Interactive Application Design for Children with Developmental Disabilities

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ABSTRACT

Social campaign Say Pain is a social movement that aims to fight for the rights and interests of children with disabilities in society. The Say Pain campaign aims at people with developmental disabilities who find it difficult to communicate with people around them. Say Pain campaign is very useful for children with disabilities because it encourages people to understand and provide more support. The method used is qualitative research, where data collection is carried out by utilizing various kinds of literature studies. This movement encourages the public to better understand and pay attention to the needs of children with disabilities. And we need a media that can be used to help children with disabilities and those around them to show their pain by using an application which contains various kinds of pain. The aim is for children with developmental disabilities to be able to communicate the pain they are experiencing.

Keywords: Application, Campaign, Disabilities, Design

1. INTRODUCTION

Humans are social creatures who always interact with one human being and another human being. Humans cannot be successful without the help of others. Every human being always needs other humans. Every living creature must have different physical characteristics and forms such as shape, voice, skin color depending on the type of terrain where it is located.

Physical differences in humans can also be called disabilities, because there are deficiencies or imperfections in the body or mind. Disability is a general term that includes disability, activity limitations and participation limitations. People with developmental disabilities often receive unfavorable behavior from the surrounding community, because they are considered unable to communicate well. People lack knowledge about understanding people with developmental disabilities in terms of the language they are given, and are always misunderstood because they don't know about the sign language commonly used by people with developmental disabilities.

This problem also occurs among parents of children with disabilities, who do not realize that their children are suffering, and many children with disabilities often injure themselves, which can be life-threatening and endanger their mental health.

Because people with disabilities are often looked down upon and this can hinder their ability to consistently follow the treatment and therapy for the pain they suffer from. This can affect the effectiveness of treatment and worsen the pain conditions experienced by people with disabilities.

Parents with developmental disabilities need to be alert or sensitive to their children when they are sick, to avoid traumatic incidents such as hair pulling, hitting the child's head, or kicking the child. This is the reason why parents must learn and be alert so that bad things do not happen to children with disabilities.

A campaign is a process of communication activities in the form of individuals or groups carried out in an institutional manner and aims to change the mindset of the audience. According to Roger & Storey (1987), a campaign is a form of planned communication action with the aim of creating a certain effect on a large number of audiences carried out within a certain period of time. Rajasundaram (1981), explains that a campaign can be defined as the use of various communication methods which are certainly different, which are carried out in a coordinated manner within a certain period, aimed at directing the audience to certain problems. Meanwhile, "Say Pain" is a form of campaign carried out by a company in the health sector, namely PT. Daewoong Pharmaceutical Company Indonesia.

2.   LITERATURE REVIEW

This research is related with various kind of literature studies and research project. From the article entitled "Application of Virtual Interface of Interactive Teaching Materials for Children with Developmental Disabilities", written by Chien-Yu, et al (2012) explain that children control the tool via micro switch, thereby bringing the children the experience of the interactive technology application (Chien-Yu et al, 2012). Children with developmental disabilities took an infrared emitter to control the interactive teaching materials. The main purpose is to introduce one kind of teaching skill in the resource classes.

Children with developmental disabilities typically have sensory processing disorders, which may result in considerable discomfort. Sensory stimulation therapy is the most common remedy, but the development of therapy content is challenging because each individual has unique sensory problems and personal characteristics. User studies reveal that the proposed scheme is effective for the development of personalized educational content, thus helping sensory stimulation therapy (Lee, Park, & Song, 2017).

Children diagnosed with Autism Spectrum Disorder (ASD), as one of the most complex neurodevelopmental disabilities, are characterized by different brain and functioning development, distinct interaction with the environment and different learning patterns,

language and social skills impairments, and repetitive auto-stimulating restricting behaviors (Pistoljevic & Hulusic, 2017). In this paper a pilot user study on an e-book with an embedded educational game for children with developmental disorders was presented.

Inventing and designing a touchscreen-assistive application for children with autism is a delicate process as designing technologies for groups of individual with profiles other than one's own is always challenging where the life worlds and lived experience are far removed from the experience of typical individual (Kamaruzaman et al, 2016). In this research paper entitled "Developing user interface design application for children with autism" is discusses the user interface design process of forming TaLNA in assisting the teaching of basic calculations to children with autism.

Designing applications that cater to a larger group of individuals to encourage collaboration and inclusion, for instance, providing easy and controllable transitions between different task levels, and balancing interaction and content complexity (Sharma et al, 2018). Based on studies with these applications, this article presents guidelines for designing gesture-based applications for individuals with developmental disabilities.

The Say Pain campaign for people with disabilities originates from Denmark. This campaign was launched by the Dansk Handicap Forbund (DHF), an organization representing disabled people in Denmark in 2007. The Say Pain campaign aims to address the problem where disabled people are often ignored when disabled people experience pain. In fact, pain can be an indication of a serious health problem and requires immediate medical attention.

3.   METHODOLOGY

The method used is qualitative research, where data collection is carried out by utilizing various kinds of literature studies related to similar research such as journals, internet sources and other literary sources. Distributing questionnaires is also a way to collect data which requires respondents to fill out the required questionnaires. Not only that, one other method is by conducting interviews with the parties concerned, in this case interviewing teachers at SLBN A Citeureup. Interviews were conducted directly with the person concerned at SLBN A Citeureup. Once the data is deemed sufficient, the data obtained is processed to describe the facts.

4.   DISCUSSION

4.1.   Developmental Disabilities

Developmental Disabilities are specific disorders that can occur at any time from before the baby is born, until the age of 22 years. Developmental disabilities can take many forms. Developmental disabilities can cause a child to develop more slowly over time, or experience physical difficulties and limitations, or have difficulty learning and growing like other children in general.

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medical attention. Therefore, this campaign encourages people with disabilities to be more active and brave in expressing the pain that people with disabilities experience.

The Say Pain campaign was successful in Denmark and eventually spread to countries around the world. This campaign has become part of a global movement to raise awareness and fight for the rights of people with disabilities. Communicating with people with disabilities is not an easy thing, but if you have the intention to help people with disabilities it will be easy. Obstacles remain in helping people with disabilities, especially ordinary people. It is even more difficult to communicate with deaf children, those with hearing impairments, namely those with hearing impairments, because they are deaf, they don't hear, so they can't speak. The information received was minimal. Then the language used must also be sign language. Communicating with autistic children is more difficult, especially young autistic children who are not yet verbal, because autistic children are happy in their own world and focused on their own world. Communication with autistic children can use pictures. To make it easier to communicate.

For people with disabilities who find it difficult to interact/communicate verbally, several methods of communication are usually used, such as for deaf children, of course using sign language. However, for autistic children or mentally retarded children, use pictures, where the picture depicts the pain they are experiencing and then later designated to tell the teacher or people around them.

4.2.   The Design Strategy

Any person who has a physical or mental condition that makes an activity difficult or impossible is considered to have a disability. People with disabilities include people with physical disabilities, people with mental disabilities, and people with both physical and mental disabilities. Thus, the government is mandated to provide welfare for society, so that people with disabilities are looked after and protected. From the results of the interview it can be concluded that the "Say Pain" persuasion is not evenly distributed throughout Indonesia, especially Cimahi City. According to Meilia Ariviantty (Teacher), in the interview, it was stated that the teachers from SLBN A Citeureup had not received information about the "Say Pain" persuasion.

The design strategy used uses sound, animated graphics and also text which falls into the multimedia category. In the Big Indonesian Dictionary, multimedia has the meaning of providing information on a computer which includes sound, animated graphics and text. In fact, according to Rusman, et al (2011) Multimedia can be defined as the use of several different media and then combined into a tool to convey a message or information in the form of text, graphics and animated audio (Herman, 2017). The design format in this design uses application-based interactive multimedia. The main media uses an application media base where use is applied to the use of smartphones or smart phones. Several people conducted a preliminary investigation of their interactive physical activities, the child was asked to wear objects with reflective stickers, while the teacher asked them to continue performing standing and squatting actions (Lin et al, 2011).

With the communication contained in the persuasion design for people with disabilities through interactive application media, an interactive application is created that can help people with developmental disabilities to express the pain they suffer. By using several visual elements such as images and text, it makes it easier to identify a problem. By using a rounded corner style where each end is rounded (Figure 1), with the aim of eliminating

the sharp impression on each side. Because sharp impressions are avoided because this aims to be child friendly because every sharp edge has an impression that is not child friendly.
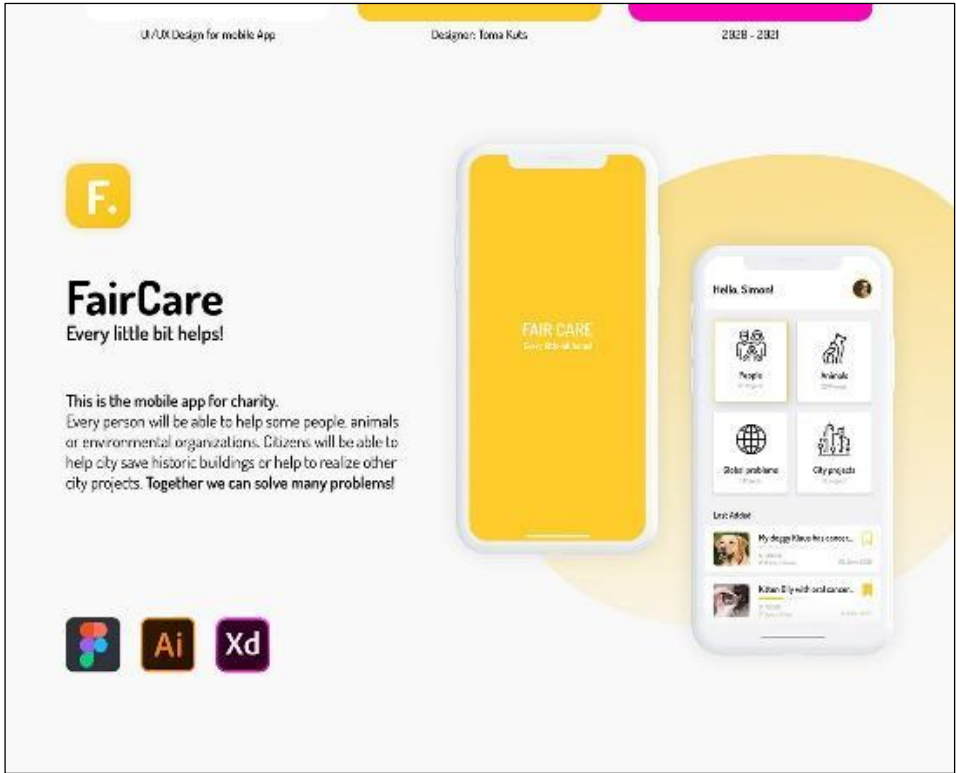

Figure 1: Rounded Style.

Source: https://www.behance.net/gallery/118735443/FairCare-Mobile-app-design (2024).

According to the term of layout, it is a form of action for arranging, arranging, or combining several graphic elements (text, photos, images, etc.) to serve as a form of visual communication that is communicative, aesthetic and attractive. Providing appropriate information that is also comfortable to view and access is one form of layout goal. Not only that, it also makes it easy to find the information you need, the search flow and also the aesthetic value therein.

The role of copywriting in social persuasion is very important and influential. Copywriting is the art and process of writing text or promotional materials designed to influence readers or audiences with a specific purpose, such as inspiring action, changing views, or influencing behavior. The title of this social persuasion is "UCAP". The tagline used in this social persuasion is "Ayo Ucapkan Rasa Sakitmu" This tagline was chosen because some children with disabilities find it difficult to express their pain.

The media designed is an interactive application in which there are several illustrations that direct the target audience to communicate the pain they are experiencing. Nowadays,

many people use gadgets in any situation, so implementing this campaign into an interactive application will make it easier for the target audience to use these tools.

Illustration literally means a picture that is used to explain or fill something (Kusrianto, 2017). Illustrations are usually used to clarify text so that it minimizes misunderstandings in its understanding. The illustrations used are cartoon style. By using cartoon illustrations the aim is to get closer to children because basically the use of cartoon illustrations is liked by children. And this is also an approach to children by using a cartoon drawing style.

Communication is not only done with words, communication can also be done using colors, where the colors usually represent certain feelings or souls (Novianti & Tarmawan, 2021). Feelings of sadness, joy or enthusiasm can be stimulated by seeing a certain color. Choosing the right color will give a good impression to the design created. The dominant colors used for this interactive media application are pink, white and black. These colors were taken because they refer to the AAC book, they were taken because they really support the results of interactive applications that can convey visual messages.

On the registration page, viewers are advised to enter their name and password so that their identity is recorded. Next, enter the illustration of body parts which are divided into several parts to select areas where the pain is felt, such as the face, ears, nose, eyes, lips, hands, feet, body parts, buttocks, and inside the body. This page on the names of diseases was created so that children can indicate their pain more specifically, so that caregivers do not misdiagnose what pain they are feeling. On this page there are several types of pain in the head and face area, children can choose what pain they feel at that time (Figure 2).
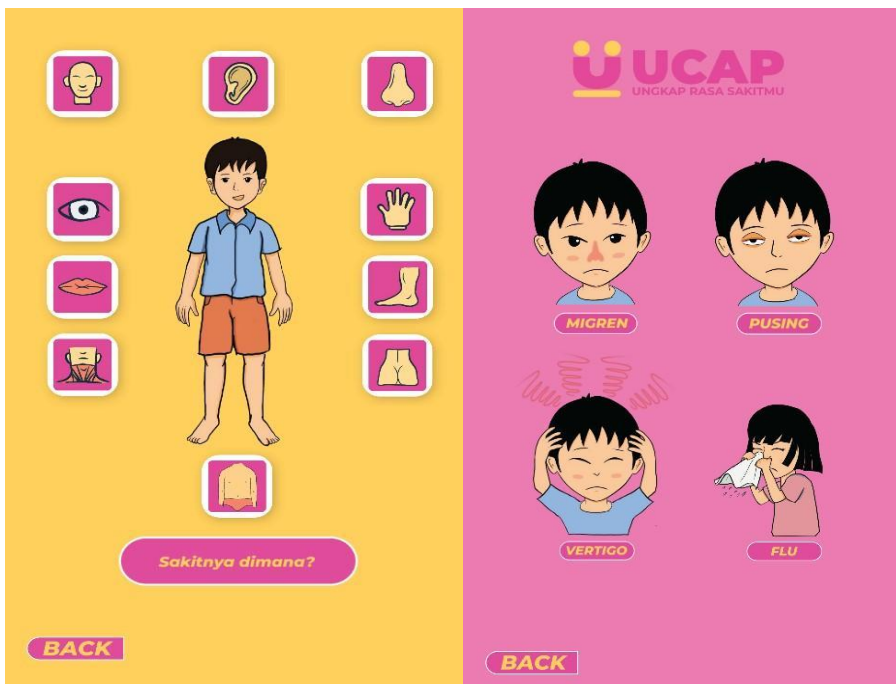

Figure 2: Application Display of Body Parts.
Source: author's work.

On this level is how much pain is felt starting from the lowest level to the most urgent level (Figure 3), and it can be said that it must be treated immediately so that nothing bad happens. This level was created so that the audience can tell the people around them if they are feeling pain until they don't. can move his body. On the last page there is a warning button for application media users if they feel pain that cannot be helped, or are in a very dangerous situation. Users can press the red button that says "Report Immediately" which will sound like an alarm (Figure 4).

Use of pink: Psychologically, the color pink is used as a symbol of hope, especially since pink is also a positive color which gives a feeling of warmth and comfort. Then the use of yellow symbolizes warmth, where yellow can also stimulate mental activity. Not only that, yellow also has a meaning that can evoke joy. By adding a color code, we hope that there will be no errors in using colors in the future. By providing an RGB color code intended for media or digital use, there is also the use of CMYK for printing use.
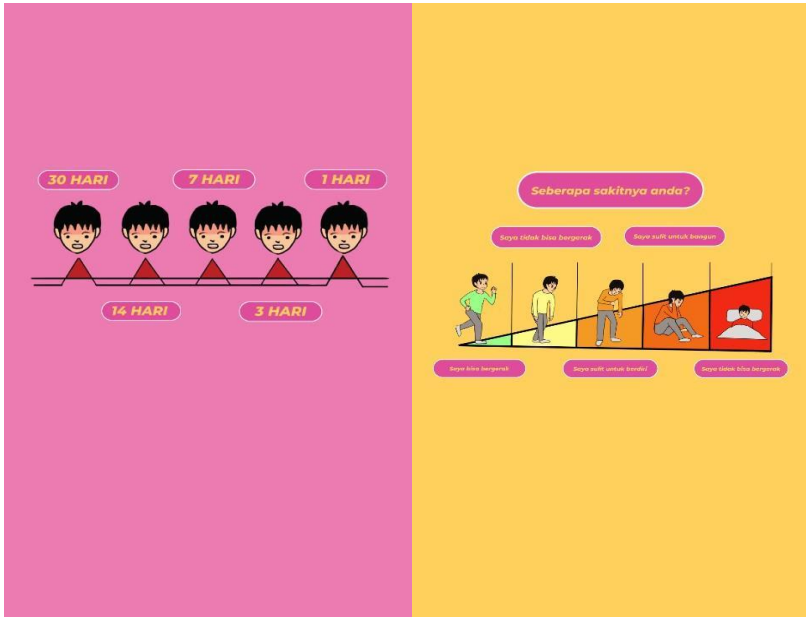
Figure 3: Page of the level of pain experienced and the duration of pain suffered.
Source: author's work.

Figure 4: Report page display.

Source: author's work.

4.3.   Application Distribution

In the media distribution and dissemination strategy, various strategies are used, both online and conventional. In spreading it online, that is by utilizing social media as the main means to introduce and introduce it to the general public. Meanwhile, for conventional distribution, that is by visiting the relevant institution to provide education and introduce it so that it can be used as well as possible.

Various supporting media are also created for the distribution of the main media, in other words promotion. This supporting media is a reminder media for the audience and increases interest so that they are interested in participating in this campaign program.

5. CONCLUSION AND RECOMMENDATION

We have discussed designing a campaign through interactive application media to increase public awareness, especially parents, of the pain experienced by children with developmental disabilities. This research highlights how little public awareness is of the pain experienced by children with developmental disabilities. The results of this study demonstrate the positive impact of designing an interactive application aimed at helping people with developmental disabilities express pain. With this application, there is a more effective means of communicating about the pain of people with disabilities to parents or caregivers.

Apart from that, the application of this application in a wider environment and efforts to educate the public about the importance of awareness of pain in people with developmental disabilities are also recommendations that have the potential to have a

greater positive impact. Thus, through an interactive application design approach. This research has made a valuable contribution to increasing public awareness of the pain experienced by children with developmental disabilities.

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