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INVITED SPEAKER

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PREFACE

Bismillahirohmanirrohim Assalamualaikum warahmatullah wabarakatuh

Alhamdulillahhi rabbilalamin. All of our praise and gratitude for the presence of Allah SWT who has bestowed His sustenance, mercy and guidance so that we can be given the opportunity, health, strength and ability to carry out the First International Conference by the Library Study Program and the FIP UPI Information Science.

This proceeding was compiled to document the ideas and results of research related to the international theme of the conference "Roles of Library Science, Documentation, and Archives in Education in the Era of Technology and Information". Participants who attended the international conference consisted of academies, lecturers, school librarians and other information institutions.

On this occasion, we also appreciate and thank you to all the speakers who have contributed to the international conference. Our thanks to the leaders of the Faculties and Universities who have fully supported our activities, finally hoping that this seminar can enrich the library's scientific treasures.

Riche Cynthia Johan

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THE USE OF JAWS TO ENHANCE INFORMATION LITERACY CONCERNING THE BLIND COMMUNITY IN PERTUNI SEMARANG

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ABSTRACT

The information era has changed the role of information literacy in the society. Being literate in this era means that a person holds power to change and enhance his/her life quality; this means that information literacy should be a basic right – that every person should have equal access to acquire it, including people who have special needs due to, for example, visual impairment. Visually impaired people have limited access to information, especially information in text form. Even though visually impaired people can use braille to gather information, the process of transforming information into the braille format fails to follow the rapid production and use of information in the information era. This condition has caused people with visual impairment to have a lower level of information literacy. To solve this problem Ted Hunter invented in 1989 a screen reader called JAWS and the reader has been continually improved since then. The JAWS screen reader is used worldwide to help people with visual impairment enhance their access to information, and the screen reader is also used by the blind community named Dewan Perwakilan Wilayah Persatuan Tunanetra Indonesia Semarang (DPW Pertuni). However most of the members of the DPW Pertuni Semarang community are not familiar with the technology, therefore this research aims at evaluating the impact of the JAWS Software concerning the level of information literacy of the Pertuni members. From our research we find that JAWS helps the members of the Pertuni community enhancing their information literacy, however, it is not all of the members. Rather, the majority of the group needs more than just technology; technology helps to increase the access, but it cannot motivate the members of the community to level up his/her motivation concerning their behavior toward information and not able to increase their critical thinking ability.

Keywords: Information literacy, pertuni blind community, JAWS

INTRODUCTION

Jared Diamond (1997), an American physiologist, ecologist, biologist, geographer, and anthropologist states in his influential book, Guns, Germs, and Steel states that human history is divided into four eras: the hunter-gatherer era, the agricultural era, the industrial era, and the information era. The last era has caused a significant change in society, the main characteristic of this era is the massive production, distribution, and use of information in order to level up the life quality of society. According to UNESCO information literacy should be seen as a basic human right in the information era, which means everyone without exception needs to get equal access to information (Alexandria Proclamation, 2005).

The vital role of information makes the position of information literacy become more important than ever. Traditionally, information literacy is defined as a set of skills to seek, access, evaluate, manage, and use information effectively and efficiently. According to Sundin (2008), the skills-based approach has many weak points, but the main critical point is we can not simply a describe a literate person based on the evaluation of his and hers information skills. The rapid development of IT, effects the concept of information literacy, an information literate person is seen as an individual who actively use technology products in order to full fill his or her information needs (Dunway, 2011). This perspective of information literacy based on the development of IT is largely adopted in society. Different kinds of IT products have been designed to enhance information literacy, one of these producst is a screen reader the so-called JAWS (Job Access With Speech).

JAWS is a widely known screen reader developed for computer users whose vision loss prevents them from seeing screen content or navigating with a mouse,. JAWS was invented by Ted Hunter in 1989. JAWS provides speech and Braille output f o r t h e m o s t c o m m o n c o m p u t e r a p p l i c a t i o n s o n P C (<u>https://www.freedomscientific.com/Products/Blindness/JAWS</u>) which means it also increases the ability of visionally impaired people to access information on the internet. The benefits offerd by JAWS, made one of the blind organizations in Semarang, Indonesia, Persatuan Tunanetra Indonesia Dewan Perwakilan Semarang (DPW Pertuni Semarang) decide to introduce JAWS to their members in order to enchance their access to information.

As stated in an interview with a member of Pertuni, DPW Pertuni Malang has since 2007 given intensive training to their members concerning how to use JAWS screen reader. This intensive training aims to make the members of Pertuni familiar with and skilled in accessing information on the world wide web using JAWS. Furthermore, Surva Ndaru, a representative of Pertuni, accentuates that the committee

strongly believes that JAWS will be able to help members of Pertuni enhance their information literacy. Before the community was introduced to JAWS, their members were facing many difficulties gathering of information. The difficulties were caused by different factors: firstly, the members of Pertuni are excluded from the society; thereby the cannot be informed about what is going on in their surroundings. Secondly, most of the members are illiterate, they do not know how to read braille. Thirdly, they do not have access to the internet (Surya Ndaru, personal communication, August 30, 2018).

From the interview above, and understood from the technological determinism paradigm (Mauludi, 2018), we can conclude that the members of Pertuni see JAWS as a product of technology which, in itself, has the power to bring a positive effect to their community. Hence, from this perspective, by introducing JAWS to the Pertuni community is seen as solving the problem af the information literacy of the members. This perspective, however, neglects the social context of technology and literacy. Information literacy that involves technology, is produced, developed, adapted, and used in the social context(s) of society. Therefore, in the following, we will focus on evaluating the effects of JAWS on information literacy using the social paradigm in relation to DPW Pertuni Semarang. This means that we will follow two steps concerning the Pertuni members: analyze their information needs, their searching, their evaluating, and use information using JAWS and see how the social context affected each step.

LITERATURE REVIEW Information Literacy

Kay and Ahmadpour write in 2015 that information literacy has gained more and more interest over the past of 20 years because of three main factors. First, due to the net generation, those who born around 1977 to 1997, has grown up in an digital environment but nevertheless they lack information skills. Second, the huge amount and diversity of information has caused a cognitive overload and anxiety. Third, the second mentioned factor has caused the need to understand information concerning, search, evaluation, and use - and information literacy, has become the key point to develope the life quality of an individual.

Much literature dealing with information literacy see information literacy as a set of skills to understand information need, search, evaluation, and use of information, or they see information literacy as understanding information need, search, evaluation, and use of information together with technology.

These two paradigms understand information literacy related to a closed

process between individuals and information through a set of skills or technology as the medium. Davis and Sumara (2002) argue that information literacy can not be seen as a closed process between individuals and information, because information is produced, shared, and used in a society. Hence, the society also forms the individual so that an individual will be able to construct meaning, have a critical perspective, understand the context of information and how to apply the information through interaction and problem solving in his/her social life.

In this research, we try to combine three paradigms of information literacy; behaviouristic (set of information skills), technology, and the social paradigm to analyse how a technology product the screen reader JAWS is applied and used in a blind community in order to enhance the information literacy of its members.

This combination of the three paradigms defines the stand point of this article. Therefore, we analyse 1) the set of information skills which are shown by Pertuni Semarang members when they use JAWS to access information, 2) how their social and economic condition influence their information skills, and, finally, 3) how they conduct their information skills and behaviour in certain social and economic settings.

JAWS

Job Access With Speech (JAWS) is a well known screen reader invented 1989 b y T e d H u n t e r f r o m t h e c o m p a n y F r e e d o m S c i e n t i f i c (https://www.freedomscientific.com/Products/Blindness/JAWS).The secreen reader is a software apllication which helps visual impaired people to interact with a computer, so they will be able to "read" information related to files, folders, icons, graphic, text, menus, dialogue boxes on their computer through audio.

A visually impaired individual, when he/she accesses a computer he/she will use a combination of screen reader commands and operating system commands in order to be able to do a multitude of tasks with the computer. JAWS as a screen reader works in operating systems such as, Linux, Mac OS and Windows and has ten language standards: American English, British English, Castilian Spanish, French, French Canadian, German, Italian, Brazilian Portuguese, and Finish. One particular strong point of the screen reader is the capability to read texts in different ways. Key commands on the screen reader will make the screen reader have a precise navigation through the whole text. A "say all" command will read the full document from where the cursor is pointed on the screen through the end of the document or until it is "broken off" by another command. With JAWS the reader is also able to skim the text, or reading only certain parts of the text (Dewi, 2008).

JAWS is a rather complex application. It is not only able to help people with

visual impairment to browse, but it is offering verbal and also tactile feedback; eventough there are some weak points with JAWS, like it is not capable of reading complicated pictures, diagrams or graphics, it still can, especially if it used by a competent/experienced user, turn to be a piece of powerful technology which can be used to access diverse information in the internet.

The Pertuni Blind Community

Based on research conducted by Habsyiyah (2015), visually impaired people in Indonesia are, generally, seen as a minority – and their socio- economic, cultural, and political conditions are poor. This, however, has lead a group of visually people impaired to established an organization, a blind community, called Persatuan Tunanetra Indonesia (Pertuni) in 1966.

The main purpose of Pertuni is to help visual impaired people in Indonesia to eliminate discrimination, and to help their members become smart, independent, capable, as well as productive individuals. The members of Pertuni can be classified as Anggota Biasa (visual impaired individuals), Mitra Bakti (volunteers), and anggota kehormatan (steering comitee) (http://pertuni.idp-europe.org/).

Based on information published on their website, Pertuni is an national blind community organization which has branches in different areas in Indonesia. The main organisation, lead by an excecutive comittee, called Dewan Pengurus Pertuni, is located in Jakarta. Dewi (2008), states that Petuni focuses their programme on information literacy, education, and financial issues of their members. The Pertuni community can be considered as a close community, since the members of each branch knows each other, and, thereby, have a strong bound; furthermore, the members share similar overall values and experiences.

In order to be able to achieve their goals and succeed with their programme, the Pertuni Community has build libraries which are friendly to visually impaired people, they conduct different kinds of focus group discussions, they arrange workshops, seminars, and also conferences and they actively search for new members to join with their community – thereby, they can help the new members which, in turn, might help the community to develope for the benefit of the life of visual impaired people in Indonesia (http://pertuni.idp-europe.org/).

METHOD

DPW Pertuni Semarang is a blind community located at Jalan Badak III number 42 Semarang. This community is established by DPD Pertuni Jawa Tengah, Yayasan Mitra Netra and also UDINUS. There are 17 members of the Pertuni Community; 9 of the members work at massage parlours, 4 of them are selling chips and cake, 2 of them are working as teachers and the last 2 members are students. The educational background of the Pertuni members is as follows: Elementary school (15 members), bachelor degree (1 member), and master degree (1 member). Hence, the members of the Pertuni Semarang community have, in general, poor educational, socio, and economic conditions.

Since 2007, the Pertuni Community in Semarang has actively arranged different kinds of events and formulated a programme specifically related to information literacy. One of the most important programmes is JAWS. The comittee in the Pertuni community teaches their members how to install and use JAWS; they train every member to be able to use JAWS. The comittee believes that in the era of information and technology, JAWS is the answer for the information literacy problems of their members.

In this research, we have interviewed the 17 Pertuni members about how JAWS influence their information needs, their search, evaluation, and use of information and how they see the social, cultural, and economic background which have caused them to show a certain behaviour in their information needs, search, evaluation, and use of information. We apply a qualitative approach in this research in order to have a deeper understanding of the information literacy of the Pertuni member in this in their natural settings.

FINDINGS

In this research, we try to combine three paradigms of information literacy; behaviouristic (set of information skills), technology, and the social paradigm to analyse how a technology product the screen reader JAWS is applied and used in a blind community in order to enhance the information literacy of its members (Ahmadpour, 2014).

This combination of the three paradigms defines the stand point of this article. Therefore, we analyse 1) the set of information skills which are shown by Pertuni Semarang members when they use JAWS to interact with information, 2) how their social and economic condition influence their information skills, and, finally, 3) how they conduct their information skills and behaviour in certain social and economic settings.

Information Needs

Williams (2009) describes information need as the awareness of uncertainty in decision making. Information need also refers to the extent to which information is required to solve problems. Most of the members of Pertuni Semarang show that their information need mostly concern economic information as well as social and entertainment information. From the interviews with the members of Pertuni Semarang we can see that they state that they do not have information needs; in their everyday life they do the same activities; they spend most of their time working and after work they go back home to their familes. Their work is solely practical work, and they already know how to do their work (e.g. routines). Information is not needed since they do their work repetitively over years. As can be seen from the interviews with Pertuni Semarang members below:

"what is the use of information? From day to day I just work with similar things. Selling chips in the morning then back" (IND) "I don't need any information, I'm a masseur since 1990" (AD)

From the interviews, we also know that the members of Pertuni Semarang have limited interactions with others (except from people at work and of course their families); this also influence them to be unaware of their information needs. Furthermore, they explain in the interviews that their low income is making them unwilling to "waste" their time thinking about their information needs. This is a common mechanism; information needs do not seem urgent to fullfill, compaired with the needs to be able to eat, drink, have clothes, and shelter; taking care of these needs, then, in general, take over the curiosity concerning the surroundings. Furthermore, the level of education of the Pertuni Semarang members influences their awareness of information needs; their level of education, is generally, low - for example did only 10out of 17 members only graduate from elementary school. Information need requires a critical thinking process which operates on different levels of consciousness. Therefore, information needs may not be clear to everyone, especially people who have a low level of education (and low incomes); still it is a fact that everyone have information needs - for example in order to do their activities no matter how simple these activities look like and no matter if the information needs are realized; this, of course, is also the case with the members of the Pertuni Semarang.

From research conducted by Habsyiyah (2015) we know that blind people in Indonesia are seen as a minority. Blind people need to struggle hard in order to get decent jobs; most blind people work as masseurs or food sellers with low income; therefore, they foucs on financial acquisitions including commerce and service. Their working conditions require them to know how to perform these economic activities in order for them to get the most in return from their efforts. Based on observations we can see that the Pertuni Semarang members need to have information related with how to sell chips, where and when to sell it, new massage techniques, how to keep a massage parlor hygienic etc. With Igwe (2012) we can conclude that these conditions lead the Pertuni Semarang members to have information needs which can be classified as economic information needs.

Yet, there are other important information needs which are implicitly shown by the interviews with the Pertuni Semarang members; these needs are social and entertainment information needs related to certain social conditions. From the interviews we learn that the Pertuni Semarang members feel different because they are threated differently by people outside their own blind community. Some of members get a bad treatment from people in the surrounding society because of their disability. They are, for example, met with the (superstious) belief, that if "normal" people get close to/with blind people the "normal" people will be cursed by an evel spirit – therefore, they will keep their distance to the blind people.

This distanced treatment from the surrounding society make the Pertuni Semarang members have a strong bound with their famillies and the other members of the blind community. Hence, they are truly concerned with what is going on inside their social circle; this concern clearly shows that they have information needs which can be categorized as social and entertainment information needs.

The above mentioned information needs influence, in an interesting way, how the Pertuni Semarang members make use of JAWS. Most of the members state that they prefer to fullfill their information needs by communicating face to face with their friends but, due to their disability, they use JAWS to contact their friends through various social media platforms. Based on the interviews, the members state that even though that do not like to use JAWS, since they feel distanced with their source of information, JAWS truly help them because not always will they have time (and possibility) to go and meet their information source in order to full fill their information need.

Below members of Pertuni Semarang elaborate on JAWS full filling their information needs:

"whenever I want to know if there is social help for blind peopl, I will ask Mr. Indra or friends in other community, but because of my limited mobility I use JAWS to access facebook so I can contact my friends" (IRA)

Hence, most of the Pertuni Semarang members tell that their information needs concern economic information and social and entertainment information needs; these information needs, due to their disability, lead them to use JAWS; however, JAWS is

used as their last option because they do not feel comfortable using it.

Information Searchings

Wilson (2000) define information searching as the purposive searching for information as a consequence of need to satisfy some goals. Information searching behaviour is usually affected by some factors as mention by Boyol (2006). He stated that information searching is situation dependent activity where a searcher's behaviour are influenced by access to information perceived quality and trust in the information sources. From the information needs we can see that the majority of Pertuni members they do not realize their information needs. It caused most of them become passive information seeker, only a few of members who shows they are actively search for information. The information searching in Pertuni Community shows unique patterns, for members who has significant role in the community they have tendency showing that they are actively searching information, for members who does not have, they become passive information seeker.

Members with significant roles in community think that they are responsible to develope their community, they want to help other members of Pertuni to become more knowledgeable, and motivate others to actively searching for information. These leads them to searching information actively and disseminate information to other members, they feel embarass if they are not able to answer others question. For other members who doesn't actively search for information they said that they do not looking for information since they feel they do not need it, but surprisingly, if members who has important role share certain information which caught attention from others, the passive information seeker in their community will display more active information searching. It is because Pertuni members are really close to each others, so they really care about "popular information" inside their social circle. Based on interview with members of Pertuni who shows passive information searching behaviour, the reason why they become passive seeker because of they do not have access to information source.

"it is so difficult, I get the information from Mr. Indratno or *Dinsos*(AD) "*if I'm look for information related to massage I only ask people from my community, since that information is not well known" (AND)*

Eventough, in the information needs most of members mainly displays economic and social- entertainment information needs, but it's turn out that their needs are special. Their economic information need for example, their job as blind massaeure makes them need information related to funding's help from goverment, or massage training, and so on. This kind of information is difficult to access. They only way to access it is trough their community or try to contact other blind community members, in this point they need to use JAWS. JAWS help Pertuni to be in contact with members from other blind community and also make them to be able to share the information easily. But, most of the members prefer not to use JAWS because they think it is not convinient and sometime it caused a lot of misunderstandings.

"using JAWS because it is easier, but I prefer to have face to face communication if its possible" (IND).

JAWS is used in information searching process of the members of Pertuni when members meet two conditions. First, if they need to search information from other community or from goverment, second if the information they need is written in long text and doesn't accessible verbally. The use of JAWS in searching process helps members of Pertuni to boarden their information access outside their community. Eventough, because the bonds of the community make members only care about information related what is going on inside their community, but with JAWS they starts to have more access to information outside their community, which caused them become more open up and care about other blind community.

The conclussion concerning information searching are: a) members who has significant roles in community displays more active information searching behaviour than other members and b) JAWS helps Pertuni members to search information outside their social circle, which caused the community more open up to outside world.

Evaluating Information

In information era weconstantly evaluate information to guide our decisionmaking process in both our personal and professional lives, it is also aplies to blind people. JAWS make them easier to access internet, which means that Information is available at fingertips around the clock. Not only is it easier to access information, but there is a lot more of it. It can be challenging to evaluate the quality of information because not all the information available is useful and accurate. Evaluating information is an important skill that involves: authority, timeliness, relevancy, and bias (Bell & Frantz, 2014). Here, we will describes how Pertuni members evaluate online information which conduct by Pertuni members using JAWS.

Authority concerning information related to the credibility of author or person who give the information (Bell & Frantz, 2014). Members of pertuni considerate the authority aspect carefully. When members need information they will contact other members or people which they consider as an expert on that fields. For example, when members need information related to funding help they will contact Mr. Indratno, because they think that Mr. Indratno has more networking with people in social department, when they want to know how to make pastries or other reciepe they will contact Miss. Irna because she is good in cooking and run small buisness related with cuisines. Eventough members of Pertuni consider the expertise of the author, but based on the observation they lack of awarness related to the bias of the author.

The bias of the author can be seen when a member of pertuni named AD ask for information about how to get fundings for her massage parlour to IR. IR is one of active member that consider as "author" of information inside Pertuni Community ask her to give him certain amount of money to pay "cost" to make fundings proposal when actually it is for free. This fact shows that Pertuni members sometime they can not differenciate the true intention of the author, author have tendency to controll the information for his/her own benefits. This condition lessen by the used of JAWS, because some members will be able to contact other author and clarify the information. In other words, even is not significant enough but JAWS open up possibility for members in Pertuni to be able to get more credible author.

Timeliness in information related to the most updated information (Bell & Frantz, 2014). Information which published recently tend to be more credible than older sources. As states before, Pertuni members prefer to get information trough face to face communication with other members, but because of their disability which caused their limited mobility, members of Pertuni can not full fill their information in right time. This condition change after they use JAWS, because JAWS make them able to access internet so they can contact their information source easily. They do not need to wait for someone to drive them in order to meet their information need faster than ever.

"nowdays is easier, just open internet and acess it with JAWS everything is done" (IRA)

From the interview above, members of Pertuni states that they get information in more efficient way because of JAWS. Before they knew JAWS, they need to wait to be able to talk face to face with their information source, eventough they prefer to talk face to face than use JAWS but concerning the efficient of time, JAWS is more preferable.

Relevency related to the content of information is appropriate for your purposes (Bell & Frantz, 2014). Concerning relevancy, members of Pertuni does not have many options to look at how relevant information that they get from "author", it is because, only few people that expert and know which information is right and which information is wrong. Furthermore, members of pertuni trust other members who become authors of information, so whenever that "author" states something, other member will believe that the information is right.

This behaviour of pertuni members motivated by the strong bound with their community which make them trust the "author" of information, because those authors, consider as the leader in their community which mean other members think that they are more knowledgeable. The use of JAWS which explained before, have the ability to make members of Pertuni in contact with other authors does not help much. It is because members trust author inside their community more than other author outside their social circle. This condition, reflected on interview below:

"Mr. Indratno have highest education more than anyone here and have a lot of friends and strong connection, so it is easier to ask him then ask others" (AND)

From the interview above, we can see that members of Pertuni trust the author which come from their inner social cirlce because they know their credibility, they know their level of education and ability which leads them become less criticize about the content of information which given to them by the author.

The conclussion about the evaluation of information conduct by the members of Pertuni shows that members evaluating their information and JAWS help them to do that, but it is not maximum because the special bonds with the author inside their community caused then to be less aware of the quality of the information.

Bell & Frantz (2014), define use of information as a cognitive process conduct by individu to apply information in order to solve their problems. After members of Pertuni evaluate their information, the next step is applying the information to full fill their information need. The main barriers related to the use of information is the difficulties faced by membersof Pertuni when they need to use information which involves a lot of cognitive process. When researcher conduct an observation, researcher find out an example to show the difficulties. There is a member of Pertuni so called AD have problems related to his jobs. He selling chips, but he does not sell enough. This problems make him try to contact other members in Pertuni who he consider succedd in selling chips, his name is IND.

So IND told him how to make tasty chips and AD succedd, but then when IND try to teach him how to communicate with the customer so AD will be able to have loyal customer, but AD seems find difficulties because he does not know how to build up communication. He only know how to tell the customer about the prize. Even tough the customer actively communicate with him ask a lot of question about his chips, AD seems not talkative enough and he does not able to show the customer how good his product is in strong way, he find difficulties in promoting his product. He does not able to think critically which part of his product will attract customer interest.

Lack of ability in apllying information to solve their problem caused most of members of Pertuni could not increase their life quality, this condition worsen with the low level of information quality which they get. JAWS could not help in increasing the ability to use information among the members, because critical thinking is not something that can solve with technology.

CONCLUSION

JAWS have the ability in order to help members of Pertuni related to understanding information needs, information searching, and evaluating but could not help Pertuni Member in enhancing their ability using information. JAWS help members of pertuni increase their information literacy eventough is not significant. The information literacy problem in Pertuni Community happened because of their socio economic condition and it can not easily solve by applying technology. The social condition of Pertuni members caused them find difficulties in order to conduct cognitive and critical thinking process, which have important role in determining the level of information literacy.

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