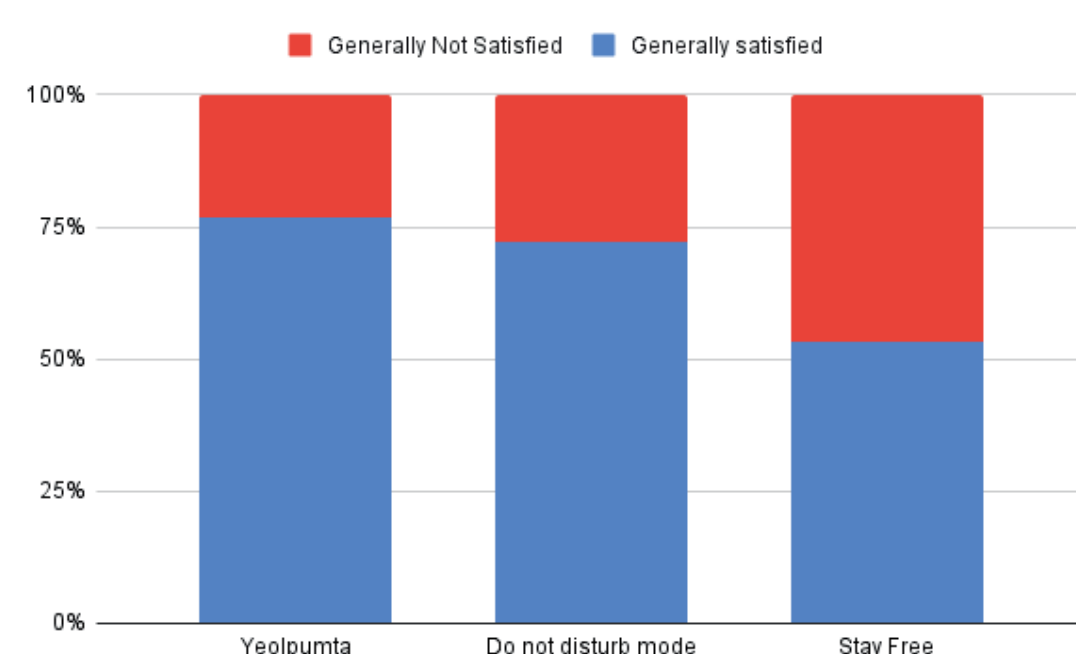
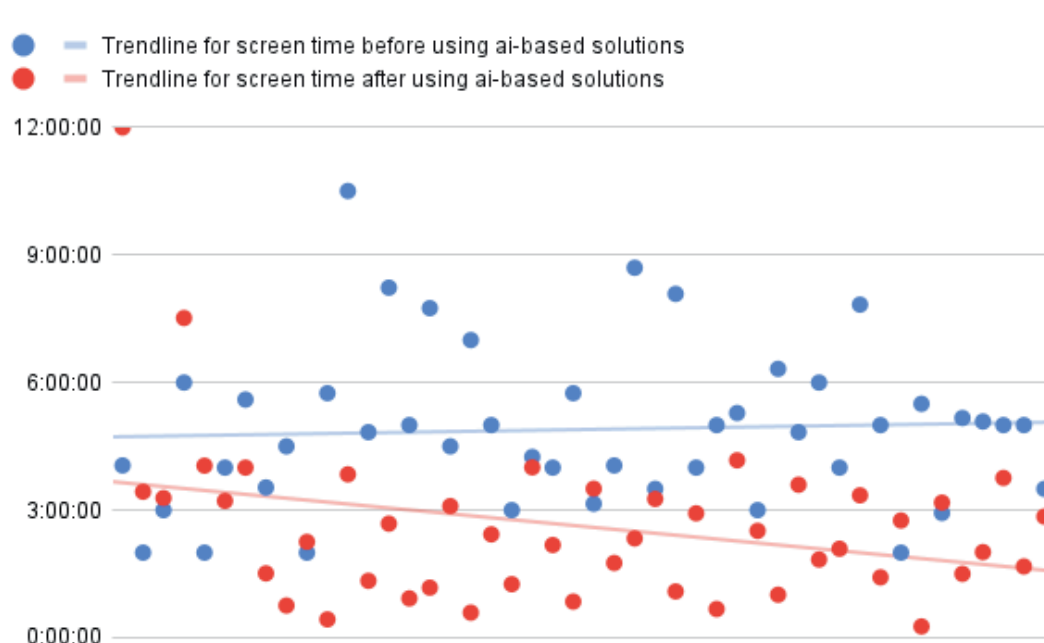


Fig. ⑤



RESULTS/FINDINGS

As seen in Figure 4, respondents expressed a **high level of satisfaction** with the **AI-based solutions**, with a **higher satisfaction rate for the Yeolpumta app**.

According to Figure 5, there is a notable decrease in mean screen time after applying the AI-based solutions.

CONCLUSION

In conclusion, reducing screen time is a transformative lifestyle choice with the potential to positively impact

- physical health
- mental well-being
- overall quality of life.

The effectiveness of **AI-based solutions** including the Yeolpumta app and Do Not Disturb mode is demonstrated by our research in **reducing screen time** and **promoting productive screen usage** with Yeolpumta emerging as the more effective solution.

FUTURE WORK

- Expand the scale of testing for AI-based solutions
- Utilise the concept of existing screen management applications to design an AI tool aimed at comprehensively addressing screen time-related issues

REFERENCES

- ① Lewis R, Yap CH J (2022) Evidence Review of Screen Use in Childhood. Saw Swee Hock School of Public Health. National University of Singapore. 20 February 2023.
- ② Neza Stiglic, Russell M Viner (2019 Jun 3) Effects of screentime on the health and well-being of children and adolescents: a systematic review of reviews. BMJ.
- ③ Christina Koessmeier and Oliver B. Büttner (2021 Dec 3) Why Are We Distracted by Social Media? Distraction Situations and Strategies, Reasons for Distraction, and Individual Differences. Frontiers Media SA.