THE CREATION OF A SAFETY-ORIENTED EDUCATIONAL APPLICATION IN RESPONSE TO THE EMERGENCE OF AN AGING SOCIETY

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Abstract

This research aimed to create a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership, and to assess the quality of a safety-oriented educational application. The qualitative research was used with 253 key informants which were consisted of those who worked for the educational personnel in Nonthaburi province, the Provincial Administrative Organization Nonthaburi province, Department of Older Persons, the technology crime suppression division, Police Nursing College and Royal Police Cadet Academy. All selected by the purposive sampling, and analyzed the data by content analysis. The result found that the creation of a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership were consisted of the two main fundamentals issue which were the data preparation stage and designing and developing the web application, and to increase the performance of the web application needed to be comprised of three issues 1) The content issue 2) The design issue, and 3) The implementation issue.

Keywords: Educational Application, Aging Society, Collaboration Partnership

INTRODUCTION

A safety app is an application that used with the mobile phones and tablets which is designed to assist with occupational safety. There are many safety apps available that can help with document organization and hazard identification. A safety app frequently does nothing more than digitize a standard procedure, enabling data to be collected and provided on a mobile device. A safety app may contain a wide range of features that can be applied to various scenarios. To coordinate inspections or other everyday paperwork, a safety app may be employed. Some applications might plot data in graphs, and let the users to follow the trends. An app for safety may help in identifying risks at a job site by using text, images, GPS, and a diary of daily safety checks. More and more apps are being created for daily use as more operations are mechanized and digitalized. (Safeopedia, 2019).

The aging population is increasing rapidly all over the world. The proportion of people aged 65 or above is expected to reach 12% and 23% worldwide by 2030 and 2100, respectively, which would put a great deal of the strain on the social and the health care systems. The healthcare professionals are thinking about developing the mobile-based treatments to encourage the healthy lifestyles, to support the illness prevention management, and to enhance the access to the health services in order to relieve this load. (Liu et al., 2021). One of the nicest things to happen in the 21st century is technological advancements since they enable us to connect and stay in touch with our loved ones. Additionally, it enables you to assist in caring for the family members even if you are not connected with them. Finding the best mobile application to assist you in taking care of the elderly people in your life is the key. Therefore, if you have older family members, you have come to the perfect location. The best apps for enhancing their life and safety, such as iBP, MediSafe, Senior Safety App, LifeFone Mobile Alert, ECare21, American Red Cross First Aid App, and Medsii, and so on (Living50+, 2022).

In the Asia context, Japan's senior folks frequently live alone in Asia, and many of them don't interact with others very often. In addition, this social isolation also renders them more susceptible to fraud and the extortion schemes, as well as to the natural disasters. Iwate Nippo, a local newspaper wanted to support Iwate's senior citizens to access the life-saving services by helping them feel more of a sense of belonging in their communities. They developed Iwapon, an app created specifically for their older subscribers. This app are a monitoring system that notifies the family members more than 24 hours, by giving the information on the suspicious calls or the texts including with a disaster information center that alerts citizens to threat with levels, and the locations during floods, storms, earthquakes, and other severe weather. (Inoue, 2020).

In Singapore, transportation apps are a popular way for seniors to travel around their town even after they can no longer drive themselves. The most popular apps, such as Uber, are one option, but even more relevant here is the senior-focused GoGoGrandparent app. This app is simpler and easier to use than most other options available for download. The senior population in Singapore is expected to increase to 9000,000 by 2030—posing a serious strain to the nation's infrastructure. Some apps are helping senior citizens take better care of themselves, reducing the workload for nurses and caretakers. One example of this is Pillboxie, a simple app that helps people to keep track of their medication schedule. Even if a person's memory is weakened in old age, using an app ensures that they will never miss a pill. In South Korea, South Korea's senior citizen population is noteworthy for how independent it is. According to the 2014 National Elderly Survey, an astounding 67.5% of seniors live by themselves, up from 25.2% in 1994. This creates a unique opportunity for technology to aid them in having the best possible quality of life. One common safety precaution for self-reliant seniors is an emergency button they can push if they suffer an injury, like falling in the shower. This way medical help can be summoned as soon as a problem occurs. Technology in the wearables space is completely changing this process. Rather than lugging around an emergency device all day, seniors can wear an unobtrusive smartwatch or smart bracelet that has the alert feature built right in (Hugh, 2019).

Nowadays, smartphones or tablets are one of the most popular devices. Most are intended for use in everyday life. And there has been more development of mobile applications (Mobile Application). Currently, there was a master's degree thesis titled "A Study of Action-Button Size on Mobile Applications for Elderly" by Wichaphon Ketchaikoson giving the information that: Most of the elderly in today's society were able to access to technology in our lives more than earlier times. This was the different from the past when the elderly did not attach much importance to the technology. Nevertheless, in reality, it was not difficult for the elderly to have access to technology. For example, using the online world to follow the news, or to contact family who live far away, many communication channels can be used. Moreover, playing games helped in brain development, helped to train the memory and to prevent the dementia for the elderly. Today's technology is developing rapidly, especially a mobile phone or tablet. Although there were many applications that are made for the elderly, the design of the background, the size of the letters, and the size of the buttons may cause inconvenience for the elderly to use. Therefore, the characteristics and proper size was necessary for the elderly (Heng, 2018).

Most of the previous papers focused on many areas in this issue, for example, the first one, Liu et al. studies in the title of "Mobile health applications for older adults: a systematic review of interface and persuasive feature design". The aim of this systematic review is to identify, synthesize, and report interface and persuasive feature design recommendations of mobile health applications for elderly users to facilitate adoption and improve health-related outcomes. The analysis revealed a total of 9 elderly-friendly interface design recommendations: 3 recommendations were targeted at perceptual capabilities of elderly users, 2 at motor coordination problems, and 4 at cognitive and memory deterioration. They also compiled and reported 5 categories of persuasive features: reminders, social features, game elements, personalized interventions, and health education (Liu et al., 2022). The second one, Privošnik et al. studies in the title of "Comparison of applications used to help the elderly". The aim of this literature review is to present a comparison of mobile applications designed to help older adults in their basic life activities. The results showed that there are a few different mobile applications for different conditions in the market. All of them are designed to make life easier for elderly. There is evidence that mobile applications are helping elderly population as much as they help health workers. The benefits of reviewed mobile applications are to help reduce rates of forgetting and of medication errors, and also increases perceived independence in managing medication (Privošnik et al., 2021). The third one, Göransson et al. studies in the title of "An app for supporting older people receiving home care - usage, aspects of health and health literacy: a quasi-experimental study". The aim of the study was to describe older people's usage of an app and to evaluate the impact of usage on aspects of health and health literacy over time. Results showed that an app may be a suitable tool for some older people living alone and receiving home care. The results indicate that the usage of Interaktor can support older people by significantly improving their communicative and critical health literacy (Göransson et al., 2020). The last one, Zhao et al. studies in the title of "martphone application training program improves smartphone usage competency and quality of life among the elderly in an elder university in China: A randomized controlled

trial". The results revealed that as life expectancy increases, it is imperative that the elderly take advantage of the benefits of technology to remain active and independent. Mobile health applications are widely used nowadays as they promote a healthy lifestyle and self-management of diseases, opening new horizons in the interactive health service delivery (Zhao et al., 2019).

The current study attempts to fill this gap in the literature by focusing on firstly, a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership, and secondly, the quality of a safety-oriented educational application.

Research objectives

1) To create a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership

2) To assess the quality of a safety-oriented educational application

MATERIALS AND METHODS

Research Method.

This study utilized the qualitative research by focus group method for creating of a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership, and to assess the quality of a safety-oriented educational application.

Participants.

253 key informants were used in this research which were consisted of 60 key informants from those who worked as the educational personnel in Nonthaburi province, Thailand, 13 key informants those who worked at the Provincial Administrative Organization Nonthaburi province, Department of Older Persons, Police officers in the technology crime suppression division, Lecturer from Police Nursing College and Royal Police Cadet Academy (The first focus group). 180 key informants from those who worked as the educational personnel at 6 schools in Nonthaburi province (The second focus group). All selected by the purposive sampling, and had the experiences that related to the study area. This research also was approved the ethics by the office of the committee for research ethics Royal Police Cadet Academy.

Instrument.

The researchers developed a research question based on the previous literature. The first focus group had three research questions which were relevant to the creation of a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership, and the second focus group had three research questions which were relevant to the quality assessment of a safety-oriented educational application.

Analysis.

The content analysis was used in this research

RESULTS AND DISCUSSION

It can be concluded into two issues which were as follows;

1. The result of the creation of a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership

1.1 In the data preparation stage can be concluded into two important data in the aspect of the online social media and the health for preparing to the aging society which were consisted of the objective, the content, and the learning activity which were as follows;

1.1.1 The knowledge series of the online social media, the dangerous of the online social media, the risky behavior in falling the victim to the online social media, the prevention from the online social media, the awareness of the online social media, the criminal warning website, the emergency report hotline, and so on which was related to one of the informants who said that "In the present day, the criminal in the online social media came from many patterns. The emergency report hotline is the one the most effective ways." It is in line of Edillo et al. The findings indicated that the development of a mobile application for the Philippine National Police Emergency Hotline 911. It tries to expedite the response time of the responders by minimizing the data gathering procedure conducted during a call (e.g. personal information). This is done through user registration before the mobile app can be used. The data of the user becomes visible to the dispatcher if a help is requested. Additionally, the geolocation capabilities of smartphones are integrated to the application to allow the dispatcher immediately locate the whereabouts of the caller. The ISO 9126 was used to evaluate the proposed system yielding a strong acceptance from the evaluators. It is recommended that a parallel implementation of the proposed i911 mobile with the existing 911 phone call application (Edillo et al., 2017).

1.1.2 The knowledge series of the health which were consisted of Non-communicable diseases, Dementia, Bone and muscle disease, Office Syndrome, Mental health problems, the guideline of the health promotion/ caring for the elderly including with the elderly health assessment, and linking to the health information from the hospitals which was related to one of the informants who said that " In the health issue, Non-communicable diseases was the primary concern for elderly, apart from that the mental health was also the important issue that the relevant people should to concern." It is in line of Arnold. This research indicates that one way of tackling NCDs is by health education as part of science education. Knowledge is important for decision-making and that all three types of knowledge should be recognized in health education (Arnold, 2020).

1.2 Designing and developing the web application

The result of the operation for the content structure design, and the web application development with the partnership found that the content in the security learning application were consisted of 1. The link of the knowledge of the health 2. The link of the knowledge of the online danger 3. The link of the local department 4. The link of the emergency line, and 5. The link of Q&A by naming "Safeyvacc" as the application name which was related of one of the informants which said that "To create the effective security application, it needed to be able to link with all the stakeholders in the local department including with having the information for the elderly in term of health and online dangers." It is in line of Brewster et al. Results suggest that Area Agencies on Aging are increasingly partnering with healthcare organizations to address the health-related social needs of older adults and contribute to multisector coalitions that promote community health. Investments in health and human services partnerships through Area Agencies on Aging can yield health returns among older adults, in the form of reduced health care use and spending (Brewster et al., 2020).

2. The result of the quality assessment of a safety-oriented educational application

The result can be concluded as follows;

2.1 The result of the quality assessment was good in the views of the key informants as one of the key informants which said that "I agreed with every panel in the web application, and it would be better if the developer could add the depression information, the contact of the favorite hospital, alcoholic hot line, and so on." It is in line of Moulaei et al. The results revealed that Mobile-based self-care applications can play an essential and effective role in controlling and reducing the effects of anxiety disorders and depression. Disease control and management, drug management, nutrition and diet management, recording clinical records, communicating with physicians and other patients, reminding appointments, how to improve lifestyle, quitting smoking and reducing alcohol consumption, educational content, sedation instructions, introducing health care centers for depression and anxiety treatment and recording activities, personal goals and habits in a diary were the most important features of this application (Moulaei et al., 2023).

2.2 The result of the assessment of the web application quality were good. All the informants assessed in the good ways as one of the key informants which said that "I do like the implementation, the content information, the colorful design, and this is one of the best applications" It is in line of Feng and Luo. The results showed that the current Easy Mode for the elderly of chat applications does not adequately address the issue. Improving the UI design of Easy Mode based on color cognition and user demand to solve the identified problems (Feng & Luo, 2022).

Furthermore, the researchers concluded the recommendation from the key informants in order to increase the performance of the web application which were consisted of three issues.

1) The content issue

The content in some parts was too long, and used the informal languages. The infographic and video clip were needed as one of the key informants which said that "Should add on the cartoon picture and video for the elderly, they will be more enjoyable with it." It is in line of Siricharoen. The findings indicated that infographics are a formal way to help people interpret complex health information more easily and avoid possible mistakes in data management (Siricharoen, 2022).

2) The design issue

The developer should focus on the friendly user, such as have some words on the screen that easy to use as one of the key informants which said that "It should be used easier than this, for example; have the symbol "Click me", and voice when the user click on the formation link because most of the elderly do prefer to listen than to read the text." It is in line of Tajudeen et al. Results indicated that a guideline was proposed pertaining to usability and health management features. This guideline offers suggestions for mHealth app issues related to phrasing, menus, simplicity, error messages, icons and buttons, navigation, and layout, among others. The study also found that speech recognition technology can help seniors access information quickly. The proposed guideline and findings offer valuable input for software and app developers in building more engaging and senior-friendly mHealth apps (Tajudeen et al., 2022).

3) The implementation issue

The elderly should not receive the exceed information, and the healthcare emergency was needed as one of the key informants which said that "I do recommended to create the link, or downloaded some specific information for the elderly for preventing the elderly not to take too much information, and also should add the channel of the ambulance including the two ways communications." It is in line of Cao et al. The results indicated that information overload and system feature overload of a mHealth application increased the fatigue and technostress of the elderly user, which further increased their resistance behavior (Cao et al., 2020).

The research limitation

The limitations are evident due to its limited geographic scope, potential sampling bias, and the lack of specific solutions to implementation challenges.

The research recommendation

1) All the partnerships should collaboration, making the public relation for driving the web application to have the high impact towards the knowledge creation by covering all area in local government organizations.

2) The relevant organizations should always have the management plan for monitoring and updating for having the most benefit to the users

Applicable implementation

The finding of this research improved the understanding of a safety-oriented educational application in response to the emergence of an aging society based on the education personnel collaboration partnership in Thailand.

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