

## **Kids ScreenTime: Mobile Application for Internet Usage Monitoring**

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**Abstract** : The pandemic of Covid-19 transforms our daily life by bringing new norms which makes Internet as an essential component in our everyday routine. With regard to this, both parents and kids are also fully depended on the Internet for their online classes, assessments and for work purposes. Unfortunately, the kids lose track of time while accessing Internet, which seem to be more entertaining. Currently, majority parents were found struggling to monitor their kid's Internet usage. Thus, this project proposes a mobile application for Internet usage monitoring aiming to assist parents who are concern on their kid's Internet usage. This project involved Rapid Application Development (RAD) methodology for developing the mobile application. The outcomes of this project are beneficial for parents not only for monitoring purposes but also as a training platform for their kids during this transition period.

**Keywords**: Internet Addiction, Parental Control, Kids Internet Usage, Mobile Application, Pandemic Covid-19

### **1. Introduction**

Internet became part of everyone life as the pandemic of Covid-19 has led to an inevitable surge in the use of digital technologies due to social distancing norms and nationwide lockdowns [1]. Ever since then, there has been an increased necessity for kids to access the Internet as the process of teaching and learning has shifted to online platforms. At the same time, parents are also occupied with their Work from Home (WFH) norms having less time to focus their attention to domestic matters. This indirectly resulted in less monitoring given to kids who need to spend their time accessing the Internet [2].

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Initially, the intention of assessing the Internet is for educational purposes, however due to lack of monitoring, kids tend to spend more time in front of the screens even when their classes are over [3].

Undeniably, online access is a vital for kid's education as it is an informative medium. Moreover, accessing to Internet is also highly entertaining. Kids especially between the age of 3 to 12 years old, finds online games and videos are more interesting than outdoor activities [4]. These encourages the kids to be on screen for a long period of time without them realizing especially when parents are not monitoring them appropriately [5]. Furthermore, parents are lack of platforms to monitor their kid's Internet usage. Parents are increasingly concerned of compulsive Internet usage which could affect their children significantly. Therefore, it is necessary to create a platform or a tool to assist parents in monitoring their kids' Internet usage [6]. Unfortunately, such tools are currently limited and expensive. Thus, the aim of this project is to develop a mobile application known as Kids ScreenTime to assist parents in monitoring Internet usage among their children. This mobile application is made available via both IOS and Android platform for free, allowing more parents to use it. Our study showed that parents are satisfied and find it useful in helping them to monitor their kids Internet usage. Moreover, the application is easy to use and parents find it as a suitable platform to monitor the internet usage and limit their time in front of the screen.

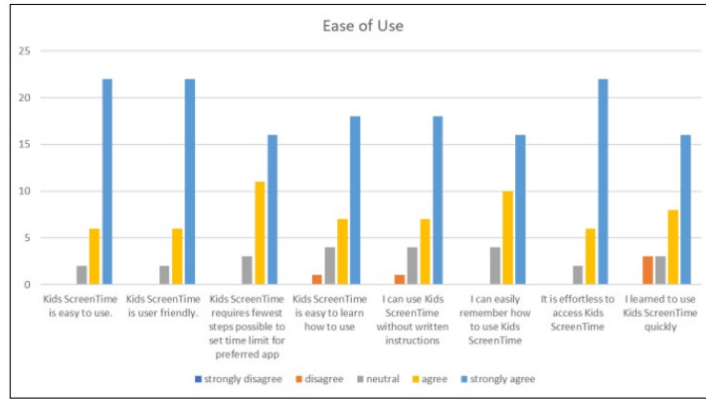
## 2. Methodology

This project involved Rapid Application Development (RAD) methodology for developing the mobile application. It consists of 4 phases; (1) Requirements planning, (2) Design, (3) Construction and (4) Implementation. In the first phase, the requirements of the mobile application were obtained from potential users using techniques such as survey and observation. The requirement specification is used in next phase to define the software and hardware requirements for the mobile application that will be built. It is then followed by developing the prototype in the third phase. Finally in the implementation phase, all the mobile application's functionality and design from the previous phase was implemented.

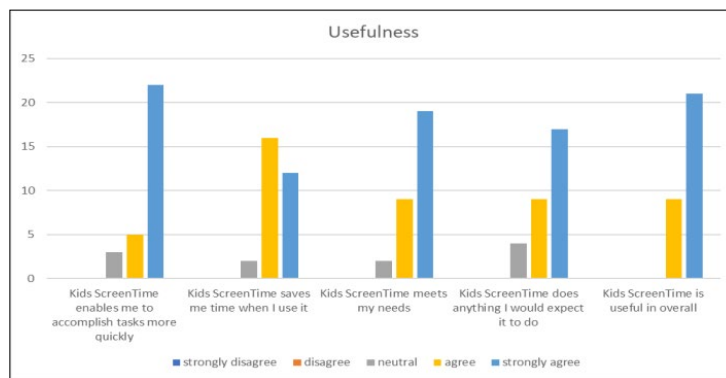
Once the mobile application is ready, a usability evaluation was conducted with 30 participants, consisted of parents around a particular neighborhood. The instruments used for the evaluation were the Kids ScreenTime mobile application and a questionnaire. The questionnaire consisted of 22 questions whereby participants can choose to complete the study via online or physical (face to face) mode. The protocol of the study conducted in physical is as follows; (1) The participants were given brief explanation on the application and were shown a demo on how the mobile application works, (2) The participants were allowed to experience and interact with the application – guidance and assistance were given when necessary (3) The participants completed the questionnaires at the end of the session. Meanwhile, the online mode was practically the same except they were shown a video of how the application works. The platform used for online evaluation was via Webex platform. Both sessions took place around 20 – 30 minutes and participants were given small token of appreciations in a form of book vouchers of MYR5 for their participation.

## 3. Results and Discussion

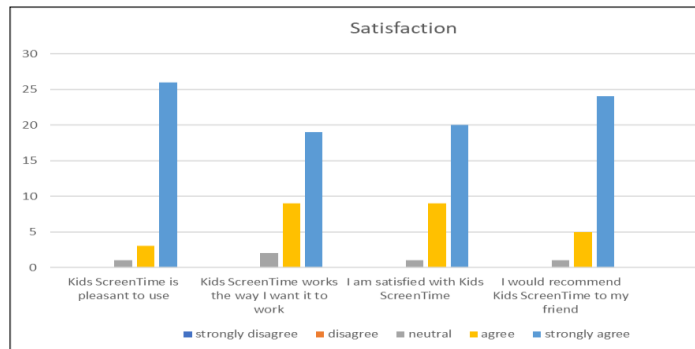
An analysis was conducted on the participants' responses which classified into four perspectives; (1) Ease of use, (2) Usefulness, (3) Satisfaction and (4) Design & Layout of the application. The responses were measured using 5-point Likert scale ranging from “strongly agree to strongly disagree”. A total of 30 participants voluntarily participated in the study, aged between 30 to 50 years old. Sixty three percent of the participants are female while the remaining are male. The participants came from both technical and non-technical background judging from their occupations – educators, engineers, architects, financial operators and home makers. All of the participants are parents with children aged between 4 – 12 years old. **Figure 1 – 4** illustrate the results obtained for the four evaluated perspectives as mentioned previously.



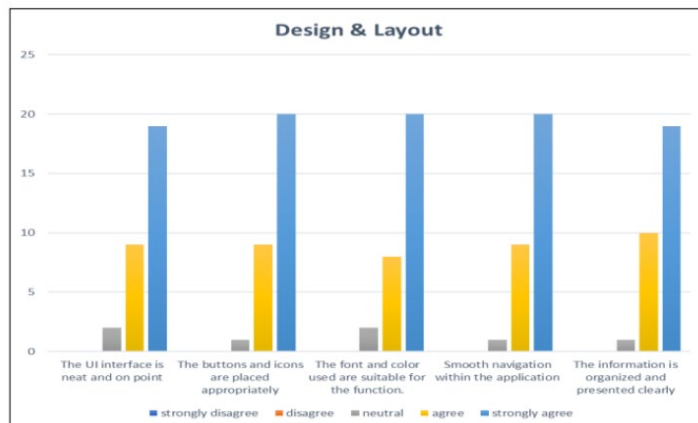
**Figure 1: Kids Screen Time: Ease of Use**



**Figure 2: Kids Screen Time: Usefulness**



**Figure 3: Kids Screen Time: Satisfaction**



**Figure 4: Kids Screen Time: Design & Layout**

Twenty-two participants out of thirty (73.3%) strongly agree that Kids ScreenTime application enables them to accomplish tasks faster and five participants (16.7%) agree to that as well. Three out of thirty participants partially agree because some of the parents needed guidance to adapt with the application due to absence of technological skills. Meanwhile, twenty-one participants (70%) strongly agree that Kids ScreenTime application is useful. Twenty-six participants (86.7%) strongly agree that Kids ScreenTime application is pleasant to access, and three participants (10%) agree to it. ScreenTime works the way they want it to work. Remaining one participant is partially agreeing to recommend the application to others. In my opinion, this is because basic technological skill is required to access the application to make it work as it is. Thus, overall, it can be concluded that all participants are satisfied and would recommend Kids ScreenTime application to others.

#### 4. Conclusion

This project has been implemented successfully aiming at providing assistance to parents who struggle to monitor their kids' screen time. Based on the evaluation conducted, majority of the parents feel that the mobile application developed was easy to use and very useful. This can be seen when they complimented the design and layout while using the applications. Furthermore, they expressed their satisfaction in using the application judging from their recommendation to introduce the application to the circle of the friends among the neighborhood. As for future work, we planned to extend the functionality of the mobile application into other monitoring specific type of potential addicted platform such as social media and online games.

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