

**MAUU5900**  
**MASTER THESIS**  
**in**  
**Universal Design of ICT**

**August 2019**

**Online training platform for right to protection from sexual  
abuse for persons with intellectual disability in  
Mozambique**

Monika Shrestha

**Department of Computer Science  
Faculty of Technology, Art and Design**

**OSLOMET**

## **Preface**

This master's thesis has been one of my best experiences so far. I was fortunate enough to do fieldwork in a beautiful country Mozambique. Getting to experience different culture, people and given the opportunity to share my ideas and their experiences have made me a better person than I was yesterday. So, I would especially like to thank my supervisor George Anthony Giannoumis for giving me this opportunity. I would like to thank him for his immense motivation and constant support and for believing on me when things weren't working as expected. I would also like to thank people from Edwardo Monlande University and all my friends for helping me for my data collection back in Mozambique.

## **Abstract**

This paper outlines the overall picture of sexual violence around the globe, their issues of prevention along with the outcomes and training available. The research has given centrality to people with Intellectual Disability in Mozambique. And suggests an online training platform, which provides preventions techniques for sexual abusive situations. The research further focuses on its effectiveness on people with intellectual disability and collects data through interviews conducted on three stakeholders i.e., people with Intellectual disabilities, their caretakers and health care professionals. A semi-structured interview was conducted to gather the data from three user groups. The interview conducted gathered experiences regarding sexual violence and their opinions on intellectual disability rights in Mozambique. Persona was used for the usability testing of the system. The collected information was further analyzed using a thematic analysis approach. This approach was used to refine the interviews and gain in-depth knowledge of the data collected. The results suggest that the effectiveness of the system can only be engaged if all the services required to use the system are available. Thus, ICT barriers must be reduced to use the system in Mozambique. Else, basic training must be provided beforehand to use the system.

# Table of Contents

<b>1</b>	<b>Introduction:</b>	<b>5</b>
<b>2</b>	<b>Background:</b>	<b>7</b>
2.1	Overall Picture of sexual violence:	7
2.2	Issues of prevention:	10
2.3	Outcomes:	12
2.4	Training:	12
2.5	Training through Technology:	13
2.6	People with Intellectual disability and technology usage:	14
2.7	Applied Behavior Analysis training reference:	14
2.8	Why Mozambique?	15
2.9	ICT in Mozambique:	17
2.10	This research does not include:	18
<b>3</b>	<b>Methods:</b>	<b>19</b>
<b>3.1</b>	<b>Section-1:</b>	<b>19</b>
3.1.1	Semi - structured interview:	19
3.1.2	Participant Observation	20
3.1.3	Persona:	20
3.1.4	Pilot testing:	28
3.1.5	Changes on the interview guide:	29
<b>3.2</b>	<b>Section-2:</b>	<b>30</b>
3.2.1	Thematic Analysis:	30
3.2.2	Participants:	32
3.2.3	Materials:	32
3.2.4	Interview conducted in Mozambique:	32
<b>4</b>	<b>Ethical Considerations:</b>	<b>34</b>
<b>4.1</b>	<b>Privacy and confidentiality:</b>	<b>34</b>
<b>4.2</b>	<b>Respect for participants:</b>	<b>35</b>

4.3	Transparency and Honesty: .....	35
4.4	Translators and confidentiality: .....	35
<b>5</b>	<b>Results and Analysis:.....</b>	<b>36</b>
5.1	Development:.....	36
5.1.1	System Architecture: .....	36
5.2	Features of the project:.....	42
5.2.1	Main page:.....	42
5.2.2	Role and responsibility:.....	43
5.2.3	Sign Up: .....	44
5.2.4	Login: .....	45
5.2.5	Dashboard:.....	46
5.2.6	Result view:.....	47
5.2.7	Training page: .....	48
5.3	WCAG guidelines manual evaluation .....	50
5.4	Findings.....	54
5.4.1	Isolation: .....	54
5.4.2	Lack of basic services: .....	55
5.4.3	Lack of laws and its implementation: .....	57
5.4.4	Lack of awareness and trainings: .....	60
5.5	Persona Findings:.....	62
5.5.1	Stacy:.....	62
5.5.2	Hanifa.....	62
5.5.3	Julia .....	62
5.5.4	Armando .....	62
5.5.5	Alberto .....	62
<b>6</b>	<b>Discussion:.....</b>	<b>63</b>
<b>7</b>	<b>Conclusion: .....</b>	<b>67</b>
<b>8</b>	<b>References: .....</b>	<b>68</b>
<b>9</b>	<b>Appendices: .....</b>	<b>74</b>
9.1	Interview Guide prior pilot testing.....	74
9.1.1	Observation Questions .....	74
9.1.2	Interview Questions.....	74

<b>9.2</b>	<b>Interview Guide after pilot testing.....</b>	<b>74</b>
9.2.1	Interview guide for caretakers.....	74
9.2.2	Interview guide for individual with Intellectual Disability .....	75
9.2.3	Interview guide for social workers.....	76
<b>9.3</b>	<b>Database of the system:.....</b>	<b>78</b>
<b>9.4</b>	<b>Consent form:.....</b>	<b>80</b>
<b>9.5</b>	<b>Field notes:.....</b>	<b>84</b>
<b>9.6</b>	<b>Code Description.....</b>	<b>87</b>

## Table of Figures

Figure 1: Number of registered cases of violence in the Gabinetes de Atendimento (Francelina Romão, 2007).....	16
Figure 2: Number of cases of Domestic violence against children aged 0-17 years registered at GAMC (offices for services to Women and children victims of violence) and services sections on 2011(Rock, 2013).....	17
Figure 3: Field noted taken during interviews for analysis.....	31
Figure 4: Useful direct quotes from participants underlined for analysis .....	31
Figure 5: Images of transcripts and data notes and separated onto different themes. ....	32
Figure 6: Component Diagram of the overall system .....	37
Figure 7: Flowchart for new user registration .....	38
Figure 8: Flow chart for username and password validation .....	39
Figure 9: Flowchart of take quiz function.....	41
Figure 10: Home page of WCFID website.....	42
Figure 11: Magazine section on the website .....	43
Figure 12: Registration view page on the website .....	44
Figure 13: Login view of the website with input filed validations.....	45
Figure 14: Login view of the website with input filed validations.....	45
Figure 15: Quiz dashboard after login. ....	46
Figure 16: Results showing all the right answers on the result view page.....	47
Figure 17: Results showing wrong answers along with right ones. ....	47
Figure 18: Beginners level view page.....	48
Figure 19: Intermediate level view page.....	49
Figure 20: Expert level view page .....	49
Figure 21: Comparing system with WCAG 2.1 guideline.....	53
Figure 22: Wcfid database with its two tables. ....	78
Figure 23: Quiz table of the wcfid database. ....	78
Figure 24: User registered table of WCFID database.....	79
Figure 25: Code file description.....	87

**Keywords:** Disability; Exploitation; Prevention; Program evaluation; Sexual Violence; Victimization; Women; Sexual abuse; Children with (mild) intellectual disabilities; ABA technique; Youth care; Foster home; Culture; gender; school-based prevention programs; theories of child sexual abuse; videoclips; flip cards; treatment; ethics; Child and adolescent; psychiatric disorder; primary prevention; school-based prevention programs; child sexual abuse (CSA); behavioral skills training; generalization; assessment; semi-structure method; thematic analysis; ethics; privacy and confidentiality; Transparency; intercultural communication (ICC) competence; persona; interpreters; social isolation; superstition; language barriers; bribery.

## **1 Introduction:**

The World Health Organization (WHO) published a world report on disability states that, 15% of the total population today is found to be facing some form of disability and living with it. They also stated that the number will be growing because of the high number of an aging population and the global increase of chronic health conditions that are related to disabilities such as cardiovascular diseases and mental health illness. Thus, with these increase in the population with various forms of disabilities, arises various forms of disabling barriers. So, to address those barriers and inequalities developed and to overpower them, several pieces of research and programs are required to be taken into consideration (WHO, 2011).

Moreover, according to National Public Radio (NPR) investigation on the USA, People with Intellectual disabilities are found to be sexually assaulted seven times more often compared to people with no form of disabilities. Besides, they also stated that the police and persecutors are also often found to be unwilling to take the cases in hand, only because they are difficult to handle and that their cases are difficult to win in court (SHAPIRO, 2018). Hence a lot of focus and attention is required to safeguard these user groups to prevent them from such demoralizing assaults.

Although there has been relatively a lot of researches conducted previously concerning sexual violence, a closer look suggests that very few researches have been made for people with Intellectual Disability (Horner-Johnson & Drum, 2006). This proposal argues that, despite the prevention techniques taken into consideration, the struggle remains the same. This is because all those prevention and training that were provided lacks the result and their effectiveness is found to be



in minority. Additionally, programs providing those methods on a virtual platform is none which is a must in today's world of technology.

Thus, this study is an attempt to address the issue of sexual violence among people with Intellectual disability in Mozambique. It aims to provide an online training platform which will provide not only provide training techniques to people with intellectual disability but also aims to teach and self-help themselves from harassment situations, as well as their caretakers about their responsibility on that matter. The research questions on this paper introduced to examine:

“How can online training platforms used as an ICT solution, assist people with intellectual disability to overcome and prevent themselves from sexual violence?”

A semi-structured qualitative interview was conducted with social workers to understand the root issues of sexual violence and details regarding people with Intellectual disabilities. Another interview was conducted with people with Intellectual Disability and their caretakers individually to understand their vision, expectations and to gather the experiences they had regarding sexual abuse.

Hence, this paper briefly discusses the various traumas that a person with Intellectual Disability faces in daily life situation, because of sexual victimization. It also further researches on the prevention techniques that were taken into consideration and addresses the gap in those methods. At last, a discussion is provided to address the results from the data collection, the issues, the recent researches that are made to prevent sexual violence among people with Intellectual Disability and their possible solution.

The papers also analyze how pieces of training provided on a web platform, might help people with Intellectual Disability to protect themselves during vulnerabilities. Furthermore, the paper has also examined the needs of special prevention programs, through an interview conducted among the people involved i.e., the social workers, the caretakers and the individuals with Intellectual Disability. Finally, the paper has concluded with recommendations that online training platforms should offer in terms of training to people with Intellectual Disability as well as their caretakers.

## **2 Background:**

In this section, the global picture of the sexual violence, the issue with the prevention programs, outcomes, along with the training methodology used has been discussed.

### **2.1 Overall Picture of sexual violence:**

The World Health Organization (WHO) defines sexual violence as “any form of sexual act or an unwanted attempt to obtain a sexual act, the unwanted sexual comments, or advances, acts to traffic or otherwise directed, against a person's sexuality using coercion, by any person regardless of their relationship to the victim in any setting, including but not limited to home and work” ((WHO), 2002). Sexual violence has been found to be occurring on every culture, and the only difference found was the definition to it. There are different forms of sexual violence and the examples would be, male-male, male-female, male-transgender, etc.(Fischbach & Herbert, 1997; Shayegan, 2014).

The research by (Fu et al., 2004) and other studies claim that everything that an individual is a today is mostly shaped by the culture that he/she is born in and the environment that he grows on acquiring cultural values, attitudes and behaviors. Culture plays a vital role in how they perceive and processes sexual acts as well as sexual violence. In the paper (Kalra & Bhugra, 2013), they seem to validate the view that, “Different cultures describe certain forms of sexual violence as an offense which they can't tolerate any other forms that may be tolerated to a degree, the culturally acceptable forms of violence”. For example, in South Africa, only the rape of white women was prosecuted under an apartheid system, while sexual violence against black women was accepted as a part of life (Armstrong, 1994).

The available pieces of evidence seem to suggest that Gender-based violence in current context has been recognized as the most important behavioral act in terms of gender inequalities and gender power relations in all the societies of the world (UN, 2018). United Nations Declaration of the Elimination of Violence against Women in Article 1 defined the term ‘violence against women’ as any form of gender-based violence act that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women. It includes threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life of the

victim (Assembly, 1993). Even though violence is acknowledged here as inherently gendered and that both men and women can be victims as well as perpetrators of violence, it is necessary to understand that women and men experience violence and conflicts in different ways.

According to (McIlwaine, 2013), the gender-based violence varies according to geographical scale as well as a range of other casual and contextual processes. The cities of the global souths don't generate the violence themselves, however, the processes of urbanizations heighten the risk factor for the women, making them more vulnerable to violence. On the other hand, they might also create opportunities for them to deal with them more effectively. According to (Erbaugh, O'Toole, Schiffman, & Kiter-Edwards, 2007), they have provided two main explanations for violence against women. The first interprets that violence is rooted in biological differences which effectively means that changing male behavior is extremely difficult. And, the second favored by feminist, relates to male violence to the social constructions. While many of the causes and risks were outlined, another reason for the violence was found to be the economic condition of the victim. In a study of married women in Lima, Peru, it was found that the proportion of poor women who had experienced domestic violence was higher than for women from middle-class backgrounds (de Olarte & Llosa, 1999).

According to (McCarthy & Thompson, 1997), in a prevalence study of sexual abuse of 65 women and 120 men with intellectual disabilities who were referred for sex education, the prevalence rate of abuse was found to be significantly higher for women (61 percent) than men (25 percent). Almost all perpetrators were men, with the majority being men with intellectual disabilities or fathers. Women are shown to experience the sexual contact more negatively than the men, although it was usual for both the women and men to feel quite ambivalent about the perpetrator and what he had done to them. Typically, the abuse was revealed by the victims themselves, but they were unaware of its social meaning. Generally, responses to the abuse were very weak, however, there is evidence that the abuse of men is taken more seriously. The poorest service responses were recorded for women who had been abused by men with Intellectual disabilities.

Moreover, child abuse has also been imperative public policy issue over the last two decades in many European countries and there is a growing consensus about the prevalence and dynamics of such abuse (BROWN, 2011). For example,

two studies were executed in Ireland which provided background information about the abuse of all children (Goode, McGee, & O'Boyle, 2003; McGee, Garavan, de Barra, Byrne, & Conroy, 2002). McGee et al. proposed in the SAVI report that 20 percent of all women participants were sexually violated with physical contact when they were young and that 16 percent of men had been similarly violated as boys. A further 10 percent of girls and 7 percent of boys had been abused emotionally but not physically. A total of 40 percent of these incidents were ongoing and had no single occurrences. Of these 5.6 percent of girls and 2.7 percent of boys had been raped when they were children or adolescents and unfortunately, 40 percent of them hadn't told anyone about it. These figures match the order to those emerging in other countries and broadly in line with Kinsey's initial estimate in the United States in 1953, he stated that 1 in 4 girls and 1 in 9 boys were victims of child sexual abuse. US figures from a congressionally mandated series of incidence studies (Sedlak & Broadhurst, 1996) suggested that girls are three times more likely than boys to be sexually abused. A range of international studies cited by (Goode et al., 2003) reached into the estimates of sexual victimization of between 6-54 percent of girls (depending on the definition of the abuse and the method of study) and 4-16 percent of boys. But in these studies, disabled children, if were represented at all, were not taken into considerations and were not distinguished with other victims. However, the children and young people with intellectual disabilities are deemed to be at more risk of sexual abuse than other children because of their disabilities and their specialist service settings.

The study from (BROWN, 2011) also revealed that the abuses occur mostly in closed systems such as in families, homes, church groups and sporting clubs where the margins are enforced and rigid. Such cases are mostly kept secret due to abusive relationships, hence much of the information's remains informal and vulnerable to being discredited. The National Center on Child Abuse and Neglect (NCCAN) reported that the typical child sex offender molests an average of 117 children, most of whom do not report the offense. It is estimated that approximately 71 percent of child sex offenders are under 35 and know the victim at least casually. A total of 59 percent of abusers gained sexual access to their victims by targeting and grooming them and this is an important dynamic for professionals to understand if they are to remain vigilant to the risk of exploitation. Children with disabilities may

also be abused by their peers and by strangers in public places. They may be at risk within sporting networks and within the care system (BROWN, 2011).

## **2.2 Issues of prevention:**

According to (Zeuthen & Hagelskjær, 2013), the prevention interventions of child sexual abuse (CSA) was categorized into three different categories: (a) CSA prevention interventions, (b) meta-analyses of CSA prevention interventions, and (c) general theoretical models about prevention and the child. Using this structural method, they suggest that a great understanding of the prevention area will be analyzed as they will be thoroughly addressed and also that the model will facilitate the process of identifying potential flaws in area of CSA prevention. Moreover, they stated that most of the CSA prevention campaign is targeted as a primary prevention program i.e., they target the whole population. One of the examples would be the campaign launched by the Council of Europe in 2012. The campaign targeted the European children, their families, and societies as a user group, and their goal was to educate them and equip the necessary tools to prevent and report sexual violence against children. However, the researchers believed that these campaigns aimed the possible offenders rather than the potential victims of CSA. One of the possible ways of prevention of CSA would be child-focused on personal safety programs where the children are taught in schools in groups according to their cognitive levels (Europe, 2012).

A study conducted in 1995 found that from 10 -16 years old children, those who were given the CSA prevention education were more knowledgeable about sexual abuse and were more likely to report the abuse. However, Walsh and his colleagues states that “school-based education programs for preventions, assist children to some extent by empowering them the knowledge and skills to recognize the possible sexual abusive situations and potential offenders. And further, provide them the strategies to avoid those situations whether physically or vocally” (Walsh, Zwi, Woolfenden, & Shlonsky, 2018).

Another approach would be the involvement of parents in the program as it is said that “Home is child’s first school and parents are their first teacher”. According to (Hunt & Walsh, 2011; Zeuthen & Hagelskjær, 2013), “home is the most suitable environment for teaching children. On how they should take care of themselves and that the involvement of the parents has a lot of advantages for the prevention of

abuse. However, they are hardly realized and are rarely involved.” But, there are a lot of claims (Chen & Chen, 2005; Zeuthen & Hagelskjær, 2013) that explains that involvement of parents on the prevention program might create a lot of obstacles as they only prefer to discuss least frightening parts such as: not to walk with strangers with their children and fails to talk about the more serious stuff like that the abuser might be someone they know already or can be from their family member.

While there are a lot of programs and campaigns being conducted in general due to the severe impact of sexual violence, but when it comes to people with intellectual disabilities, very little efforts have been made and that the results of the study are limitedly positive. One of the examples of such program would be The Friendship and Dating Program (FDP), which was conducted to teach people with an intellectual disability the social skills that are needed to develop healthy and meaningful relationships and to avoid violence in dating and relationships. The result of this study showed that the social networks of the participants did increase and that the interpersonal violence did reduce in between them. Yet, the result was gathered within a 10-weeks and the further results remain unknown, which does not explain whether the program reduced the violence by their loved ones or not (Ward, Atkinson, Smith, & Windsor, 2013). Since the victims with an intellectual disability seem to struggle with the concept of sexual consent, healthcare workers and their caretakers will play a vital role in sexual violence prevention for people with Intellectual Disability. The health care professionals if provided specific training of sexual violence, they can possibly detect all the indications that their patients have been unknowingly providing them if suffered from some kind of violence (Mahoney & Poling, 2011). Thus, it is very important to include health workers and caretakers in the prevention programs (Guggisberg, Henricksen, & Holt).

### **2.3 Outcomes:**

According to (McCarthy & Thompson, 1997), professionals and authorities in the past haven't been serious and were sluggish to listen to what people with intellectual disabilities have to say about the issue of sexual abuse. However, she believed that the scenario will be changing. She also believes that the development of both groups and individuals-based sex education programs, the development of more general self-advocacy networks has encouraged various people with difficulties to speak out about the abuses they have experienced.

### **2.4 Training:**

Quite a handful of skills training programs have been conducted for the individual with intellectual disability. According to a skill training program conducted on 1998 (Lumley, Miltenberger, Long, Rapp, & Roberts, 1998), a group of women with intellectual disability was provided a 5-week behavioral skills training program where they were taught to say “no” when required in a sexual abuse condition, say “get away” and inform a staff when harassed. However, the individuals when were tested in role-play situations acted perfectly as taught, but when not informed and were tested under those scenarios, found that the individuals could not react as taught and reacted with their subconscious mind. Thus, to make the skill training sessions more impactful, another training session was conducted by Raymond in 1999. This training program was an in-situ method that was conducted for a 10-week period where the individuals were taught the same response techniques. But in this situation, the individuals were given in situ training for a month followed by in situ assessments and were graded on those assessments too. And if the grades they achieve were lower than the average, another training session was created again. The result of the study showed that even though in-situ training is time-consuming and costly, the results are positive and are more likely to exert stimulus control over their behavior (Miltenberger et al., 1999).

## 2.5 Training through Technology:

A study was conducted by (Frida Kasteng, 2018) featured a mass radio campaign in Burkina Faso, addressing the main causes of post neonatal child mortality which was broadcasted for the 35 months from 2012 -2015. The campaign consisted of 60-sec radio spots which changed every week and was broadcasted 10 times every day along with 2-hour radio show that was broadcasted every weekday evening. The campaign addressed illness symptoms in children and the importance of taking a child to a health facility, nutrition in both pregnant ladies and infants, hygiene practices and institutional delivery. The result showed that there was a 24 percent increase in care-seeking for children and a reduction of 7 percent in child mortality per year. The result of the study suggested that the mass-media campaign can be very cost-effective in areas with high media penetration and low economy scale.

Another study from (Poche, Yoder, & Miltenberger, 1988), featured the effectiveness of video training programs among kindergarten and first-grade students. According to this study, four experimental conditions were presented such as; videotape with behavior rehearsal, videotape, a standard safety program, and no training. The videotape program had a narrator and was made interactive by providing paused for the viewers to reply and praised appropriate responses and corrected inappropriate ones. For example; “if you said \_\_, you’re right, good listening! If you said \_\_, then I’ve fooled you. Watch again”. The result showed that a videotape program with behavior rehearsal was the most effective way of teaching children safe responses and denying the probable abductors by showing videotapes being the second. The study also revealed that only seeing the video once was effective to raise self-awareness on half the population of the children taken for the experiment.

A study performed on distant mentoring strategy using WhatsApp for 2017 bed nets universal coverage campaign (UCC). The study aimed to perform a descriptive analysis of the use of WhatsApp as a supplementary tool for teaching health teams during UCC in Mozambique. The results showed that there were better center-level coordination and better communication between group members (Arroz et al., 2019).



## **2.6 People with Intellectual disability and technology usage:**

Historically, Individuals with intellectual disability have been using technological devices primarily for communication, motor, and visual impairments. However, a recent study shows that they have been using technologies specifically as assistive technologies for functional skills development. They were also found to be using computer devices for general use such as for email, recreational activities, and playing games. Various studies have been conducted on people with intellectual disabilities and the use of technology to improve their quality of living and the results were found to be positive (M. Raspa, 2018). One of the examples of such studies is: a pilot study from K. Riley and the group conducted a six weeks trial study on a woman with the fragile-X syndrome with low intelligence. An assistive device i.e., an electronic reminder system was provided to note down her daily activities to improve her daily living skills. The result showed that there was a significant improvement in the number of activities completed (K. Riley, 2001). Using assistive technologies and mobile apps people with intellectual disability can benefit as it provides them the independence to access the information, maintain social interactions and complete daily tasks which might have been difficult to perform (John Owuor, 2017).

## **2.7 Applied Behavior Analysis training reference:**

Since this paper is based on an online training website, applied behavior analysis training methods are used as a reference to teach the users about various prevention techniques. Various teaching strategies are used under applied behavior analysis. The aim of applied behavior analysis training is the shaping and chaining behaviors among those who need extra help and care to function certain functionalities. The applied behavior analysis training includes specific teaching strategies such as discrete trial instruction, pivotal response training, incidental teaching, fluency-based instruction and many more. Each of these instructional techniques has a rich empirical support base (Baer, Wolf, & Risley, 1968).

Applied behavior analysis method has been proved to be useful for learning on people with intellectual disability. These techniques are found to be helpful for self-care and self-help, to develop work skills, for independent living and hygiene, etc. one of the examples would be a study by Goodson and colleagues on 2007, they performed a teaching technique on four people with intellectual disability to set a

table. The primary job of the participants was to set the tables using plates, glasses, utensils, and napkins. They were taught using video clips with various series of steps analyzed and in case of error, the correction was provided by the trainer. The result showed that video clips were found to be useful but error corrections were also necessary (John Goodson a, 2007). Another study from (Ruwe, 2011) conducted a research on middle school students with intellectual disability. They used direct instruction flashcard system along with passages to teach students about isolated sight words. The result showed that direct instruction flash cards were highly effective in learning than passage reading.

On contrary, this research is primarily influenced by Applied behavior analysis training techniques and thus follows the same training methods for the training through the website such as interactive videos, cue cards, feedbacks being praise or error correction, etc.

## **2.8 Why Mozambique?**

Located in Southern Africa along the India Coast, Mozambique has an estimated population of 30 million people where one-third of this population are found in urban areas and two-third live in rural areas (Eide & Kamaleri, 2009). The world bank indicators of 2018 considered Mozambique as a low-income country with a low human development index, occupying 180<sup>th</sup> place out of 189 countries of the United Nations (UNDP, 2018).

The recent study from USAID shows that the overall literacy rate of Mozambique is 47 percent with a female literacy rate of 28 percent which lags far behind than that of males i.e., 60 percent (USAID, 2019). Therefore, ministry of education and human development of Mozambique approved a law that proposes compulsory schooling from 1<sup>st</sup> to 9<sup>th</sup> grade, which aims at guarantying scholarship fundamental education with inclusive of all national citizens (GCE, 2019). A lot of important steps has also been taken by the Mozambique government on creating inclusive education such as inclusive education policies and plans including national strategy on inclusive education for education of people with disabilities at all levels including all user groups i.e., both child, youth and adults (GOV.UK, 2018). Yet, there is a huge scarcity of inclusive schools, teaching materials, and trained professionals in the country (WORLD, 2015).

According to the UN Women Global Database on Violence against women 2016 report, Mozambique ranks in 139 in terms of Gender inequality index falls under low Human development countries ((UNDP), 2016). The country has no legislation on sexual harassment in public places outside of schools for women and was found to be pervasive broadly in society (Maputo, 2019). A survey conducted in 2004 by Ministry of Women and Social Action (MMAS) found that 23 percent of the female respondents had experienced any form of sexual harassment at some point of their lives (Cecilio Adorna (Principal), 2011). Because of its geographical location, this country also serves as a transit country for traffickers and is a destination country (State, 2012). An analysis conducted by Svevo-Cianci in 2010 assessing the implementation of CRC article 19 stated that Mozambique has no child protection system out of some countries they considered for the analysis (Rock, 2013).

# of cases of VAW registered	2004	2005	2006
Men	1131	2059	2416
Women	6440	6648	8268
Children	1512	1144	1673
<b>Total</b>	<b>9083</b>	<b>10684</b>	<b>12357</b>

*Figure 1: Number of registered cases of violence in the Gabinetes de Atendimento (Francelina Romão, 2007)*

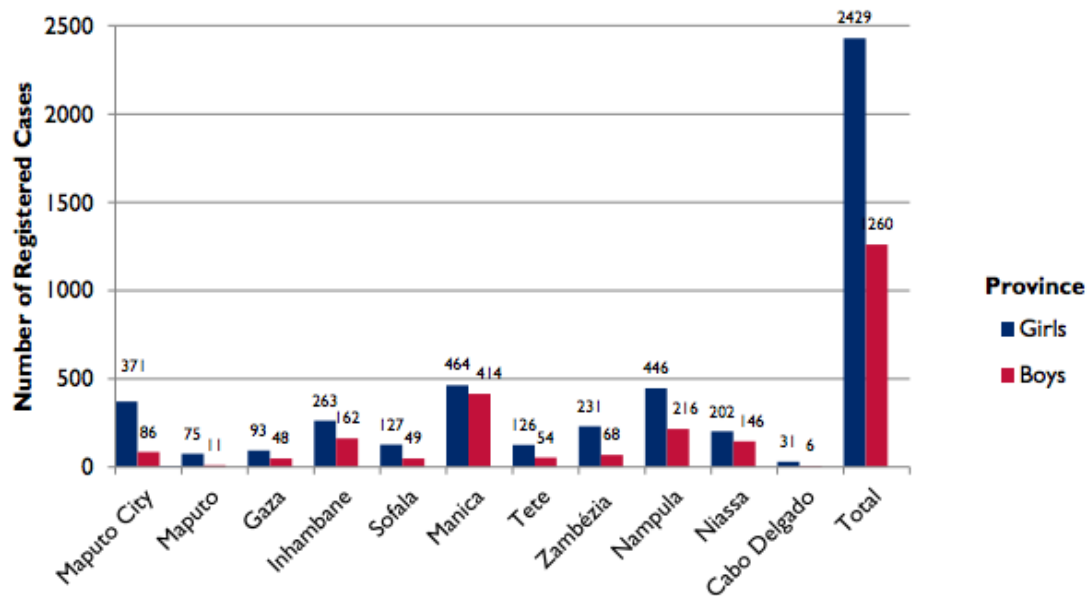


Figure 2: Number of cases of Domestic violence against children aged 0-17 years registered at GAMC (offices for services to Women and children victims of violence) and services sections on 2011(Rock, 2013)

## 2.9 ICT in Mozambique:

In order to make ICT more accessible for the larger population, the government of Mozambique launched “the Mozambique ICT Policy” in 2000. On 2002, the subsequent “ICT Policy Implementation Strategy” was initiated and the goal was to contribute in the reduction of absolute poverty, improve living standards of the citizens and to encourage research and knowledge transformation (Xavier Muianga, 2013).

According to the 2007 census, the number of Internet users was estimated about 0.9 percent of the population at that time which compared to the average African continent was very low. The reason behind was the high prices of bandwidth, lack of PC ownership, high rate of illiteracy, language barriers, lack of awareness and poor coverage of the electricity network at the household level (Francisco Mabila, 2010). Another study from 2011-12 showed that Internet access was 3.6 percent which was still low compared to other African countries. The researches believed that the reason behind the low usage number was due to the high cost of internet, which was due to the lack of competition on the providers (Mabila, 2013).

However, a recent study from 2017 showed that communication usage has increased with internet penetration rates to 10 percent and mobile phone usage to 30 percent. Yet, there were still a gender gap, urban-rural digital divide, affordability and electricity as some issues delaying the ICT development. The mobile phone usage and internet penetration for men was found to be 50 percent, which means half of the men population owned mobile phones as compared to women where only 32 percent of them owned it. The urban-rural digital divide was found to be more than the gender gap in Mozambique with the gap of 85 percent between two areas. Moreover, 66 percent of the rural households lacked electricity with 32 percent on urban areas. In the survey when asked why they are offline, 78 percent stated that they cannot afford a mobile phone and 36 percent reported due to lack of electricity (ALISON GILLWALD, 2019).

### **2.10 This research does not include:**

A lot of researches have been conducted concerning online violence, cyberbullying, cybersecurity, preserving privacy and other strands that exist for cybersecurity. According to the survey of (Picard, 2007), among 615 young people aged 13 -18 years, they found that around 22 percent of the participants reported of doing sexual things said by their partners on phone or Internet despite their discomfort and 17 percent were manipulated and were scared of not responding to texts and calls of their dominant partners, with 1 out of 10 threatened online. Another survey of (Hinduja & Patchin, 2011) also found that 12 percent out of 4400 participants of age 11- 18 years reported of electronic dating violence. However, this research paper does not by any means relate to any of these and is out of those scopes. This research only argues about the usage of training platform and prevention programs online for sexual violence and is focused mainly for people with intellectual disability.

### **3 Methods:**

#### **3.1 Section-1:**

This section consists of the data collection methods that were used during the research program. Primary data collection method was used, specifically semi-structured interview method. The reason for the selection and its possible merits for the project has been discussed further.

##### **3.1.1 Semi - structured interview:**

A semi-structured interview was used for data collection from the people with intellectual disability, their caretakers and the social workers. A semi-structured qualitative method was selected as an interview method because a semi-structured interview provides the freedom to explore topics in-depth that might be harder in a fully structured interview. The interviewers do not require to have fixed variations in a semi-structured interview and have the autonomy to plan several key questions that will further help them to define the areas they want to explore (Rabionet, 2011). Gill and his colleagues define, “semi-structured interviews are proved to be fairly appropriate when exploring sensitive topics. They claimed that these interview methods are effective particularly to those participants, who are less likely to express their experiences and issues especially in a grouped environment” (Gill, Stewart, Treasure, & Chadwick, 2008). Moreover, with the response they receive from the interviewee, the interviewer is allowed to trail out more idea in details. The flexibility of this approach allows the interviewer to further discover and ask for more explanations of the topic that he/she had overlooked. Those overlooked topics might be of great importance to the participants but might not have been thought by the interviewer himself.

However, the semi-structured interview also has more challenges compared to the structured interview. While trying to dig deeper in response to the comments received, the interviewer might go off-topic and also might discuss the related topics more than once. A person taking a semi-structured interview must be experienced and know when to back off from the topics and move on to something else (Dearnley, 2005; Lazar, Feng, & Hochheiser, 2017; Whiting, 2008).

The main purpose of this research interview was to attain the experiences and the views of all the three stakeholders on people with intellectual disabilities, sexual violence and their overall picture in Mozambique. The three stakeholders were asked three different sets of questions, with no form of ordering on the questions and the participants were encouraged to talk more about their experiences and views regarding those topics. Further questions were asked depending on their responses on the topic and they were given freedom not to answer if they were not comfortable on replying. Using this interview method, it was believed that it will help narrow down the areas that need to be considered in the research questions and was also hoped to achieve the deeper analysis of the issues that might arise in between and develop the possible solutions required. With a sensitive topic as sexual violence, the semi-structure method did help to approach and gather required data during the interview process.

### **3.1.2 Participant Observation**

Participant observation is a qualitative data collection method, where the researchers get the most out of basic human experiences, discovering through participants on the how's and whys in a certain context. It is an interactive experience which is relatively unstructured that are usually generated during the observation process, to understand the meaning behind the behaviors such as selecting certain options, making decisions, etc. ("Collecting Qualitative Data: A Field Manual for Applied Research," 2013).

While previously participant observation was purposed for the data collection of the research, but due to limited resources, observation and testing of the system were found to be difficult. Thus, personas were developed for the testing of the system.

### **3.1.3 Persona:**

Persona is a research technique that is used to humanize the characteristics of required user groups for designing a product. They are specifically used in a design process to help define a product. With the help of personas, researcher and designers can gather information needs and mental models that will reflect the

original user groups (Sinha, 2003). Thus, personas were used to understand the user requirements of this system.

The training program of the persona was scheduled inside a room where the introduction of the course and that of the tutor was made. Basic information on using the system was provided before the training. The training session was conducted individually for each persona. Description of the persona, their background, scenario, and their user journey are further explained below.

#### **a) Stacy**

Age: 19 year

Challenges: Down syndrome.

Technology usage: None

Technology preference: None

Internet Usage: None

#### Goal

- To understand online training platform and its usage.
- To learn about sexual violence defense techniques through an online platform to protect herself from those situations.

#### Background

She has down syndrome and has little issues walking independently thus, uses a wheelchair for her movements. Though she recognizes her friends and family members, she can't seem to function daily activities well and requires help. She was diagnosed with down syndrome when she was a child. A caretaker has been assigned for her, to help her with daily activities and movement. Stacy had been going to a training school for her personality and behavioral development. She knows how to read and write in general but isn't technology competence.

#### User Scenario

Usage of the website using a computer in a silent room with the expectation to use the system.

#### User Journey

Step1: Opens website

Since Stacy hasn't used computer devices before and she seemed to be hesitant for using the system, guidance was provided to open and usage of the website.



#### Step 2: Register

Registration of the user was done by providing the name, email, and password.

#### Step 3: Login

Login of the system was done by providing the registered email address and the password.

#### Step 4: Plays quiz

After login of the system, she was redirected to the quiz section where she was explained on how to use the system. She was provided with enough time for her to get comfortable and use the system on her own. Stacy seemed quite relaxed with the images on the quiz and to answer it, however.

#### Step 5: Saves score.

After the completion of the quiz, she was guided to save score through "Save score" button.

#### Step 6: Directed to beginners' level.

After saving of score, she was directed on the beginner's level of the training as she scored less than 2 on the quiz.

#### Step 7: Beginners' level training.

The beginners level had a flip card training where she started learning about family members and outsiders. The card contains simple wording information thus, she seemed engaged throughout.

#### Step 8: She then logged out from the system using the "logout" button.

### **b) Hanifa**

Age: 38 year

Status: Caretaker

Technology usage: None

Technology preference: None

Internet Usage: None

#### Goal

Find information regarding responsibilities as a caretaker and that a caretaker must focus on regarding sexual violence on people with intellectual disabilities along with prevention techniques to enhance her knowledge on sexual violence.

#### Frustration and pain points

Finds technology complicated to use and process.

### Background

She works as a caretaker and has been taking care of an individual with an intellectual disability from the past few years. Mostly, she helps the person with a disability with self-care, such as dressing, grooming, etc. She is unschooled and has problems using technological devices.

### User Scenario

Usage of the website using a computer in a silent room with the hope to understand and use the system. Voice over has been used for usage of the system.

### User Journey

#### Step1: Opens website

Since Hanifa hasn't used computer devices before and she seemed to be cautious for using the system, help was provided to open and use the website.

#### Step 2: Home page

The home page of the website consists of basic knowledge of what sexual violence, consent is and a general description that she accessed using the voiceover.

#### Step 3: Roles and responsibility menu

She is then guided to the roles and responsibility menu where various contents regarding roles and responsibilities of the different user group on people with intellectual disability are stored in case the individuals with an intellectual disability fall into a sexual harassments situation.

#### c) Julia

Age: 42 year

Status: Parent/Caretaker

Technology usage: Intermediate

Technology preference: Windows laptop, Android phone, tablet

Internet Usage: 8-10 hours

### Goal

Find information regarding responsibilities as a caretaker and that a caretaker must focus on regarding sexual violence on people with intellectual disabilities along with prevention techniques to teach her child and enhance her knowledge on sexual violence.

### Background

She is a working woman and a single mother. She is usually out for work thus she has assigned a caretaker for her child who has an intellectual disability. She is aware of the situation her child might have to face and understands the issues that might arise with caretakers.

### User Scenario

Usage of the website using a computer in a silent room with an expectation to understand and usage of the system.

### User Journey

#### Step1: Opens website

Julia opens the website using the website's link.

#### Step 2: Home page

The home page of the website consists of basic information on what sexual violence is, about consent and a general description of a different kind of abuse.

#### Step 3: Roles and responsibility menu

Julia selects the roles and responsibility menu where various contents regarding roles and responsibilities of the different user group on people with an intellectual disability are stored in case the individuals with intellectual disability fall into a sexual harassments situation.

#### Step 4: Register

She registers on the system by providing her name, email address and password as she was eager to see how the pieces of training are provided for people with intellectual disability.

#### Step 5: Login

She logs in onto the system by using the registered email address and the password.

#### Step 6: Plays quiz

After login of the system, she gets redirected to the quiz section where the quiz questions with image options could be found. She then plays the quiz.

#### Step 7: Saves score.

After the completion of the quiz, she saves the score using the "save score" button.

#### Step 8: Directed to Intermediate level.

She was then directed on the intermediate level of the training since she scored less than 4 on the quiz.

Step 9: Intermediate level training.

The intermediate level has an interactive video where the users can learn about different members whom they can trust on and their roles in the life of an individual with intellectual disability, it also contains information regarding no touch areas, etc.

Step 10: She goes through various level through retaking the quiz.

Step 11: She then logs out from the system using the “logout” button.

d) Armando

Age: 23 year

Challenges: Fragile X syndrome.

Technology usage: Beginners

Technology preference: Windows desktop

Internet Usage: None

#### Goal

- Increase knowledge of sexual violence.
- Learn about prevention techniques.

#### Frustration and pain points

- Technology not cognitive accessible.
- Not being able to find online training interfaces to use that is easy to and doesn't have too much text.

#### Background

Armando has an intellectual disability and has hand tremors with a little problem with walking. He does have good memories for pictures and visual patterns but his main weaknesses are in thinking about abstract ideas, planning, and solving problems. He was diagnosed with Fragile X syndrome in early life and was assigned for special education and therapist for speech and movement control due to which he has improved a lot.

#### User Scenario

Usage of the website using a computer in a silent room with the expectation to use the system.

#### User Journey

Step1: Opens website

Armando opens the website with some guidance.

Step 2: Register

He registers on to the system by providing name, email address, and password. He preferred voice over for the usage of the system. He seemed to be uncertain about what to do after the registration.

Step 3: Login

With a little help, he logged in on the system by providing the registered email address and the password.

Step 4: Plays quiz

After login of the system, he was redirected to the quiz section, with the help of voiceover as well as text he was able to understand and solve the quizzes on his own. Armando seemed quite comfortable with the images on the quiz and to answer it.

Step 5: Saves score.

After the completion of the quiz, he saved the score.

Step 6: Directed to beginners' level.

He was directed to the beginner's level of the training since he scored 2 on the quiz.

Step 7: Beginners' level training.

The beginners level had an interactive video that started playing after he clicked on the play button.

Step 8: Training through Flip cards

The beginners level had a flip card training where he started learning about family members and outsiders and persons one can trust. The card contains simple wording information thus, he seemed engaged throughout.

Step 9: He went through the various level by retaking the quiz.

He seemed to enjoy the interactive video and understand the contents inside it as he was answering when the animation asked questions such as "what are the body parts we shouldn't let anyone touch?" to which he answered few answers correctly.

Step 10: He then logged out from the system using the "logout" button.

e) Alberto

Age: 45 year

Status: Therapist

Technology usage: Intermediate

Technology preference: Windows desktop, tablet, iPhone

Internet Usage: 6-8 hours

### Goal

Find a program that not only focuses on one user group but also provides information for the caretakers and family members.

### Frustration and pain points

- Not being able to find easy training platforms for both focus groups i.e., individual with Intellectual disability and their caretakers.
- People not being interested in home training using especially online training platforms.

### Background

He holds an occupational therapy degree and works as an occupational therapist for a private hospital in Mozambique and also works as a social worker. He has been giving motor and speech development training and regular-based therapy. He has got an experience of working as a therapist for more than 15 years.

### User Scenario

Usage of the website using a computer in a room with the expectation to use the system.

### User Journey

Step1: Opens website

Alberto opens the website using the website's link.

Step 2: Home page

The home page of the website consists of basic information on what sexual violence is, about consent and a general description of a different kind of abuse which Alberto reads carefully.

Step 3: Roles and responsibility menu

He selects the roles and responsibility menu where various contents regarding roles and responsibilities of a different user group such as caretakers, medical facility, etc. on people with intellectual disability are stored in case the individuals with an intellectual disability fall into a sexual harassments situation.

#### Step 4: Register

He clicks on the “signup” menu which leads him to the registration page. He does the registration by providing his name, email address, and password.

#### Step 5: Login

He logs in onto the system by providing the registered email address and the password.

#### Step 6: Plays quiz

After login of the system, he gets redirected to the quiz section where the quiz questions with image options could be found. He then solves the quiz.

#### Step 7: Saves score.

He answers all the quiz questions and saves the score using the “save score” button.

#### Step 8: Directed to Expert level.

He gets directed on the expert level of the training since he scored more than 5 on the quiz.

#### Step 9: Expert-level training.

The expert level has various information where users can learn about sexual violence and preventions techniques.

#### Step 10: He goes through various level through retaking the quiz.

#### Step 11: He then logged out from the system using the “logout” button.

### **3.1.4 Pilot testing:**

A Pilot study can be defined as a mini-study of a data collection method for testing data collection strategies and research protocols, for the preparation of a larger-scale study. They are conducted in a research project to identify the potential problem areas before the detailed full study (Lancaster, Dodd, & Williamson, 2004; Zailinawati Abu Hassan, 2006). Conducting a pilot interview, the researches can determine whether the questions prepared for the interviews will be adequate for data collection or not and the contents gathered cover all the concepts of research or not. It also helps to analyze the data prepared and to pre-test those data on a small number of participants having similar characteristics as in the main study to reduce possible unclear data and to add credibility on the entire project (Dikko, 2016).

The intercultural communication (ICC) competence is extremely important for the effectiveness of any system as it includes the cultural-specific and cultural-general understanding of others. Attaining the knowledge of host culture is an important tactic one can use to minimize misunderstanding and would help to overpower the cultural gap as the behavior of people from that culture can be understood.<sup>1</sup> As this study mainly focuses on people with intellectual disabilities on Mozambique, it is extremely important to understand the culture pattern of Mozambique to reduce the cultural breach. Thus, pilot testing the user from the same cultural background was conducted as it will reduce the chance of wrong data exhibition and will help in achieving data collection goals on this system. The training website and the quiz contains data related to sexual violence prevention and techniques which might be uncomfortable to people in Mozambique due to their different cultural barriers and procession. Thus, to reduce the cultural gap and to achieve better data results, pilot testing was required for this system and hence was conducted.

Overall, pilot testing was conducted with a few numbers of people to observe their behavior upon the training concepts and contents of the website. The people involved in the participation of pilot testing were from the same cultural background as that of the stakeholders.

### **3.1.5 Changes on the interview guide:**

According to the results gathered through pilot testing, changes were made on the interview guides which can be found in the appendices section. The interview guide was altered and prepared according to three different stakeholders. Various alterations were made according to the interview circumstances and the interview questions were asked suitably.

---

<sup>1</sup> L. Wiseman, Richard & R. Hammer, Mitchell & Nishida, Hiroko. (1989). Predictors of Intercultural Communication Competence. *International Journal of Intercultural Relations*. 13. 349-370. 10.1016/0147-1767(89)90017-5.



## **3.2 Section-2:**

This section consists of the data analysis method used for the analysis i.e., Thematic analysis along with details about the participants, materials used and procedure.

### **3.2.1 Thematic Analysis:**

With all the data gathered through interviews and observations, the thematic analysis method was used to analyze those data and to qualify a deeper understanding of the research questions and that for people with intellectual disability. According to Komori, "Thematic analysis is a means to gain insight and knowledge from the data gathered" (Komori, 2010). Using this analysis method, one is capable to determine the extensive patterns which will allow them to conduct more granular research and analysis. In other words, using thematic analysis one can check if the data received are consistent with the research question or not and if they are receiving sufficient information's required (Judger, 2016). Moreover, if one wants to examine the different forms of meaning and words that the participants express out for their experiences and wants to focus on retaining the ways to inform those experiences using those contexts, a thematic analysis might be the best choice (SAGE Research Methods Datasets, 2017). As for this project, the thematic analysis approach consists of three basic structure:

- a. Iterative review of the interviews recorded and their transcripts.
- b. Design analysis
- c. Design synthesis

#### **a. Iterative Review:**

Analysis of the data was conducted through multiple re-listening of the interviews recorded and proof-reading of the transcripts as well as notes taken during the interview. It is believed that listening to the interviews multiple times and noting down the data's points received from the participants, helps one to get a deeper understanding of the main questions.

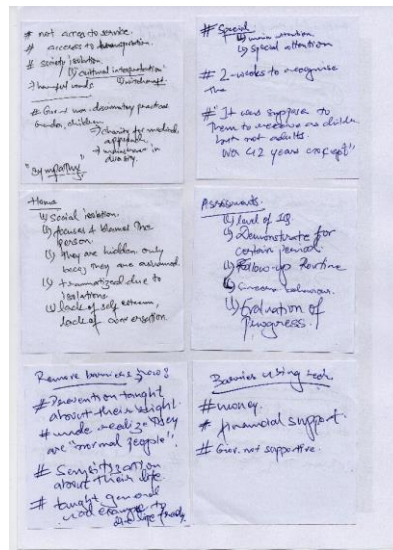


Figure 3: Field notes taken during interviews for analysis

b. Design analysis:

As for the design analysis, direct quotes from the participants has been used as a form of direct evidence and are used to refer to the interview. All those quotes and data have been noted down for the design synthesis section.

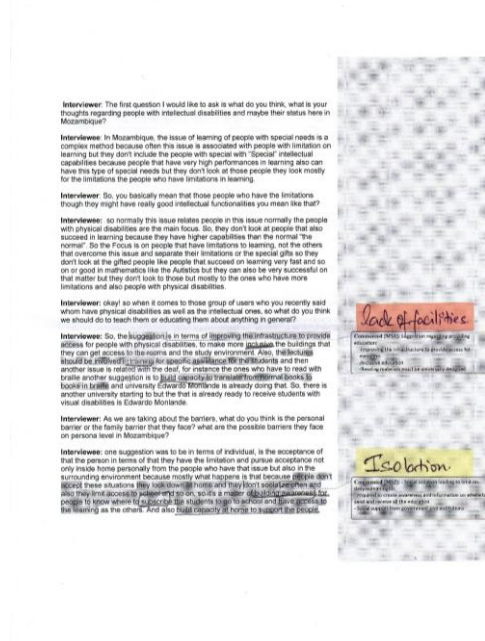


Figure 4: Useful direct quotes from participants underlined for analysis

c. Design synthesis:

The direct quotes collected were then categorized into different groups to be sorted as themes. Since, the sample size was pretty small, having small sample

group results into making a lot of effort to achieve the required result in thematic analysis. (Allan, 2018)

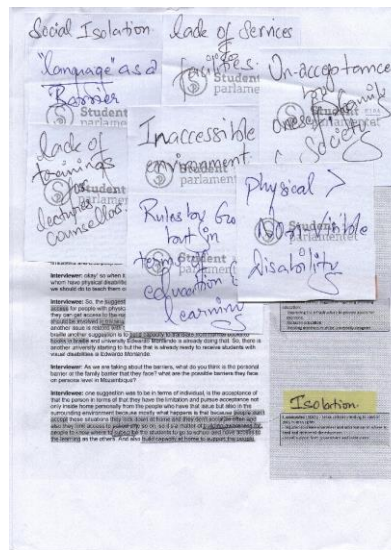


Figure 5: Images of transcripts and data notes and separated onto different themes.

### 3.2.2 Participants:

Three groups of stakeholders were taken into consideration for the study of this research paper which includes the person with intellectual disability, their caregivers and practitioners. They were enlisted for the interview and training sessions that were conducted in Mozambique. 2 people with intellectual disability along with their caretakers and their practitioners were introduced for the interview. Altogether 6 participants were introduced and explained the goal of the research. Additionally, a different interview guide was used according to user type to understand the various views.

### 3.2.3 Materials:

A Laptop was used to show the system for the observation process and also to administer and to write down the information received during the interview. A recorder was also used to record the interview sessions for future references and analysis.

### 3.2.4 Interview conducted in Mozambique:

A face to face semi-structured interview was conducted among three user groups independently. At the beginning of each interview, participants were informed about the goal of the research. A consent form was signed and protection of

participant's privacy, anonymity was ensured. They were informed that their data will only be used until the running of the project and will later be deleted after the completion. The participants were given the freedom not to answer in case of any uncomfortableness. Sound recording and field notes were made for later data analysis and the participants' approvals were asked for it. Due to the language barrier, a translator was used for the translation of the interviews. The translator was selected from the same cultural background and offensive or discriminatory terms and language were requested to be avoided. Each interview lasted for an hour or less. The interview was conducted with the practitioners to gather their views regarding people with intellectual disability, sexual violence, and Mozambique. Another interview was conducted among people with intellectual disability who were capable to consent on their own. The interview was conducted to study their behavior and vision towards sexual violence, societal influence, and behaviors towards these user group and their expectation to eradicate those issues. Additionally, another interview was conducted among caretakers separately to study their vision towards people with intellectual disability, issues along with their expectations regarding the abolishment of those problems.

## **4 Ethical Considerations:**

A notification form was submitted for collecting the data from the National Archive of research data (NSD) as a lot of private information's will be gathered from the stakeholders. By getting the notification form for research, researchers like us will have the freedom to collect and analyze the data without major legal, economical and practical obstacles. ((NSD))

All the participants were provided a full consent paper including signature before the interview. The paper consisted of various important principles regarding their privacy and data analyzations.

1. The protection of research participant's privacy has been ensured and adequate level of confidentiality of the research data has also been mentioned and guaranteed.
2. The anonymity of the individual participants and organization participating in the research has been ensured.
3. Before the interview, participants were informed that their comfort is prioritized and incase of any uncomfortableness they have the freedom to back out any time they want.
4. In any form, the participants were not and will not be subjected to any harm.
5. Their dignity was respected and ensured not to be violated in any case.
6. The data received will not be used as a manipulative data and will not be used as a piece of misleading information.
7. Offensive, discriminatory and unacceptable language were avoided to a maximum while interviewing questions.
8. Translator was informed beforehand about the rules and regulations and consent form was signed.

### **4.1 Privacy and confidentiality:**

Privacy protection is the main concern on any project. Every person is concerned about their data and usually would not want to share it with a stranger. And if the data is related to sexual harassment and violence, anyone would be more protective and concerned about it. Thus, the anonymity of the individual is a must when addressing the data received and the participants were ensured about it beforehand. Hence, has been ensured on this research (Research, 2015).

## **4.2 Respect for participants:**

Participants personal integrity must be protected thus, they were provided the options to answer concerning interview questions and publishing results. They were also provided the freedom to avoid unwanted questions and elaborate more about the topics they want to provide information about, for gathering useful contents.

## **4.3 Transparency and Honesty:**

All the information about the research topic, its purpose, who will receive this information, results and the consequences of participation in the research project were provided to the participants. No false or misleading information was provided and was explained orally in a language that the participants were able to understand. Consent paper was also provided and signed before the data collection from the participants (ALLEA, 2017; Committees, 2016).

Since, this study is an attempt to address the issues of the present study of sexual violence on people with intellectual disabilities, to portray the issue in ethical terms, the training and preventions programs offered, their location, accessibility, availability must be considered. However, their confidentiality, anonymity, and data sharing agreements were discussed and keeping their personal life on the mind, crucial understanding and safeguard were assured (McCartan, Merdian, Perkins, & Kettleborough, 2017).

## **4.4 Translators and confidentiality:**

As an interpreter, it is highly important that the information's are correctly understood and conveyed accurately. The misunderstanding through cultural difference is resolved and the message is conveyed accurately without clouding own's opinion (Ulatus, 2016).

Interpreters played a very important role in this research as participants were from Mozambique and preferred language was Portuguese. Thus, the interpreters were informed about all those rules and a consent form was signed for confidentiality.

## **5 Results and Analysis:**

### **5.1 Development:**

Everything about the development of the training website such as features of the project, methodology used and the tools and techniques used in the development of the system has been explained in this section.

#### **5.1.1 System Architecture:**

This section consists of the system architecture which is explained using various UML diagrams to explain the overall architecture, that has been used during the development of this online training website.

##### **5.1.1.1 Component Diagram:**

MVC architecture pattern was used for the overall system architecture. The model consists of the database used in the system and every function used for data connection is placed there. The controller consists of three modules; home, log in and user. The home module consists of a function that takes place before user login into the system such as registration, etc. The login module consists of all the login function that takes place inside the system and the user module consists of functions such as playing quiz and saving the scores. Moreover, the view is where all the user interface modules are stored. It consists of a user and a registered user module. The home module consists of all the view pages before the login and the registered user consists of view pages after the successful login. Figure 3 below illustrates the detailed diagram of the system.

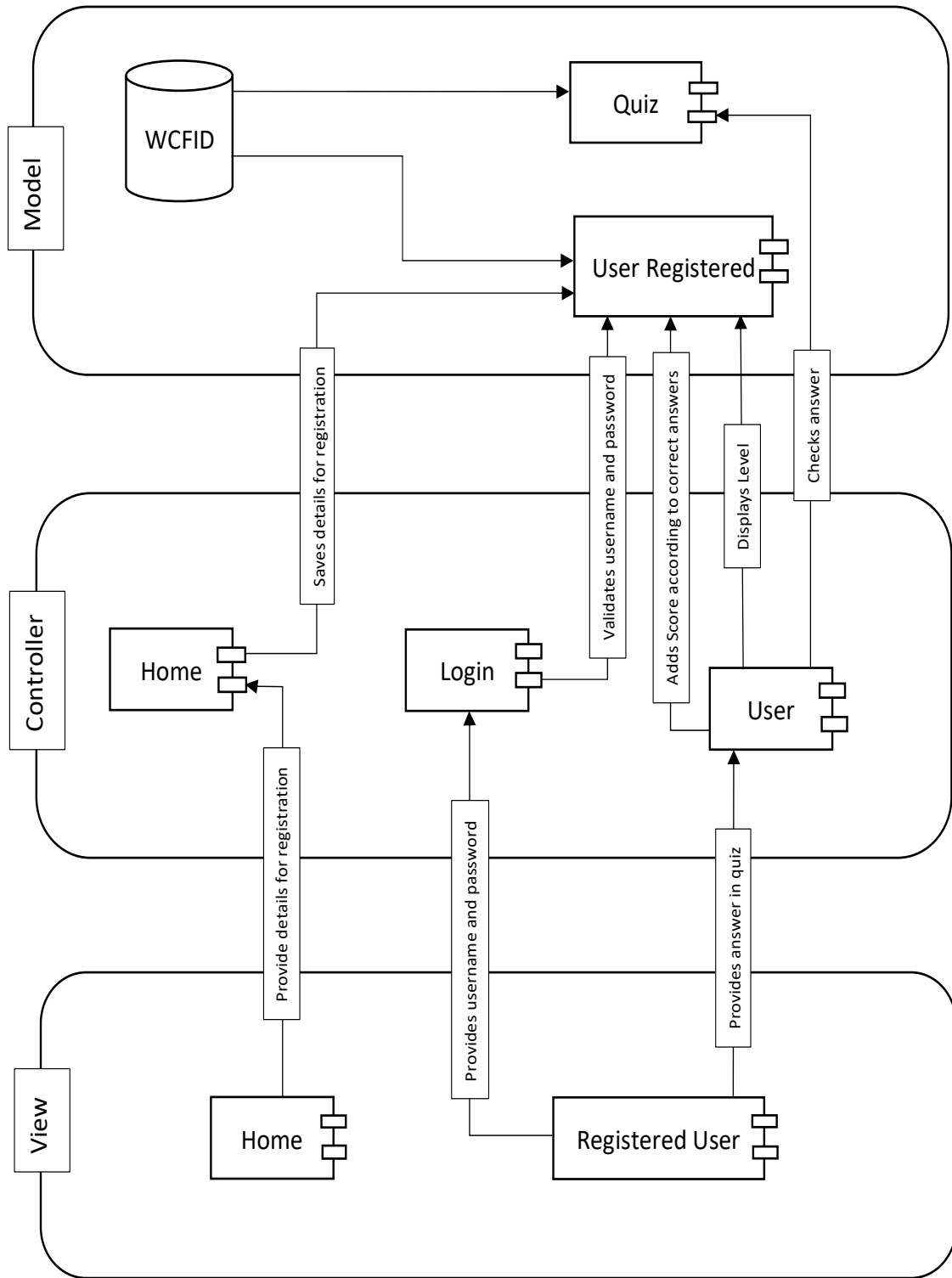


Figure 6: Component Diagram of the overall system



### 5.1.1.2 Flow Chart Diagram:

The diagram below illustrates the workflow of various functions that occurs in the online training system such as user registration, username and password validation and taking the quiz.

#### 5.1.1.2.1 User registration:

Figure 4 illustrates the workflow of new user registration where new-user enters first name, middle name, last name, email, and password. The email is then checked by the system if it exists in the database the system informs the user and new email has to be entered. If not, the data is saved onto the database.

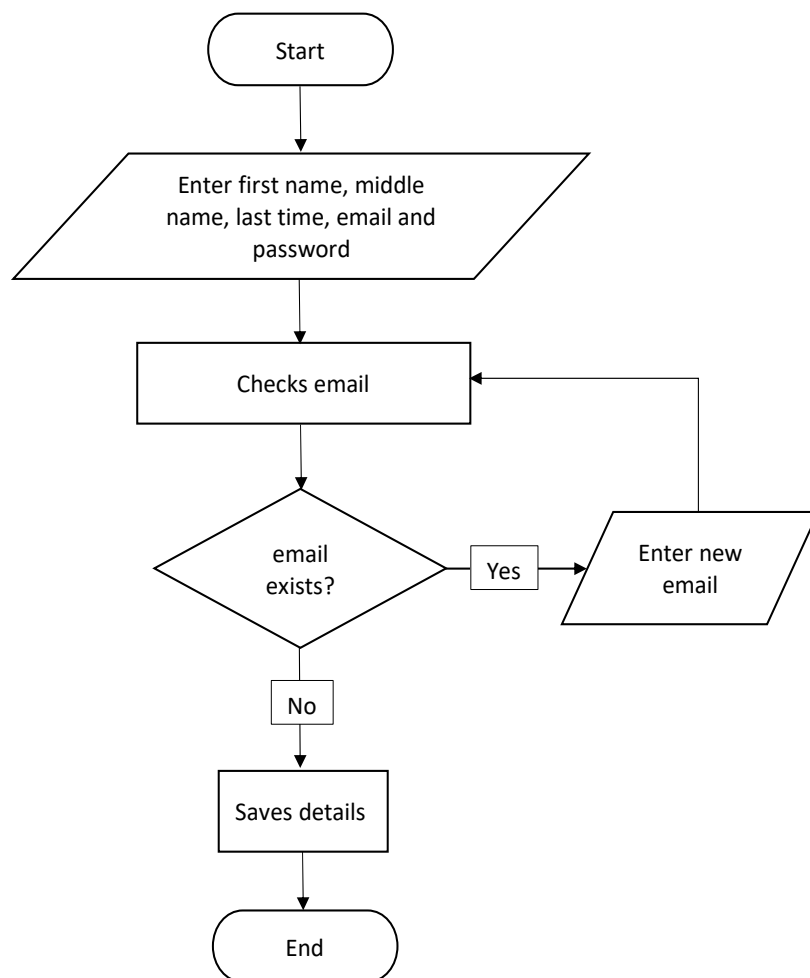


Figure 7: Flowchart for new user registration

### 5.1.1.2.2 Email and password Validation:

Figure 5 illustrates the workflow of a username and password validation where the user enters username and password which is then verified by the system comparing it to the database. The system denies entry if one of the username or passwords is not found on the database.

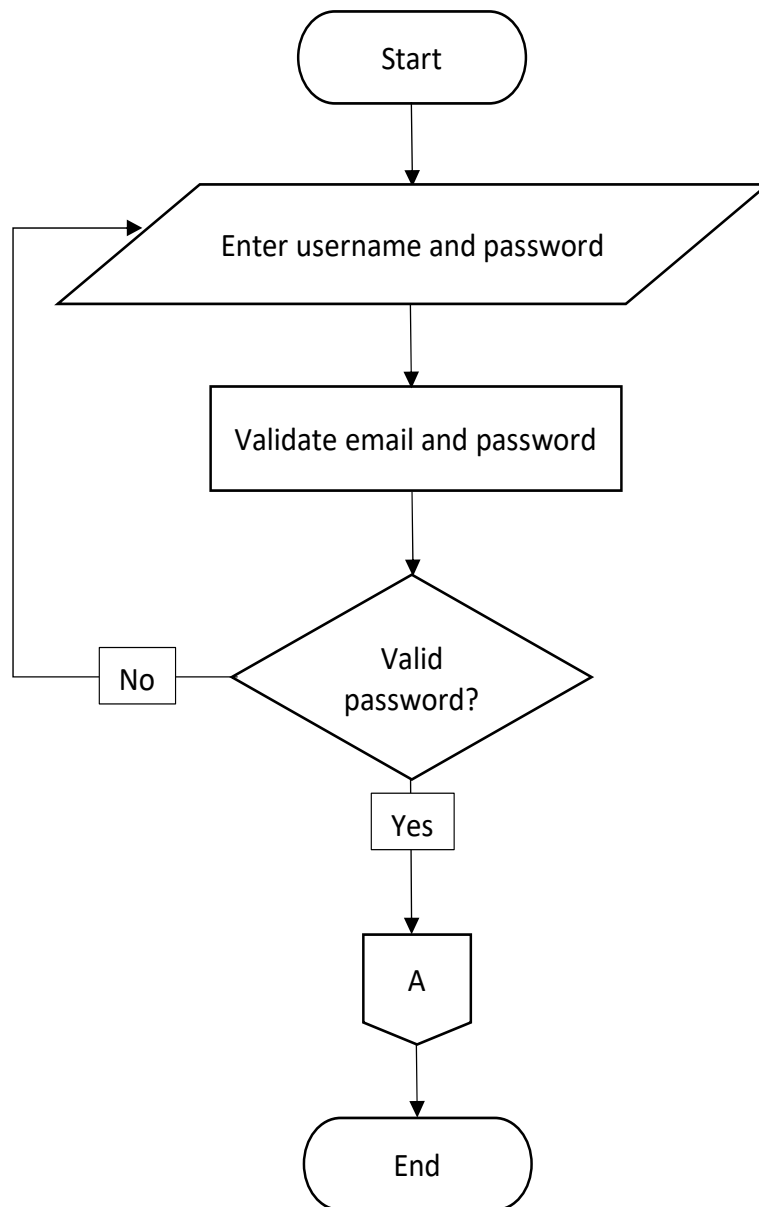


Figure 8: Flow chart for username and password validation

#### **5.1.1.2.3 Quiz:**

Figure 6 demonstrates the workflow of taking the quiz after the successful login validation of the system. As soon as the user has a successful login, the user is redirected to quiz dashboard where the user has to take a 6-question quiz and submit the answers. The answers will be checked by the system with the one present on the database. If the answers are correct, the right answers will be displayed and if wrong, right answers along with the wrong answers given by the user will be displayed. User is given the option to save the score or re-play the quiz. If they press save score, the score is saved onto the database which is then checked by the system. If the score saved is equal to or less than 2, the user is redirected to the beginner's level page. If the score saved is greater than 2 and less than 4, the user is redirected to the intermediate level page and if greater than 4 and equals to 6, the user is redirected to expert view page. The user also has the option to re-play the quiz.

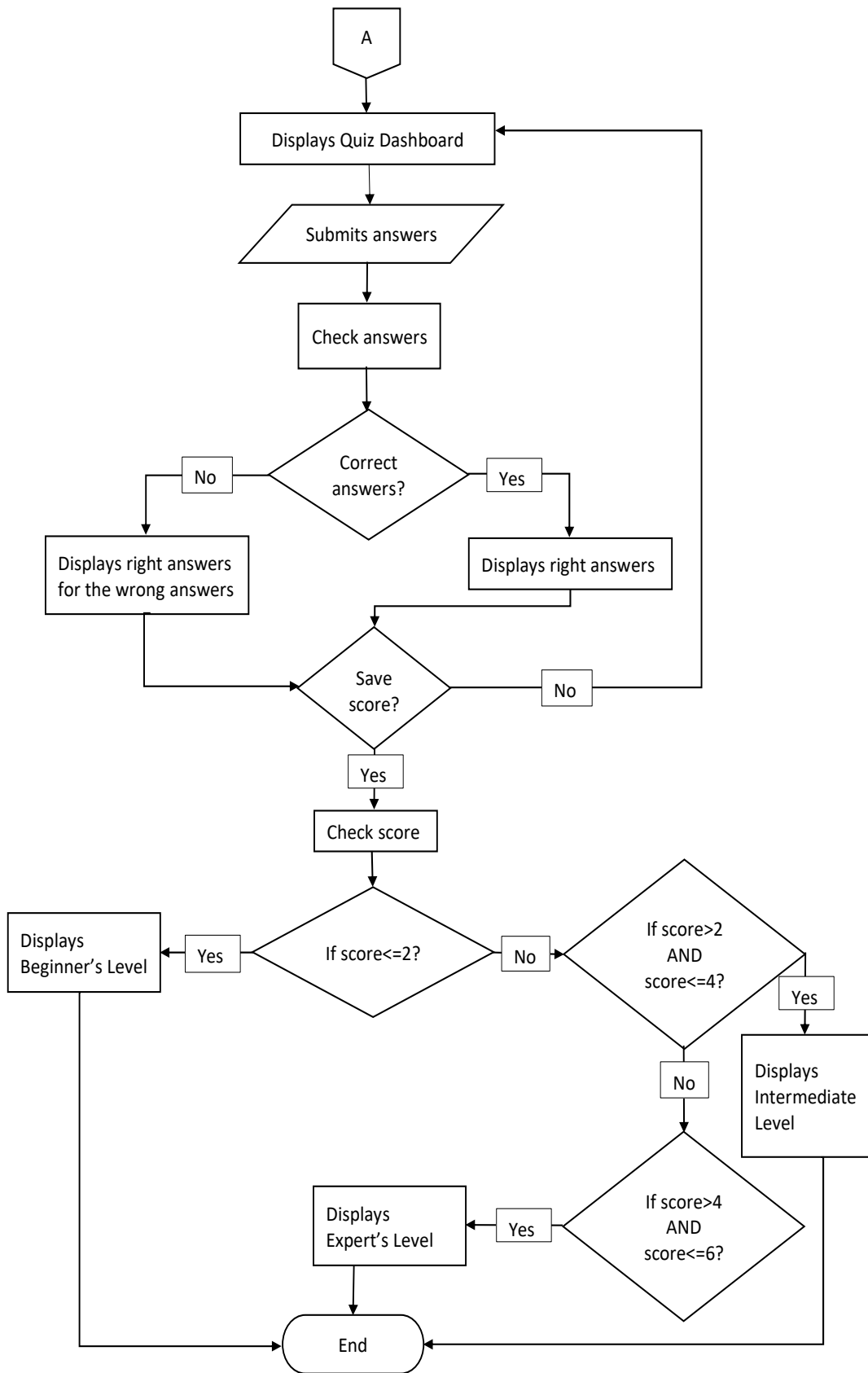


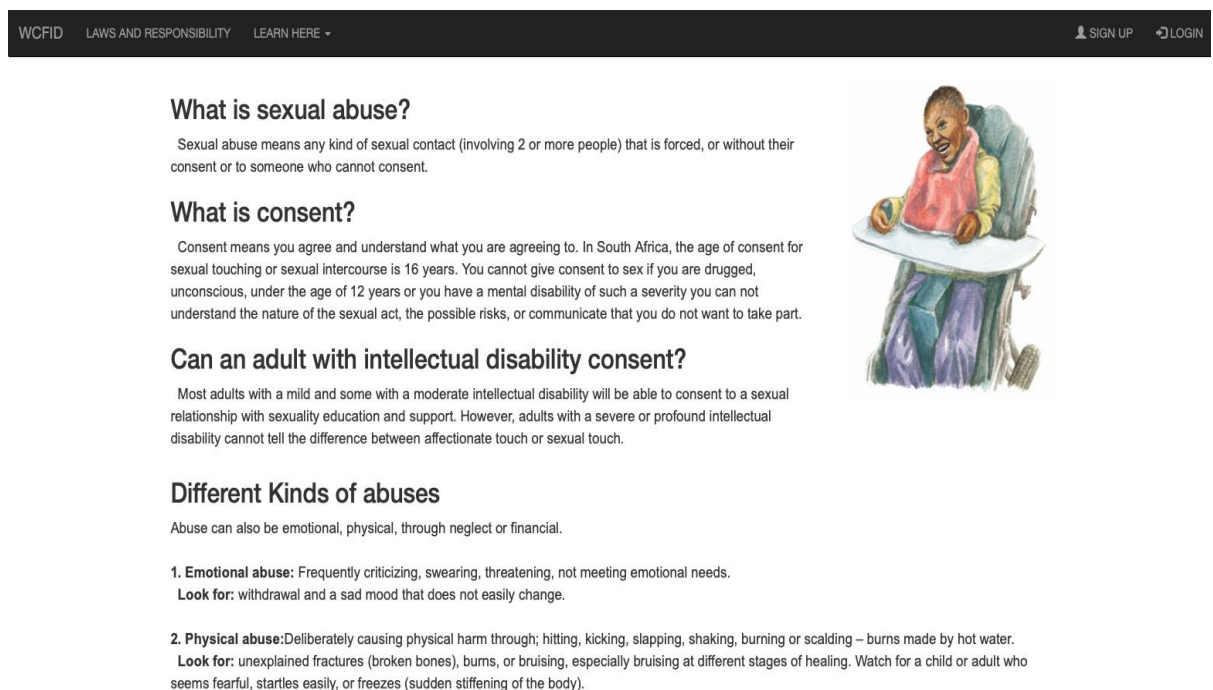
Figure 9: Flowchart of take quiz function

## 5.2 Features of the project:

Development of the system is completed using PHP as a programming language along with HTML, CSS, Bootstrap, and JavaScript. The database is created on PhpMyAdmin using MySQL. Various modules of the system are further described in the section below.

### 5.2.1 Main page:

As soon as the user opens the website, the home page of the website gets displayed. In this page, the user will find information regarding sexual violence, consents and, consents in terms of people with intellectual disability.



**What is sexual abuse?**  
Sexual abuse means any kind of sexual contact (involving 2 or more people) that is forced, or without their consent or to someone who cannot consent.

**What is consent?**  
Consent means you agree and understand what you are agreeing to. In South Africa, the age of consent for sexual touching or sexual intercourse is 16 years. You cannot give consent to sex if you are drugged, unconscious, under the age of 12 years or you have a mental disability of such a severity you can not understand the nature of the sexual act, the possible risks, or communicate that you do not want to take part.

**Can an adult with intellectual disability consent?**  
Most adults with a mild and some with a moderate intellectual disability will be able to consent to a sexual relationship with sexuality education and support. However, adults with a severe or profound intellectual disability cannot tell the difference between affectionate touch or sexual touch.

**Different Kinds of abuses**  
Abuse can also be emotional, physical, through neglect or financial.

- 1. Emotional abuse:** Frequently criticizing, swearing, threatening, not meeting emotional needs.  
**Look for:** withdrawal and a sad mood that does not easily change.
- 2. Physical abuse:** Deliberately causing physical harm through; hitting, kicking, slapping, shaking, burning or scalding – burns made by hot water.  
**Look for:** unexplained fractures (broken bones), burns, or bruising, especially bruising at different stages of healing. Watch for a child or adult who seems fearful, startles easily, or freezes (sudden stiffening of the body).

*Figure 10: Home page of WCFID website.*

## 5.2.2 Role and responsibility:

The contents on the role and responsibility page consist of responsibilities according to user roles on the life of people with intellectual disability. One can go to this page using the “Role and responsibility” button on the menu bar of the website.

The screenshot shows a website's navigation bar with 'WCFID', 'LAWS AND RESPONSIBILITY' (highlighted with a red box), and 'LEARN HERE -'. On the right, there are 'SIGN UP' and 'LOGIN' links. The main content area is titled 'Who is responsible for managing sexual abuse?' and 'Roles and Responsibilities'. It lists three roles: Family Role, Facility Role, and Police Role, each with a list of responsibilities. A callout box with the text 'Press here to go to this page.' points to the 'LAWS AND RESPONSIBILITY' menu item. To the right, there are two vertical graphics. The top one features a speech bubble with the text 'Children and adults with intellectual disability are more at risk of sexual abuse.' and a portrait of 'Social worker Lindwe'. The bottom one features a speech bubble with the text 'Sexual abuse does not always involve force and may not leave visible injuries.' and a partial portrait of a person in a blue headscarf.

WCFID LAWS AND RESPONSIBILITY LEARN HERE - SIGN UP LOGIN

### Who is responsible for managing sexual abuse?

#### Roles and Responsibilities

**Family Role:**  
I am a parent , grandparent, aunt or uncle; it is my job to:

- Support and believe the child or adult.
- Report sexual abuse.
- Use expert help.

**Facility Role:**  
I work in a special care centre, school or protective workshop; it is my job to:

- Identify and report suspected sexual abuse to the manager or principal.
- Support the child or adult after disclosure.
- Support family members.
- Make sure my facility has a sexual abuse policy.
- Ask for staff training.

**Police Role:**  
I am the investigator, it is my job to:

- Investigate the sexual offence.
- Take statements.
- Interview the survivor privately with a supporter or parent present if needed.
- Provide a female officer to interview the survivor if requested and available
- Identify the offender.

Press here to go to this page.

Children and adults with intellectual disability are more at risk of sexual abuse.

Social worker Lindwe

Sexual abuse does not always involve force and may not leave visible injuries.

Figure 11: Magazine section on the website

### 5.2.3 Sign Up:

When the user clicks on the “Sign up” button on the menu bar, the registration page gets displayed where a new user can register. One has to register on the system to go to the training page where quiz can be played and training can be achieved.

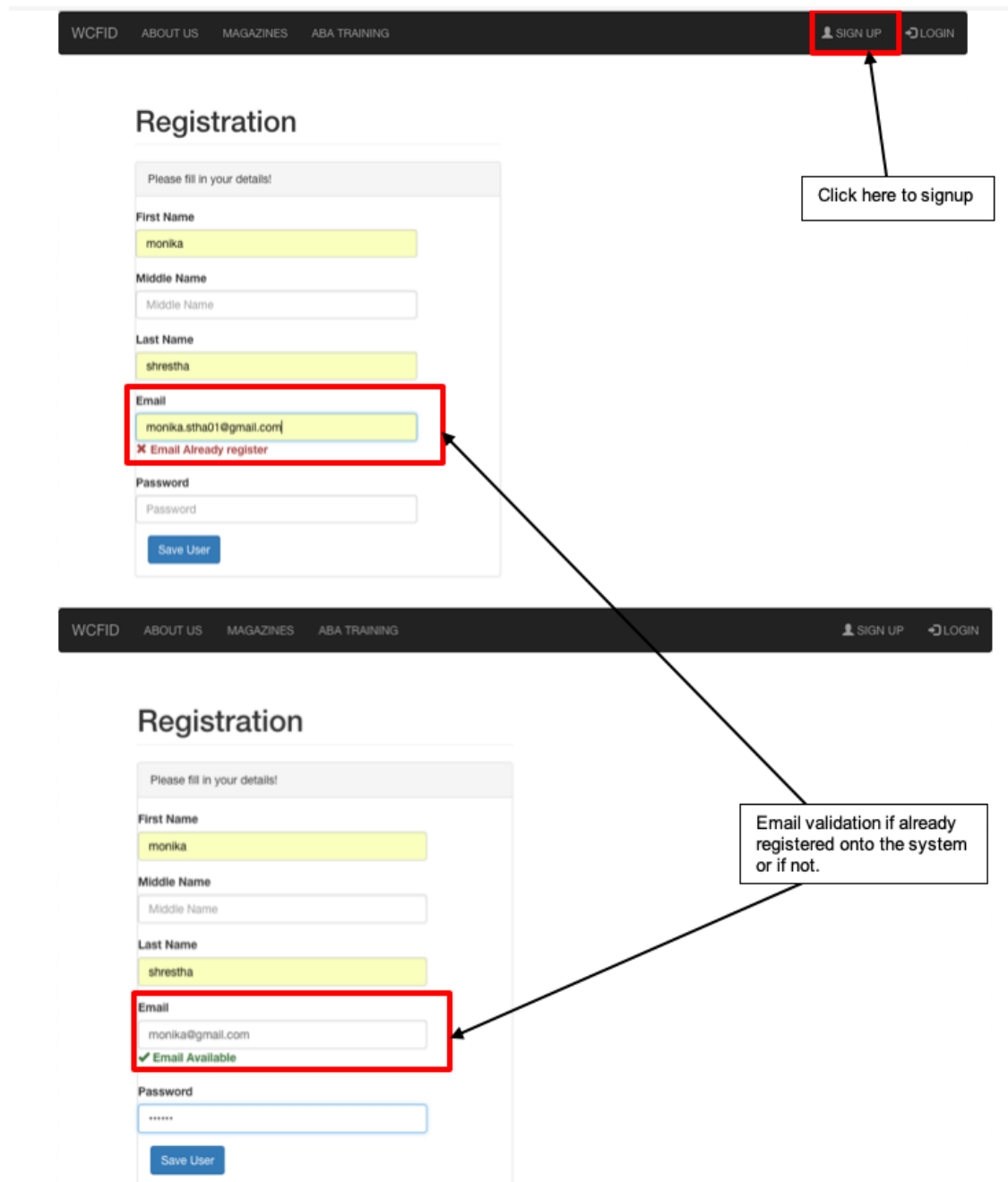


Figure 12: Registration view page on the website

## 5.2.4 Login:

After the registration of the website, log in onto the system can be made. One can go to the login page either through the “login” button on the menu bar or by clicking on the “Learn More” button. User will have to enter their email address and password for logging into the system. The registered email and password must be used for successful login of the system.

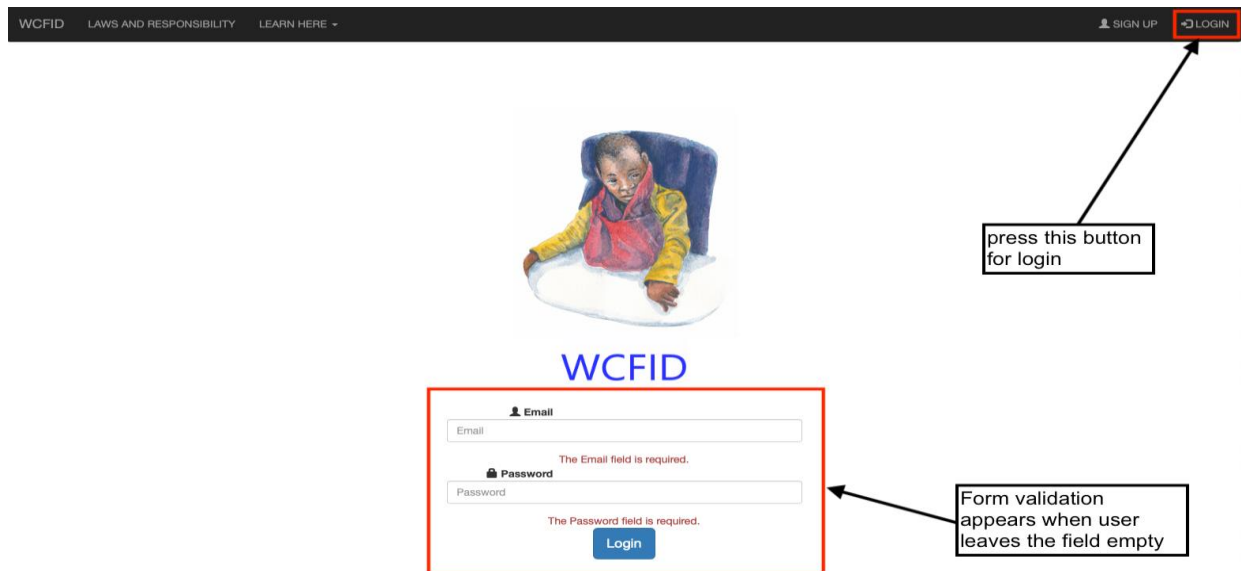


Figure 13: Login view of the website with input filed validations.

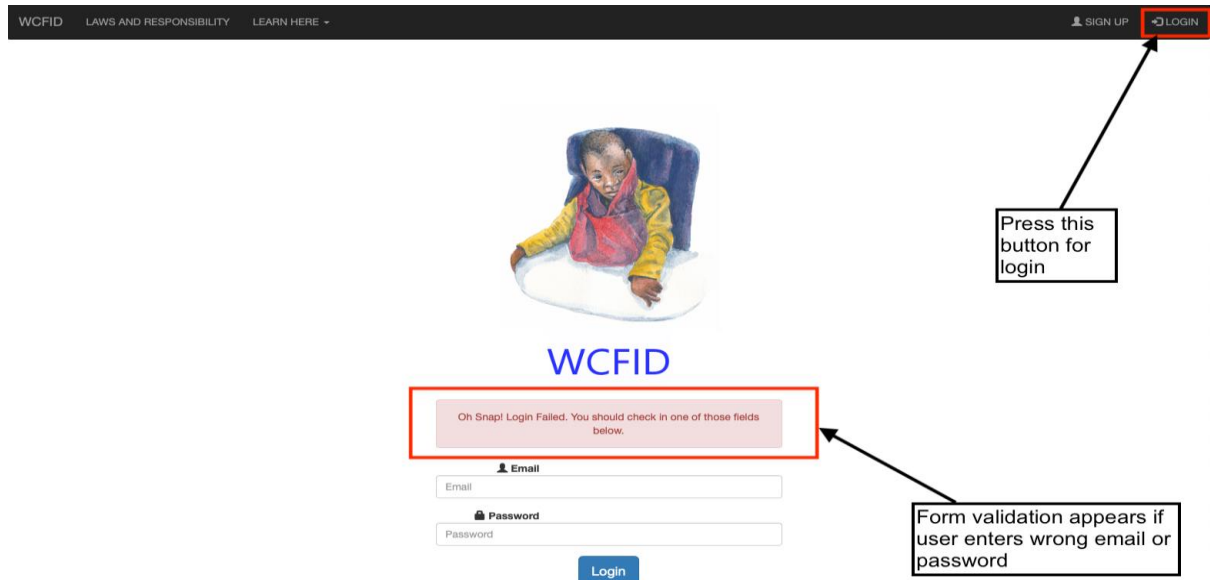


Figure 14: Login view of the website with input filed validations.



### 5.2.5 Dashboard:

After a successful login on the system, the user will be redirected to the quiz dashboard page where they must play the quiz to get the training. The quiz analyzes the level of knowledge of the person regarding sexual violence and provides training accordingly.

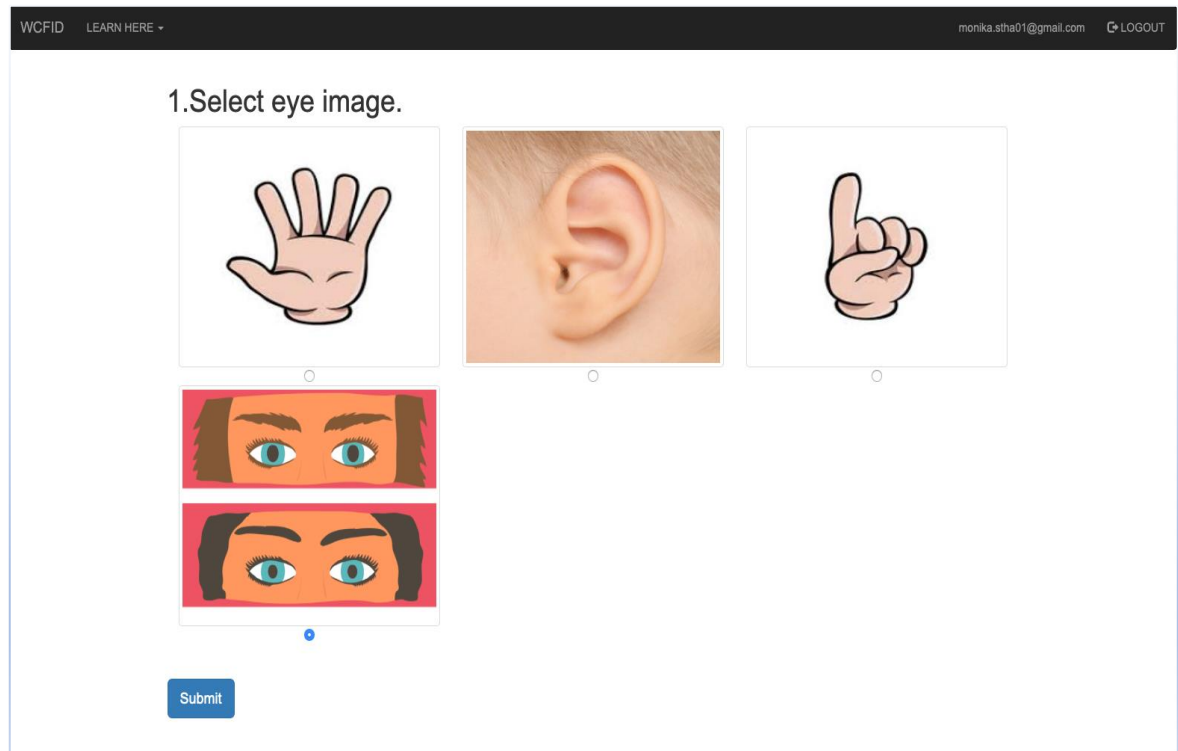


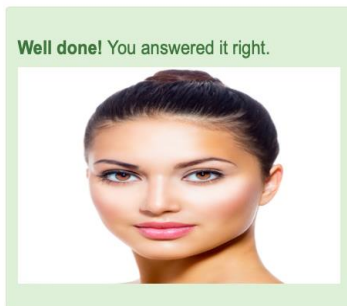
Figure 15: Quiz dashboard after login.

### 5.2.6 Result view:

After each quiz question, the answer to the question is provided to the user. If the user gives the wrong answer, "Oops! Wrong answer." feedback with wrong answer image along with the right answer image will be displayed. Besides, if the answer selected was right, "Well done! You answered it right." feedback along with answered image gets displayed. They can save the score achieved or play the quiz again but to get the training, they must save the scores first.

Results!

2. Select face image.

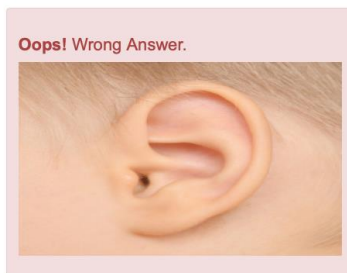


Next

Figure 16: Results showing all the right answers on the result view page.

Results!

3. Select "no-touch" area.



Next

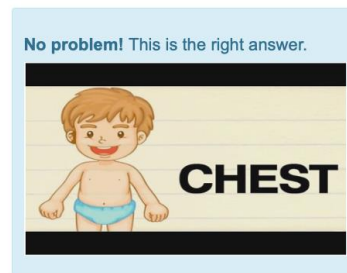


Figure 17: Results showing wrong answers along with right ones.

### 5.2.7 Training page:

User can go to the training page after he logs in into the system by selecting the “Learn More” and onto the “ABA training” button. However, they will be directed to a beginner’s level if no quiz test was performed. If they have performed the quiz, according to their score, they will be directed to the respective level. If the user scores less than 2 on the quiz, they are directed to the beginner’s level page. If the user’s score is more than 2 and equals to 4, they are directed to the intermediate level page. And if the score is more than 4 and equals to 6, the user is directed to an expert level page. The beginner’s level consists of flip cards training where user can learn about family members and outsiders and persons they can trust on, the intermediate level consists of an interactive video where the users can learn about different members whom they can trust on and their roles in the life of individual with intellectual disability, it also contains information regarding no touch areas, etc. and finally the expert view consists of another interactive video where users are provided with a sexual violence scenario along with different method that they can use to prevent and overcome on.



#### People whom you can trust to inform about harrasment



Figure 18: Beginners level view page

### No Touch Areas

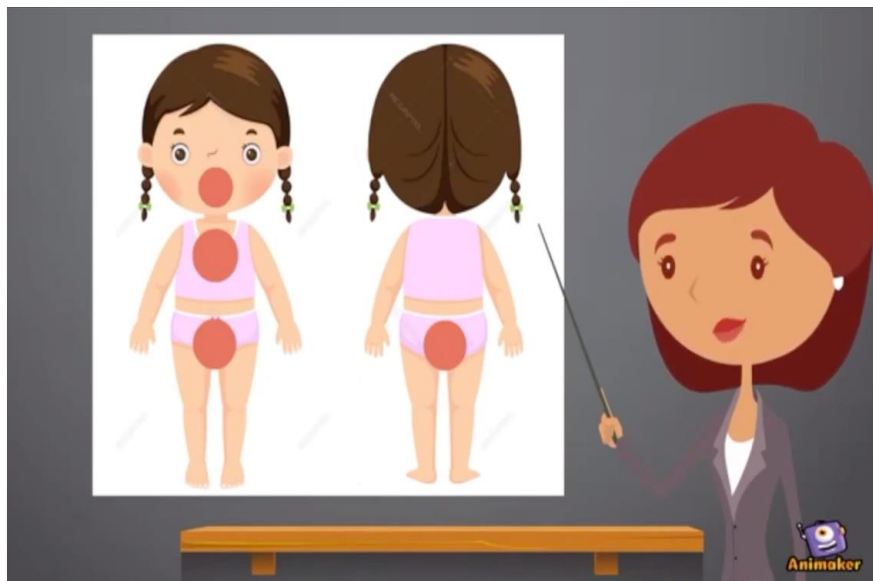


Figure 19: Intermediate level view page

### Sexual Awareness



Figure 20: Expert level view page

### 5.3 WCAG guidelines manual evaluation

The result for WCFID website from the manual testing based on the WCAG 2.1 is given below in the table, where “###” with green color – this symbol denotes that the principle and guidelines are met, “\*\*\*” with red color – this symbol denotes that the principle and guidelines are not met and the rest denotes that those guidelines and principles are yet to be met or doesn’t qualify with the system. With this manual evaluation, the usability and accessibility of the system are showed.

1. Perceivable	2. Operable	3. Understandable	4. Robust
<b>1.1 Text Alternatives</b>	<b>2.1 Keyboard Accessible</b>	<b>3.1 Readable</b>	<b>4.1 Compatible</b>
1.1.1 Non-Text Content — Level A “###”	2.1.1 Keyboard — Level A “###”	3.1.1 Language of Page — Level A	4.1.1 Parsing — Level A
	2.1.2 No Keyboard Trap — Level A “###”	3.1.2 Language of Parts — Level AA	4.1.2 Name, Role, Value — Level A
	2.1.3 Keyboard (No Exception) — Level AAA “###”	3.1.3 Unusual Words — Level AAA “***”	4.1.3 Status Messages Level AA
	2.1.4 Character Key Shortcuts - Level A	3.1.4 Abbreviations — Level AAA	
		3.1.5 Reading Level — Level AAA	
		3.1.6 Pronunciation — Level AAA “***”	
<b>1.2 Time Based Media</b>	<b>2.2 Enough Time</b>	<b>3.2 Predictable</b>	
1.2.1 Audio-only and Video-only — Level A “###”	2.2.1 Timing Adjustable — Level A “###”	3.2.1 On Focus —Level A “###”	
1.2.2 Captions (Prerecorded) — Level A “###”	2.2.2 Pause, Stop, Hide —Level A	3.2.2 On Input —Level A	

1.2.3 Audio Description or Media Alternative (Prerecorded) — Level A “###”	2.2.3 No Timing — Level AAA “###”	3.2.3 Consistent Navigation — Level AA “###”	
1.2.4 Caption (Live) — Level AA	2.2.4 Interruptions — Level AAA	3.2.4 Consistent Identification — Level AA “###”	
1.2.5 Audio Description (Prerecorded) – Level AA	2.2.5 Re-authenticating — Level AAA	3.2.5 Change on Request — Level AAA	
1.2.6 Sign Language (Prerecorded) — Level AAA “***”	2.2.6 Timeouts - Level AAA		
1.2.7 Extended Audio Description (Prerecorded) — Level AAA			
1.2.8 Media Alternative (Prerecorded) — Level AAA “###”			
<b>1.3 Adaptable</b>	<b>2.3 Seizures</b>	<b>3.3 Input Assistance</b>	
1.3.1 Info and Relationships — Level A “###”	2.3.1 Three Flashes or Below Threshold — Level A “###”	3.3.1 Error Identification — Level A “###”	
1.3.2 Meaningful Sequence — Level A “###”	2.3.2 Three Flashes — Level AAA	3.3.2 Labels or Instructions — Level A “###”	
1.3.3 Sensory Characters — Level A “###”	2.3.3 Animation from Interactions Level AAA (Added in 2.1)	3.3.3 Error Suggestion — Level AA “###”	

		3.3.4 Error Prevention (Legal, Financial, Data) — Level AA	
		3.3.5 Help — Level AAA	
		3.3.6 Error Prevention (All) —Level AAA “###”	
<b>1.4 Distinguishable</b>	<b>2.4 Navigable</b>		
1.4.1 Use of Color — Level A “###”	2.4.1 Bypass Blocks — Level A		
1.4.2 Audio Control — Level A “###”	2.4.2 Page Titled — Level A		
1.4.3 Contrast (Minimum) —Level AA “###”	2.4.3 Focus Order — Level A		
1.4.4 Resize Text — Level AA “###”	2.4.4 Link Purpose (In Context) — Level A		
1.4.5 Image of Text — Level AA “###”	2.4.5 Multiple Ways — Level AA “###”		
1.4.6 Contrast (Enhanced) —Level AAA “###”	2.4.6 Headings and Labels —Level AA “###”		
1.4.7 Low or No Background Audio — Level AAA “###”	2.4.7 Focus Visible — Level AA “###”		
1.4.8 Visual Presentation —Level AAA	2.4.8 Location — Level AAA		
1.4.9 Images of Text (No Exception) — Level AAA “###”	2.4.9 Link Purpose (Link Only) — Level AAA		
1.4.10 Reflow - Level AA “***”	2.4.10 Section Headings —Level AAA “###”		

1.4.11 Non-text Contrast - Level AA “###”			
1.4.12 Text Spacing - Level AA “***”			
1.4.13 Content on Hover or Focus - Level AA “***”			
	<b>2.5 Input Modalities</b>		
	2.5.1 Pointer Gestures - Level A		
	2.5.2 Pointer Cancellation – Level A		
	2.5.3 Label in Name - Level A		
	2.5.4 Motion Actuation - Level A		
	2.5.5 Target Size - Level AAA		
	2.5.6 Concurrent Input Mechanisms - Level AAA		

Figure 21: Comparing system with WCAG 2.1 guideline



## 5.4 Findings

This section contains all the findings gathered through interview.

### 5.4.1 Isolation:

Isolation was found to be one of the main barriers between technology learning and people with Intellectual disability in Mozambique. The participants when asked about the life scenario of people with Intellectual disability in Mozambique, one of them explained,

“The cultural interpretation is that mental disability is seen as a curse, a result of witchcraft. Most of these people are hated by their own family because they know if they go out with that person who is mentally or generally disabled, they will face, the family itself will face discrimination.”

Due to the superstition regarding mental disability, societal isolation was found to be one of the main challenges for people with Intellectual disability as well as their family. However, home isolation was found to be at extreme too. A social worker referring to one of the case scenarios they had to deal with mentioned,

“The victim was kept on a dark room without basic facilities, laid on the bed for days.”

A person with an Intellectual disability is found to be isolated at home in Mozambique by their family members. They are found to be kept on hostile environments, discriminated and treated un-human on extreme cases. On more border picture, social life is found to be non-existent for them. Commenting on this, one of the participants with Intellectual disability said,

“Most parents keep children with mental disability at home, resulting in us not having friends. We are hidden for so long that we lack self-esteem and hardly interact with anyone.”

Due to the fear of not being accepted in society, the parent’s group expel their children from social activities. Schools and work were found be a NO – subject

leading them onto being unemployed and schools not willing to register them on their system.

“We are discriminated, we are not even invited to many cultural events or home programs. The time while I was giving birth to my child, hospital professionals maybe didn’t know how to handle me or didn’t want to but I was left unattended, in pain during the labor. I was in trauma both physically and mentally.”

With mental disability treated as superstition and that person related to them getting isolated, both people with intellectual disability and their family members have difficulty socializing in Mozambique. People with mental health issues were found discriminated not only from society but also from their family members even parents. They were found to be treated unhuman, expelled from basic rights and left vulnerable, though family members were found to be pressurized by the societal behaviors to do so. As people with intellectual disability are isolated, they are not given opportunities to get educated or use any facilities to overcome their problems and societal barriers created. Thus, to provide equity and eliminate isolation from society, governmental involvement on reducing the isolation should be set as an example. Moreover, social media awareness campaigns, distant mentoring events using social media such as WhatsApp (Arroz et al., 2019), Radio (Frida Kasteng, 2018) /Television/SMS advertisement announcements, a public awareness campaign on every province from governmental sectors would also be some of the effective solutions on this matter.

#### **5.4.2 Lack of basic services:**

Another barrier that prevents the effects of the system was found to be a lack of basic services such as electricity, education, health facilities, etc. One of the caretakers said,

“Mental health care is scarcity in the country because most of the services are not available and those that are available are just limited. Because a huge number of people are seeking for few available services.”

Due to the limited services available and large population of people to use on, most of the basic services such as health facilities, transportation, etc. are found to be insufficient in Mozambique which results into improper Mental health care as well. When asked about the challenges they will be facing if they are going to use this system in Mozambique, one of the social workers replied,

“The main issue would be the access to the platform, because energy, internet, computer is not well distributed in Mozambique.”

With only 10 percent internet penetration, lack of energy on various provinces and platform to access on, Mozambique does have a lot of hurdles to pass on to use an online training platform as a preventive solution.

With teaching and schools on context, one of the caretakers replied, “A lot of school institutions think it’s impossible to teach those people because of their disability because they think they cannot deal with them thinking he/she can’t learn. Thus, the first step needs to be teaching them how to read and write or even teaching them to use a computer device, the basic skills so that they can benefit from using online platforms.”

Due to social isolation, most of the people with intellectual disability are abstracted from attending school, resulting in them not being introduced to society and people not understanding how to interact with them. The school professionals also try and avoid taking admissions of those people. Thus, a person with an intellectual disability must be first allowed to an education for them to benefit from online platforms. Almost all the participants had similar kind of responses when asked about the barrier for using the technology. However, one participant particular mentioned about the rural- urban digital divide in Mozambique. She said,

“In rural areas, there are many barriers regarding the system, one might have device but no power and no internet to access the system. The language barrier might also be another problem in rural Mozambique.”

Almost all the rural areas in Mozambique have a lack of basic facilities. Thus, even though the system might be in Portuguese, which is the common language spoken, in specific areas they mix both the local language and Portuguese.

With basic facilities such as health facilities, education, electricity, transportation, internet, etc. limited and in order for people with Intellectual disabilities to use this system (i.e., WCFID website), they must first learn the basics such as, to read and write and to use the computer which were found by a rare topic for people with Intellectual disabilities in Mozambique. Additionally, with the limited facilities, the urban-rural digital divide, and schools unwilling to take admissions of people with disabilities, people with intellectual disability will find it extra hard to understand and use this system. Therefore, to overcome these barriers proper education facilities and training schools for people with cognitive disabilities must be established. Moreover, well distribution of electricity, internet along with proper ICT Policy must be created by the government. The government of Mozambique does have an ICT Policy implementation strategy whose results were found to be positive to some extent (Xavier Muianga, 2013). So, updates on those policies to increase the result percentage might be one of the solutions to abolishing these concerns.

#### **5.4.3 Lack of laws and its implementation:**

Lack of laws and its implementation were found to be the prime factor influencing other barrier factors (including mentioned barriers above) in Mozambique. The lack of proper governmental laws such as basic human rights for people with intellectual disability, proper education and work rights, social security funds, etc. were found to be lacking. When asked about laws and the role of government on the lives of people with intellectual disability, one of the social workers said,

“People with intellectual disability are not even considered citizens here in Mozambique. They can’t even have a proper space to be in the house, to get married or to be employed. They do not receive any social security funding for their health care or to help them enhance their carrier.”

People with mental health issues are not taken seriously on both governmental and private sectors resulting onto them not having basic rights as a citizen in Mozambique. As per the participant's reviews, people with intellectual disabilities do not receive any social security funds neither have the right to get married or be employed. While having an interview with a person with Intellectual disability, she mentioned,

“Even though government hospitals have a quota system and people with a disability are given preferences for getting appointment of doctors, but due to low number of available appointment seats, the seats are provided to those who provides money. Bribery is very common in Mozambique, resulting onto people like me who are unfortunate not getting the proper facilities.”

Due to limited services available for people with disabilities and a huge number of user's necessitating it, bribery is common practice in Mozambique. People are compelled to pay a little extra to get the services fast and effortlessly. When asked about the laws and implementation on that matter, one of the social workers informed,

“The government have emplaced strategies to attain mental health and sexual assault issues, so in the training of the lecturers they have subjects related to this. In the policies and regulations also, there are laws that states that this should be taken care. In the Ministry of Education for instance there is a sector that specialize to deal with these issues but only in terms of education, equality and learning.”

Even though there are laws and regulations regarding mental health and sexual assaults and there is training provided to lectures regarding these matters, it limits to education sectors only. This explained that there were laws regarding mental health and sexual assault but was only found to be implemented if the person is under educational institutions or care house. When asked with the caretaker from one of the care houses which is a private institution regarding the relationship between people with Intellectual disability and sexual violence she commented,

“Sexual abuse, rape cases are found to be so common in people with Intellectual disability especially girls. They are not able to express their fear or in-comfort and even though they try to talk about it, their own family members don’t take them seriously on the first place. In Mozambique, touching is not considered violence and until you find scars on the body nobody believes you especially on the cases like these.”

With their family members neglecting and harming them, people with intellectual disability are found to be most vulnerable in their own home. And with no scars and proofs to be found, no actions are taken on that matter. Another caretaker from a different institution quoted,

“The problem starts from home here in Mozambique, those that are taking care of them (referring to people with intellectual disability) are those who are doing this kind of violence. When one tries to support the victim, their own family members say this one is crazy don’t listen to her resulting onto not taking any actions. There’s no powerful law to defend people with any kind of disability, they are just unprotected here.”

With no powerful laws and its implementation on protecting people with intellectual disabilities and their human rights, they are found to be one of the most vulnerable groups in Mozambique. Various cases were mentioned in various interview sessions, where the caretakers, the relatives, the family members or someone they know were found to be the perpetrators for the sexual abuse. And lack of powerful laws and no implementations were mentioned to be the main reason for it.

Lacks of laws regarding basic human rights for people with intellectual disabilities and its ineffective implementation was found to be one of the prime issues in Mozambique. People with mental health concerns were taken for granted by both the government and citizens. They were found to be victimized by their family members or someone they know and without proofs, no legal and proper actions were found to be established for them. Bribery was also found to be an ongoing practice in Mozambique due to limited services. Thus, to eradicate these issues effective laws must be created and implemented by the government. More identification and

attention must be provided for the safety of people with cognitive disabilities. The government must use social media and the internet as one of the main elements to increase awareness regarding sexual violence as well as laws and penalties related to it. Radio spots (Frida kasteng et. all 2018), television commercial acts, prevention slogans through SMS, etc. regarding issues of sexual violence on people with disabilities, their possible predator groups, and preventive majors, etc. must be advertised to provide awareness to all the citizens. Moreover, public awareness campaign, free events must be conducted in every province from governmental sectors so that people would attend the events and take the matter more seriously.

#### **5.4.4 Lack of awareness and trainings:**

When asked about the reason for the assault, the person with intellectual disability believed, isolation was the main factor behind it. She said,

“Since children with intellectual disability are mostly isolated at home for years, they aren’t prepared to deal with different real-life situations including sexual harassment. They don’t have the knowledge on that topic resulting onto them getting abused.”

A person with an intellectual disability has been isolated almost their entire life resulting onto them having no-knowledge on social behaviors and problems. This makes them highly likable on getting harassed. However, as a solution she suggested,

“I think educating about acknowledgement of various sexual behaviors in school and churches would be a great idea. However, both the parents and the person with disability must be taught about various sexual behaviors and their prevention techniques.”

Conducting training and prevention programs about sexual violence and behaviors on schools and church was suggested one of the solutions for parents and person with disabilities. Another solution suggested was that,

“We should have teachers with very high experience to be able to teach those people about various harassment behaviors, to be able to notice changes if in case

any. Training must be provided from governmental sector so that people would take it more seriously.”

To understand the mental state of a child or person with intellectual disability without them telling about it, the caretakers and teaching professionals must be provided with training and seminars from governmental sectors.

People with intellectual disability were found to be isolated, discriminated and not understood for almost their entire life which results in them lacking knowledge and confidence that they require to handle real-life situations. They lack awareness and experience on various subjects including sexual behavior and violence which directly puts them onto the most likely and vulnerable group to be harassed. Thus, to reduce the number, both the vulnerable group as well as support groups must be provided awareness and training. Public awareness campaign and training must be provided through school education, social gathering in churches, online platforms, social media advertisements, and training. Additionally, practitioners, teachers, and caretakers must be provided with further training methods and services to detect all the indications that individuals with intellectual disability are unknowingly providing, if they suffer from any kind of violence (Mahoney & Poling, 2011).



## **5.5 Persona Findings:**

### **5.5.1 Stacy:**

Since Stacy isn't familiar with technology and technical devices, she seemed hesitant about using the system. She required some help on operating the system such as registering onto the system, log in. She knows to read and write in general thus, after reaching on quiz section, she seemed comfortable on selecting answers through the images and was able to go throughout the quiz fluently. For the training section after the score was saved, she seemed interested in watching the video. She was engaged throughout the video and was interacting with the animation when required. However, she seemed to be drained with the information and technology aspects on it.

### **5.5.2 Hanifa**

Hanifa seemed cautious about using the system as she hasn't used any technological devices before. The voiceover on the system did seem to make her go a little easier however, she was having trouble in understanding the contents. Overall, she required a lot of help throughout the use of the system. Thus, for an individual with this kind of characteristics, they will require assistance to use the system throughout.

### **5.5.3 Julia**

Julia didn't seem to have any issue working on the system. She seemed to navigate the website on ease. She was able to register and login onto the system very easily, perform quizzes effortlessly and save the score.

### **5.5.4 Armando**

Armando was able to navigate throughout the system with a little guidance. He required guidance on each step such as; after the registration of the system he seemed uncertain on what to do so we had to inform him to login using the email and password. Thus, direct login onto the system after registration might reduce the hassle onto the system. He seemed to enjoy the interaction rooted in the video. The images sizes on the quiz seemed to help him choose them despite his challenges.

### **5.5.5 Alberto**

Alberto didn't seem to have any issue working on the system. He was able to navigate the website on ease. He registered and logged in onto the system and found the system comfortable.

## **6 Discussion:**

### **Online training platforms as a prevention technique for People with Intellectual Disability from sexual abuse.**

This research aimed to evaluate the effectiveness of various training techniques used on WCFID training website on people with Intellectual disability. The key element of this training was related to various training onto a pictorial, step by step video formats to make it interactive as well as understandable for people with Intellectual disability. This research took references from Applied behavior analysis training and developed an online training website. The website consists of information through text, images, flip cards, interactive videos clips, etc. Step by step videos was used as a teaching method because it has been proved that video clips training was found to be useful as a teaching method on individuals with intellectual disability (John Goodson a, 2007). Flip cards are also found to be another useful teaching method as these contain images and direct instructions and hence were used (Ruwe, 2011). To know their level of knowledge on sexual violence, quizzes have been created. The quiz consists of question regarding body parts, inappropriate gestures, etc. Moreover, information regarding roles and responsibilities as a caretaker, medical facility, etc. has been added for education purpose to the caretakers and other user groups.

The result from the persona and data collection suggests that an accessible interface will provide an effective preventive training solution if all the factors required to run the system are available. By using WCAG principles, the system can provide an accessible interface which will not only provide information on sexual violence but will also provide training to prevent them. However, data-collection from Mozambique suggest that there are various important barriers that the country needs to defeat to adopt this technology.

One of the main barriers being the lack of basic services such as electricity, education, and the internet, etc. citizens of Mozambique lacks the basic quality of living. With 47 percent of the population educated (USAID, 2019), only 10 percent of internet penetration (ALISON GILLWALD, 2019) and lack of inclusive education and trained professionals (WORLD, 2015) in the country, good access to these basic facilities must be provided in general and quality of living must be improved. With people having internet and devices to use the system and knowledge to use the

computer, the effectiveness of this system can be further tested in real-time. Moreover, the main user group of the system i.e., individuals with intellectual disability must be provided with the rights to live freely without society being pejorative regarding them or mental health and issues. They must be provided with the basic rights as that of people without any form of disabilities and should be given the freedom to choose a carrier or to survive in general. Societal isolation must be discouraged. The government of Mozambique must revise laws regarding people with intellectual disability and implement them effectively. Discriminations on employment in both governmental and private sectors, schools, health care must also be eradicated (Maputo, 2019). While conducting interviews regarding this research, some of the important mechanisms for adopting this technology were established that relates to the urban-rural digital divide, societal isolation, access to basic services, etc. The issues have been categorized into various topics to classify them and to provide possible solutions regarding those matters.

### **Cost effective ICT access and infrastructure**

Overall results showed that some basic services might be lacking in Mozambique and there is not a complete lack of basic service. When it comes to internet services, the results concur with Francisco Mabila's statement that "There are various elements except for the cost of bandwidth that has contributed to the low access and usage of the Internet. There are high prices of computer devices, poor coverage of electricity at household levels, language barriers, high rate of illiteracy and lack of awareness" (Francisco Mabila, 2010). And for a system like an online training platform to be implemented there, these basic facilities such as electricity, computer devices, the internet must be commonly available and used. The basic gender gap in literacy (USAID, 2019) as well as using technology must be breached and both genders groups must be provided with equal rights on learning and using the technology. Usage of communication technologies and their education must be integrated into the education system and encouragement on ICT skills training must be promoted.

The urban-rural digital divide is 85 percent in Mozambique, with inhabitants mostly being farmers, the majority of rural houses i.e., 66 percent lacks electricity with 32 percent of the houses in urban areas lacking it (ALISON GILLWALD, 2019). Thus, for one to learn through an online system, one must have stable electricity,

internet, cheaper electronic devices, etc. whether being on an urban or rural area. One must have basic electricity, cheap internet facilities and communication devices available in that area. Thus, the government must work on providing both short term as well as long term solutions regarding that matter on both the areas. Short term solutions regarding electricity would be providing cheap solar panels or generators. Internet through mobile operators on a cheap data prices would probably be another solution to increase internet uses in Mozambique.

### **Inclusive education and Awareness campaigns**

Due to strong stigma on mental health and people with intellectual disability along with family members and caregivers getting socially excluded and discriminated on everyday experiences, this research agrees with Daar and his group that, "immediate action is required to address people with mental health issues" and general knowledge regarding mental health must be spread across the country (Abdallah S. Daar, 2014). Though the government of Mozambique has made policy regarding inclusive education, the results agree with the statement from Light of the world that, "there is a huge scarcity of inclusive schools, teaching materials, and trained professionals". Inclusive education policy must be implemented around the country which will not only increase the knowledge and experience but will also help in developing understanding among both user groups i.e., people with and without intellectual disabilities (WORLD, 2015). The universally designed structure must also be constructed keeping all group of users in mind for their easy accessibility.

The idea of sexual violence being only physical and one needs to have scars to be proved harassed must be abolished. Superstitions and myths regarding people with intellectual disability must be ended and to implement that, awareness campaigns must be conducted both on governmental and local levels. Awareness and training campaigns using advertisements on radio, television, social media, online platforms must be conducted. This paper agrees with Hunt & Walsh and Zeuthen & Hagelskjær that "Involvement of the parents on teaching children, how they should take care of themselves has a lot of advantages for the prevention of abuse" and suggest both parents, as well as person with intellectual disability, must be involved on awareness training programs (Hunt & Walsh, 2011; Zeuthen & Hagelskjær, 2013).

## **Future Implementation**

After the improvement on all above mentioned social issues and availability of basic services on all parts of the country, people in Mozambique will be able to profit from online training like so. As a short- term solution, basic training for the use of the system can be conducted. As for the system, a lot of improvements can be made for future development. More training contents can be developed for more detailed learning on sexual violence. A separate login session can be created for the training of caretaker regarding sexual violence and sexual violence on people with intellectual disability. Various contents regarding responsibilities as a caretaker, for teaching people with intellectual disabilities on various matters such as sexual health, behaviors, etc. Moreover, keeping other user groups in consideration, expert's consultant forums can also be added onto the system for people to share their experiences, issues and get advice. Additionally, a website version of the system is only available thus, the mobile app can also be developed to increase the functionality of the system. More accessibility features can be added such as audio file for pronunciation and sign language to make both version accessible.

## **7 Conclusion:**

The research aimed was to provide an online training platform on sexual violence prevention for people with intellectual disabilities in Mozambique. The system provides training using interactive videos, flip cards images, and quizzes to increase the effectiveness of the system. Certainty is given to people with intellectual disability in Mozambique. And the result suggests that the online training platform with an accessible interface provides effective training if all the factors required to run the system are available. Real-time testing of the system was not possible due to lack of resources back in Mozambique. However, interviews were conducted to gather more information and personas were used to create user scenario and to address gaps in the system. Therefore, in the future, if people with intellectual disability can overcome all mentioned barriers, the effectiveness of the system can further be tested. Apparently, as a short-term solution, basic training for use of the system can be conducted. Testing of the system through persona suggests that the system developed might be difficult to use for a person with no education and technical background. Thus, assistive technologies such as voice over must be used. Using WCFID website, individuals with cognitive disabilities will learn effective preventive techniques, that may help them increase their knowledge on sexual behavior and harassment situations and thus, protect themselves from those situations.

## 8 References:

- (NSD), N. C. f. R. D. Notification form for research and student projects processing personal data. Retrieved from <http://www.nsd.uib.no/personvernombud/en/notify/meldeskjema?eng>
- (UNDP), U. N. D. P. (2016). HUMAN DEVELOPMENT REPORTS. In G. I. INDEX (Ed.). UNITED NATIONS DEVELOPMENT PROGRAMME Website: UNDP.
- (WHO), W. H. O. (2002). *Sexual Violence*. Retrieved from [http://www.who.int/violence\\_injury\\_prevention/violence/global\\_campaign/en/chap6.pdf](http://www.who.int/violence_injury_prevention/violence/global_campaign/en/chap6.pdf)
- Abdallah S. Daar, M. J., Stig Wall, Johann Groenewald, Julian Eaton, Vikram Patel, Palmira dos Santos, Ashraf Kagee, Anik Gevers, Charlene Sunkel, Gail Andrews, Ingrid Daniels and David Ndetei. (2014). Declaration on mental health in Africa: moving to implementation. *Glob Health Action*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4058779/>. doi:10.3402/gha.v7.24589
- ALISON GILLWALD, O. M. A. B. R. (2019). THE STATE OF ICT IN MOZAMBIQUE 2018. *RIA Policy Paper No. 6, 5*. Retrieved from [https://researchictafrica.net/after-access\\_tbc/](https://researchictafrica.net/after-access_tbc/).
- Allan, T. (2018). Semi-structured interviews and thematic analysis of qualitative data. Retrieved from <https://medium.com/designhealthfacility/semi-structured-interviews-and-thematic-analysis-of-qualitative-data-7ad1857e228d>
- ALLEA. (2017). *The European Code of Conduct for Research Integrity- Revised Edition*. Retrieved from Berlin, Germany: [https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics\\_code-of-conduct\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf)
- Armstrong, S. (1994). Rape in South Africa: an invisible part of apartheid's legacy. *Gender & Development, 2*(2), 35-39.
- Arroz, J. A. H., Candrinho, B. N., Mussambala, F., Chande, M., Mendis, C., Dias, S., & Martins, M. d. R. O. (2019). WhatsApp: a supplementary tool for improving bed nets universal coverage campaign in Mozambique. *BMC Health Services Research, 19*(1), 86. Retrieved from <https://doi.org/10.1186/s12913-019-3929-0>. doi:10.1186/s12913-019-3929-0
- Assembly, U. G. (1993). Declaration on the Elimination of Violence against Women. *UN General Assembly*.
- Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). SOME CURRENT DIMENSIONS OF APPLIED BEHAVIOR ANALYSIS1. *Journal of Applied Behavior Analysis, 1*(1), 91-97. Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1901/jaba.1968.1-91>. doi:doi:10.1901/jaba.1968.1-91
- BROWN, P. H. (2011). Sexual abuse of children with disabilities. In *Protecting children from sexual violence* (pp. 103 - 117): COUNCIL OF EUROPE.
- Cecilio Adorna (Principal), H. R., Zuber Ahmed. (2011). *2011 Mozambique: Evaluation of Child and Youth Participation Initiatives in UNICEF Mozambique*. Retrieved from Evaluation Database: [https://www.unicef.org/evaldatabase/index\\_66800.html](https://www.unicef.org/evaldatabase/index_66800.html)
- Chen, J. Q., & Chen, D. G. (2005). Awareness of child sexual abuse prevention education among parents of Grade 3 elementary school pupils in Fuxin City, China. *Health education research, 20*(5), 540-547.
- Collecting Qualitative Data: A Field Manual for Applied Research. (2013). In. Retrieved from <http://methods.sagepub.com/book/collecting-qualitative-data> doi:10.4135/9781506374680

- Committees, T. N. N. R. E. (2016). *Guidelines for Research Ethics in the Social Sciences, Humanities, Law and Theology*. Retrieved from [www.etikkom.no](http://www.etikkom.no):  
<https://www.etikkom.no/en/ethical-guidelines-for-research/guidelines-for-research-ethics-in-the-social-sciences--humanities-law-and-theology/b-respect-for-individuals/>
- de Olarte, G., & Llosa, G. (1999). Does Poverty Cause Domestic Violence: Some Answers from Lima. *Too Close to Home: Violence in the Americas*. Washington, DC: Inter-American Development Bank, 35-50.
- Dearnley, C. (2005). A reflection on the use of semi-structured interviews. *Nurse Researcher (through 2013)*, 13(1), 19.
- Dikko, M. (2016). *Establishing Construct Validity and Reliability: Pilot Testing of a Qualitative Interview for Research in Takaful (Islamic Insurance)*. Retrieved from <https://nsuworks.nova.edu/cgi/viewcontent.cgi?article=2243&context=tqr>
- Eide, A. H., & Kamaleri, Y. (2009). Living conditions among people with disabilities in Mozambique: a national representative study. *Oslo, SINTEF*.
- Erbaugh, B., O'Toole, L., Schiffman, J., & Kiter-Edwards, M. (2007). Gender violence: Interdisciplinary perspectives. In: New York University Press New York, NY.
- Europe, C. o. (2012). Learning from good practices: Council of Europe to strengthen international cooperation to tackle sexual violence against children. Retrieved from [https://www.coe.int/t/dg3/children/1in5/News/RomeConference\\_en.asp](https://www.coe.int/t/dg3/children/1in5/News/RomeConference_en.asp)
- Fischbach, R. L., & Herbert, B. (1997). Domestic violence and mental health: correlates and conundrums within and across cultures. *Social Science & Medicine*, 45(8), 1161-1176.
- Francelina Romão, L. M., Célia Buque, Graça, Ondina da Barca Vieira. (2007). *VIOLENCE AGAINST WOMEN IN MOZAMBIQUE*. Retrieved from UNIFEM and Forum Mulher: <http://gender-financing.unwomen.org/~media/files/un%20women/grb/resources/violence%20against%20women%20in%20mozambique%20english.pdf>
- Francisco Mabila, J. M. N. M., Avelino I. Mondlane. (2010). Mozambique ICT Sector Performance Review 2009/2010. *Towards Evidence-based ICT Policy and Regulation*, 2. Retrieved from researchICTafrica.net.
- Frida Kasteng, J. M., Simon Cousens, Sophie Sarrassat, Jennifer Steel, Nicolas Meda, Moctar Ouedraogo, Roy Head, Josephine Borghi. (2018). Cost-effectiveness and economies of scale of a mass radio campaign to promote household life-saving practices in Burkina Faso. *BMJ Global Health*. Retrieved from <https://gh.bmj.com/content/bmjgh/3/4/e000809.full.pdf>. doi:10.1136/bmjgh-2018-000809
- Fu, P. P., Kennedy, J., Tata, J., Yukl, G., Bond, M. H., Peng, T.-K., . . . Koopman, P. (2004). The impact of societal cultural values and individual social beliefs on the perceived effectiveness of managerial influence strategies: A meso approach. *Journal of International Business Studies*, 35(4), 284-305.
- GCE, L. (2019, February 13, 2019). Mozambique: Reform Of The National Education System Includes MEPT Contributions. Retrieved from <https://www.campaignforeducation.org/en/2019/02/13/new-approved-law-of-the-national-education-system-includes-mept-contributions/>
- Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: interviews and focus groups. *British dental journal*, 204(6), 291.
- Goode, H., McGee, H., & O'Boyle, C. (2003). Time to Listen: Confronting Child Sexual Abuse by Catholic Clergy in Ireland. Executive Summary.
- GOV.UK. (2018). *Global Disability Summit 2018 - Summary of Commitments*. Retrieved from GOV.UK:





- Judger, N. (2016). The thematic analysis of interview data: An approach used to examine the influence of the market on curricular provision in Mongolian higher education institutions. *University of Leeds*.
- K. Riley, C. B., J. Hills, L. W. Gane, J. Sandstrum, Randi J Hagerman. (2001). The tickle box assistive technology device piloted on a young woman with fragile X syndrome. *Mental Health Aspects of Developmental Disabilities*, 4(4), 138-142.
- Kalra, G., & Bhugra, D. (2013). Sexual violence against women: Understanding cross-cultural intersections. *Indian Journal of Psychiatry*, 55(3), 244.
- Komori, M. (2010). Thematic Analysis. Retrieved from <http://designresearchtechniques.com/casestudies/thematic-analysis/>
- Lancaster, G. A., Dodd, S., & Williamson, P. R. (2004). Design and analysis of pilot studies: recommendations for good practice. *Journal of Evaluation in Clinical Practice*, 10(2), 307-312. Retrieved from <https://onlinelibrary.wiley.com/doi/abs/10.1111/j..2002.384.doc.x>  
doi:doi:10.1111/j..2002.384.doc.x
- Lazar, J., Feng, J. H., & Hochheiser, H. (2017). *Research methods in human-computer interaction*: Morgan Kaufmann.
- Lumley, V. A., Miltenberger, R. G., Long, E. S., Rapp, J. T., & Roberts, J. A. (1998). Evaluation of a sexual abuse prevention program for adults with mental retardation. *Journal of applied behavior analysis*, 31(1), 91-101.
- M. Raspa, T. F., R. D. Furberg, A. Wylie, R. Moultrie, M. DeRamus, A. C. Wheeler & L. McCormack. (2018). Mobile technology use and skills among individuals with fragile X syndrome: implications for healthcare decision making. *Journal of Intellectual disability Research*, 62, 821-832. doi:10.1111/jir.12537
- Mabila, F. (2013). What is happening in ICT in Mozambique. *Evidence for ICT policy action*. Retrieved from researchICTAfrica.net.
- Mahoney, A., & Poling, A. (2011). Sexual abuse prevention for people with severe developmental disabilities. *Journal of Developmental and Physical Disabilities*, 23(4), 369-376.
- Maputo, U. S. E. (2019). MOZAMBIQUE 2018 HUMAN RIGHTS REPORT. Retrieved from <https://mz.usembassy.gov/mozambique-2018-human-rights-report-2/>.
- McCartan, K. F., Merdian, H. L., Perkins, D. E., & Kettleborough, D. (2017). Ethics and issues of secondary prevention efforts in child sexual abuse. *International journal of offender therapy and comparative criminology*, 0306624X17723951.
- McCarthy, M., & Thompson, D. (1997). A prevalence study of sexual abuse of adults with intellectual disabilities referred for sex education. *Journal of Applied Research in Intellectual Disabilities*, 10(2), 105-124.
- McGee, H., Garavan, R., de Barra, M., Byrne, J., & Conroy, R. (2002). The SAVI report: sexual abuse and violence in Ireland. *Psychology Reports*, 10.
- McIlwaine, C. (2013). Urbanization and gender-based violence: exploring the paradoxes in the global South. *Environment and Urbanization*, 25(1), 65-79.
- Miltenberger, R. G., Roberts, J. A., Ellingson, S., Galensky, T., Rapp, J. T., Long, E. S., & Lumley, V. A. (1999). Training and generalization of sexual abuse prevention skills for women with mental retardation. *Journal of Applied Behavior Analysis*, 32(3), 385-388.
- Picard, P. (2007). Tech Abuse in Teen Relationships Study. Retrieved from <http://www.pcadv.org/Resources/liz-claiborne-2007-tech-relationship-abuse.pdf>
- Poche, C., Yoder, P., & Miltenberger, R. (1988). TEACHING SELF-PROTECTION TO CHILDREN USING TELEVISION TECHNIQUES. *Journal of Applied Behavior Analysis*, 21(3), 253-261. Retrieved from

- <https://onlinelibrary.wiley.com/doi/abs/10.1901/jaba.1988.21-253>.  
doi:doi:10.1901/jaba.1988.21-253
- Rabionet, S. E. (2011). How I learned to design and conduct semi-structured interviews: An ongoing and continuous journey. *The Qualitative Report*, 16(2), 563.
- Research, U. O. o. (2015). Privacy and Confidentiality. Retrieved from <https://www.research.uci.edu/compliance/human-research-protections/researchers/privacy-and-confidentiality.html>
- Rock, A. (2013). National response efforts to address sexual violence and exploitation against children in Mozambique: a desktop study.
- Ruwe, K. a. M., T. F. and Derby, Kenneth and Johnson, Jessica. (2011). The Multiple Effects of Direct Instruction Flashcards on Sight Word Acquisition, Passage Reading, and Errors for Three Middle School Students with Intellectual Disabilities. *Journal of Developmental and Physical Disabilities*, 23, 241-255. doi:10.1007/s10882-010-9220-2
- SAGE Research Methods Datasets. (2017). Analysing Semi-Structured Interviews Using Thematic Analysis: Exploring Voluntary Civic Participation Among Adults (Publication no. <http://dx.doi.org/10.4135/9781526439284>). Retrieved 7 March 2018, from SAGE Publications, Ltd.  
[https://wiserd.ac.uk/sites/default/files/documents/Overview\\_1.pdf](https://wiserd.ac.uk/sites/default/files/documents/Overview_1.pdf)
- Sedlak, A. J., & Broadhurst, D. D. (1996). The national incidence study of child abuse and neglect. *Washington DC. US Department of Health and Human Services*.
- SHAPIRO, J. (2018, 8 January). The Sexual Assault Epidemic NO One Talks About. Retrieved from <https://www.npr.org/2018/01/08/570224090/the-sexual-assault-epidemic-no-one-talks-about>
- Shayegan, E. (2014). The invisible trauma in Afghanistan. *Global Journal of Arts Humanities and Social Sciences*, 2(5), 13-23.
- Sinha, R. (2003). Persona Development for Information-rich Domains. 830-831. Retrieved from <https://dl-acm-org.ezproxy.hioa.no/citation.cfm?id=766017>.
- State, U. D. o. (2012). *MOZAMBIQUE 2012 HUMAN RIGHTS REPORT*. Retrieved from United States Department of State:  
<https://www.state.gov/documents/organization/204358.pdf>
- Ulatius. (2016). A Brief Guide to Ethics for Interpreters and Translators. Retrieved from [https://www.ulatus.com/translation-blog/a-brief-guide-to-ethics-for-interpreters-and-translators/?fbclid=IwAR1KhjW3-1GG5nH\\_ZNLrCqmf46cAtOUEp\\_5xnU68bxiwwcqBVN7baUuwo8U](https://www.ulatus.com/translation-blog/a-brief-guide-to-ethics-for-interpreters-and-translators/?fbclid=IwAR1KhjW3-1GG5nH_ZNLrCqmf46cAtOUEp_5xnU68bxiwwcqBVN7baUuwo8U)
- UN. (2018). THE UNITED NATIONS WORK ON VIOLENCE AGAINST WOMEN. *Division for the Advancement of Women*. Retrieved from <http://www.un.org/womenwatch/daw/news/unwvaw.html>
- UNDP. (2018). *Human Development Index and its components*. Retrieved from <http://hdr.undp.org/en/2018-update>
- USAID. (2019, February 28, 2019). EDUCATION IN MOZAMBIQUE. Retrieved from <https://www.usaid.gov/mozambique/education>
- Walsh, K., Zwi, K., Woolfenden, S., & Shlonsky, A. (2018). School-based education programs for the prevention of child sexual abuse: a Cochrane systematic review and meta-analysis. *Research on social work practice*, 28(1), 33-55.
- Ward, K. M., Atkinson, J. P., Smith, C. A., & Windsor, R. (2013). A friendships and dating program for adults with intellectual and developmental disabilities: A formative evaluation. *Intellectual and developmental disabilities*, 51(1), 22-32.
- Whiting, L. S. (2008). Semi-structured interviews: guidance for novice researchers. *Nursing Standard (through 2013)*, 22(23), 35.

- WHO. (2011). World report on disability 2011.
- WORLD, L. F. T. (2015). MOZAMBIQUE COUNTRY STRATEGY 2016-2020. Retrieved from [https://www.light-for-the-world.org/sites/lfdw\\_org/files/download\\_files/moz\\_country\\_strategy\\_en\\_accessible\\_0.pdf](https://www.light-for-the-world.org/sites/lfdw_org/files/download_files/moz_country_strategy_en_accessible_0.pdf)
- Xavier Muianga, H. H., Anders Nilsson, Avelino Mondlane, Inocente Mutimucuo. (2013). ICT in Education in Africa - Myth or Reality: A Case Study of Mozambican Higher Education Institutions. *The African Journal of Information Systems*, 5(3).
- Zailinawati Abu Hassan, P. S. a. D. M. (2006). Doing A Pilot Study: Why Is It Essential? *Malaysian family physician : the official journal of the Academy of Family Physicians of Malaysia*, 1((2-3)), 70-73. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4453116/>.
- Zeuthen, K., & Hagelskjær, M. (2013). Prevention of child sexual abuse: Analysis and discussion of the field. *Journal of child sexual abuse*, 22(6), 742-760.

## **9 Appendices:**

### **9.1 Interview Guide prior pilot testing**

#### **9.1.1 Observation Questions**

- a. What do you think about the system so far?
- b. What do you think about the information content videos?
- c. What do you think about the information provided according to levels?

#### **9.1.2 Interview Questions**

- a. Tell me about your experience/ knowledge regarding sexual violence.
- b. What do you think about the system?
- c. How informative did you find the system?
- d. How informative do you think the system will be for people with intellectual disabilities and other user groups?
- e. What are the things you learned from the system today?
- f. How comfortable were you using the system and the contents provided?
- g. Any feedbacks or changes that you would like to give on the system.

### **9.2 Interview Guide after pilot testing**

#### **9.2.1 Interview guide for caretakers**

##### Social Scenario:

1. What according to you, is the daily life situation for people with cognitive disabilities?
  - What about them being mostly for those whose disability is not visible in Mozambique?
2. What are the biggest challenges that people with intellectual disability faces?
3. What do you think role of government must be to remove those barriers?
  - What do you think role of social workers must be to reduce those challenges?

##### Personal behavior:

4. What are the daily activities that people with Intellectual disability (their names if possible) prefer doing and on their own where they don't need help from you or others?

5. What are the most common challenges that he/she experiences while \_\_\_\_ (what they are doing)?

- How and what do you do to help reduce those challenges in household?

Behavior development and analysis:

6. How and what do you do for his/her education? Do you use any certain technique, schooling at home, taking her to behavioral schools, etc.?

Assault prevention:

7. The amount of rape and sexual assault happening to people with intellectual disability is more than seven times the rate against people without disabilities and that for women with intellectual disability is about 12 times compared to men with intellectual disability. Do you know any training programs or social support groups that helps to reduce those issue?

8. What is your thought on educating people with intellectual disabilities about acknowledging various sexual assault behaviors?

- How do you think providing trainings about prevention techniques help to reduce the numbers?

Assault prevention online:

9. What is your thought on educating them online using a website?

10. What do you think would be the possible difficulties that may arise doing it online?

## **9.2.2 Interview guide for individual with Intellectual Disability**

Social Scenario:

11. What according to you, is the daily situation for people with cognitive disabilities?

- What about them being mostly for those whose disability is not visible in Mozambique?

12. What are the biggest challenges that one face?

13. What do you think role of government is to help eliminate those barriers?

- What do you think role of social workers is to help eliminate those challenges?

Assault prevention:

14. The amount of rape and sexual assault happening to people with intellectual disability is more than seven times the rate against people without disabilities and that for women with intellectual disability is about 12 times compared to men with

intellectual disability. Do you know any training programs or social support groups that helps to reduce those issue?

15. What is your thought on educating people with intellectual disabilities about acknowledging various sexual assault behaviors?

- How do you think providing trainings about prevention techniques help to reduce the numbers?

Assault prevention online:

16. What is your thought on educating them online using a website?

17. What do you think would be the possible difficulties that may arise doing it online?

### **9.2.3 Interview guide for social workers**

Social Scenario:

18. What is the current situation of people with cognitive disabilities (not necessarily physical too but emphasizing on intellectual) in Mozambique?

Sexual violence scenario:

19. The amount of rape and sexual assault happening to people with intellectual disabilities is found to be seven times the rate against people without disabilities and that for women with intellectual disability is 12 times compared to men with intellectual disability. What is the overall picture here in Mozambique? Do you hear about it too often?

20. What according to you must be done to reduce those number?

21. What are the possible difficulties that may arise while implementing those solutions here in Mozambique?

22. How and what according to you, should be the realistic(accurate) approach to overcome those barriers?

Behavior analysis and assault prevention:

23. What is your say on educating people with Intellectual disabilities about acknowledging various sexual assault behaviors?

- How do you think providing trainings about prevention techniques help to reduce the numbers?

24. What are the possible barriers that may arise while educating people with Intellectual disabilities or while providing them training?

- How and what according to you, would be the most accurate approach to overcome those barriers?

25. Taking about educating them, how and what according to you, would be the most effective approach on training people with intellectual disability about sexual assaults?

Assault prevention online:

26. What is your thought on educating them using online platform/ online training?

- What do you think would be the possible barriers that may arise while teaching it online?
- What according to you must be done to overcome those barriers?

27. What are the challenges do you think they will be facing while using this system?

28. And what according to you, must be done to overcome those challenges? Your ideas and thought on that.



### 9.3 Database of the system:

The database named “wcfid” which consists of two tables named “quiz” and “user registered”. The quiz table consists of all the data related to quiz modules and the user registered consists of all the data related to user’s registered.

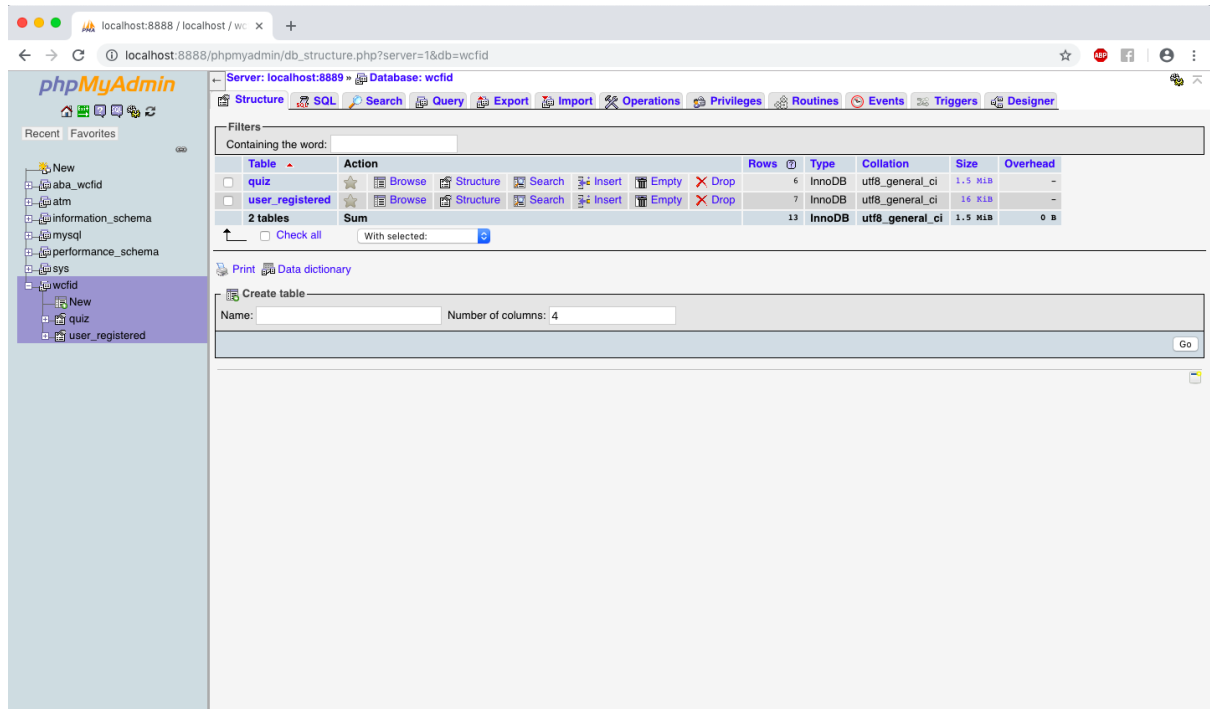


Figure 22: Wcfid database with its two tables.

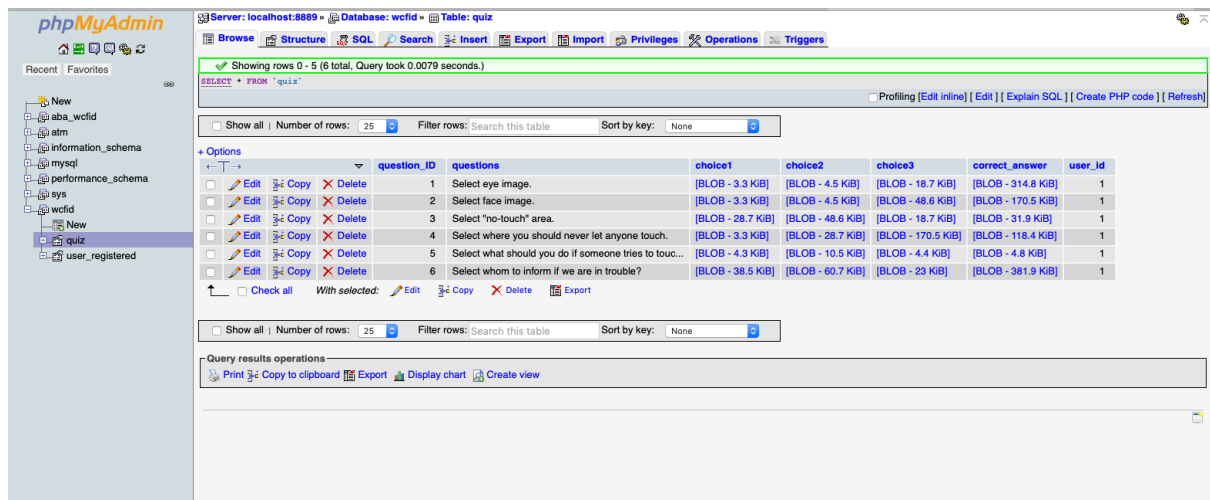


Figure 23: Quiz table of the wcfid database.

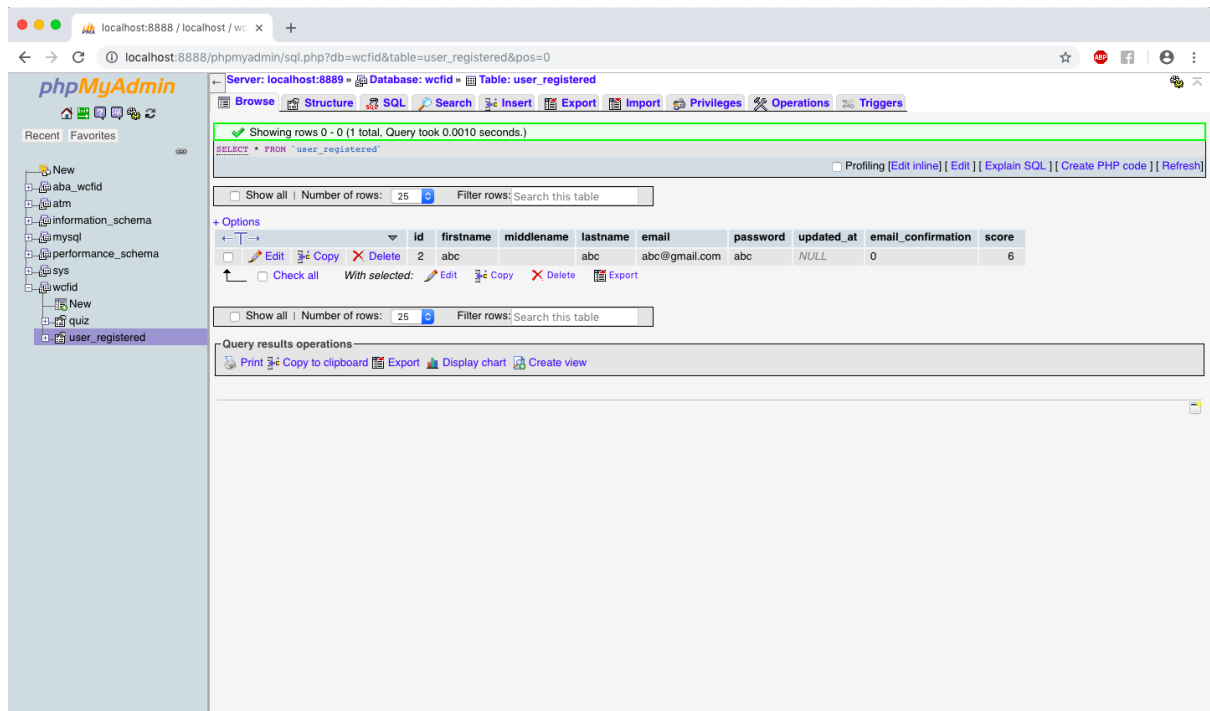


Figure 24: User registered table of WCFID database

## 9.4 Consent form:



### **Are you interested in taking part in a Research Project?**

“(Online Training Platform for Right to protection from Sexual Abuse for Persons With Intellectual Disability)”

This is an inquiry about participation in a research project where the main purpose is to provide information regarding sexual assaults and hope to reduce problems accordingly. In this letter we will give you information about the purpose of the project and what your participation will involve.

#### **Purpose of the project**

Oslo Metropolitan University (OsloMet – storbyuniversitetet) is conducting a Master’s thesis research on the design and development of an online training platform for people with Intellectual disabilities (WCFID), that will analyze and promote informative contents about the various issues regarding sexual abuse. The goal of this project is to analyze the psychological level of people with intellectual disabilities of different age groups towards sexual assault and provide knowledge accordingly. This information received will hopefully provide a context and help to reduce such problems in the upcoming future in Mozambique and around the globe. The research question for this project is:

“How can these training sessions used as an ICT solution, help people with intellectual disability to overcome and prevent themselves from unmannerly situations?”

#### **Who is responsible for the research project?**

Oslo Metropolitan University (OsloMet – storbyuniversitetet) is the institution responsible for the project.

## **Why are you being asked to participate?**

Since this project is a Mozambique-Norway Accessibility Project (MAP) of OsloMet and Eduardo Mondlane University. Different department of Eduardo Mondlane University helped us find different user groups for this project. The various user groups assigned for this project are: People with Intellectual Disabilities, their caretakers, social workers working for them. Thus, you are being asked to participate as you fall under those user group.

## **What does participation involve for you?**

As a part of this project, an informal interview along with observation will be conducted between people with intellectual disabilities, their caretakers and the social workers to gather their knowledge and experiences regarding sexual abuse and the system. We invite you to participate in an interview and observation to learn about your experiences, your knowledge, and your insights into these issues.

Both the interview and observation will take place at a time convenient for you— during the day or evening, on a weekday or weekend. We expect the interview to take approximately 30-60 minutes. Each interview and observation will be audio recorded for both accuracy and later analysis. All information will be kept confidential. This means that your name will not appear anywhere and your specific answers will not be linked to your name in any way or your organization. In any reports we write, we will not reveal any details that could identify you. As for the observation, the system requires email for register and login. However, the email will be completely confidential and will not be used for any other purposes except for login of that system. In any reports we write, we will not reveal any details that could identify you.

## **Participation is voluntary**

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw. The withdrawal will not affect your relationship with the university, or organization in any way. Please do not hesitate to

ask questions about the research if you have any. We will be happy to explain anything in detail if you wish. In addition, you can refuse to answer any questions and are free to stop the interview at any time. If you decide to take part and later no longer wish to continue, you also have the right to withdraw from the study at any time, without any penalty.

### **Your personal privacy – how we will store and use your personal data**

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- The data will only be used for the research of this project and will be handled by the project supervisor and the student working on this project.
- The database storing the email and name lists will be on the local server and locked away and no unauthorized person will be able to access the data.

### **What will happen to your personal data at the end of the research project?**

The data will be archived and anonymized by 31.12.2022. With your permission, we would like to retain your contact information for the purposes of follow-up or clarification until the end of 2022.

### **Your rights**

So long as you can be identified in the collected data, you have the right to:

- - access the personal data that is being processed about you
- - request that your personal data is deleted
- - request that incorrect personal data about you is corrected/rectified
- - receive a copy of your personal data (data portability), and
- - send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority

Authority regarding the processing of your personal data

### **What gives us the right to process your personal data?**

We will process your personal data based on your consent. Based on an agreement with [**Oslo Metropolitan University**], NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

### **Where can I find out more?**

If you have any questions, concerns, or complaints about the research, please do not hesitate to contact us. If you have any questions about your rights as a research participant, concerns, or complaints that you wish to address to someone other than the investigator, or if you cannot reach the investigators, contact the OsloMet reception at +47 67 23 50 00 or contact:

- Oslo Metropolitan University via George Anthony Giannoumis, project supervisor and Monika Shrestha, Master Student.
- NSD – The Norwegian Centre for Research Data AS, by email: ([personvertjenester@nsd.no](mailto:personvertjenester@nsd.no)) or by telephone: +47 55 58 21 17.

---

### **Consent form**

I have received and understood information about the project “**Online Training Platform for Right to protection from Sexual Abuse for Persons with Intellectual Disability**” and have been given the opportunity to ask questions. I give consent:

- to participate in an interview.
- to participate in Observation.
- To be audio recorded.
- I give consent for my personal data to be processed until the end date of the project, approx. 31.12.2022.

---

(Signed by participant, date)

## 9.5 Field notes:

“On 28th February 2019 in Mozambique, two people with intellectual disability were selected through a disability rights program to conduct the interview. A translator was requested due to the language barrier as both of them speak in Portuguese and didn't understand English. Both of the participants were female and were pretty shy and were hesitant however, they agreed for the interview. When asked about social scenarios of people with intellectual disabilities there in Mozambique, one of them replied, though in most cases people are kept in a hostile environment and are discriminated, she feels lucky enough to have a family who loves her and supports her with her disability, and helps her overcome her difficulties. However, another participant seemed dejected and replied, she had faced isolations everywhere she has been, she feels segregated for not being invited to her family gatherings. She then goes in search for work, people ignore her, doesn't take her seriously and asks for “the favors” in return for providing her with work, good salaries. She even mentioned one of her painful encounters with teary eyes she said, During the time of her son's birth, the professionals were incapable to handle and treat her on her labor and was left isolated causing her both physical and mental trauma. Apart from their personal experiences, when asked about the other reason and solutions to eliminate those barriers, both of them agreed that lack of government involvement has to be reduced and people from governmental sector should attend the conventions and programs to listen what people with disabilities have to say and understand their issues and needs. They suggested that both parent and child must be taught about various sexual traumas and behaviors, the social stigmas causing them and their prevention techniques and preferred personal interactions rather than technology learning. However, they believe technology does have its own merits and helps people recognize different values, and grab their attention.”

“On 3rd April 2019, an interview was conducted with various social workers working mainly for children with intellectual disability in various provinces in Mozambique. Though there was a language barrier, a translator was present. When asked about the victim group and their status in Mozambique, they stated, ‘They are violated at home the most, those who were supposed to support the child with intellectual disability are those who are discriminating them and doing that kind of violence’. They showed their dissatisfaction to the local government saying that there is no proper law that has been implemented for those victim groups. They mentioned that people with intellectual disability don't have the

right to get a space of land, get employed, or even get engaged or married. They face violence at home through their relatives and their family members. And if someone from the outside ever witnesses that and complains or tries to support those victim groups, the family members decline it saying they are mad people and one shouldn't believe on it. Various field examples were provided of various victims on different provinces in Mozambique and how they had been trying from an organization perspective to overcome and help those victim groups. Some example such as, a successful person with an intellectual disability running a 'normal' life, who is earning his living and got married. He had to go through a lot of hurdles on every stage of his life just because he had some form of mental disability. Another example provided was a 17-year-old girl, who had an intellectual disability as well as motor impairments, who family from a poor economic background. She would be laid on the bed for days and raped and abused by her family members. When interrogated and suggested for the victim's betterment, the caretaker explained she was too tired to carry the victim around though there was wheelchair available. To reduce all these issues and problems, they requested the government's involvement in the social service for people with an intellectual disability or any other form of disability. They also suggested maybe security funds from the government might also reduce the problem to some extent. When asked about educating them and providing prevention programs, they highly agreed on in-situ methods of training but online training methods, for now, was suggested to be doubtful."

"On 15th February 2019, an interview session was conducted between a psychology professor who has been having interactions with students with intellectual disability and other cognitive impairments and dealing with them. According to his perspective, people with physical disabilities are of the main focus, and inside the organization, those who have difficulties in learning and have physical disabilities are taken into high priority. He believes that improve on the infrastructures to provide access to the rooms, inclusive buildings and study environment will be the main factor to increase the literacy among those victim groups. He also believes that lectures should be involved in training for specific assistance for the students. In terms of barriers outside the organization or class, he suggests that people must accept their conditions. He specified usually people don't accept they are sick or have issues and try to hide their problems or lock down their situations, resulting onto increase on their problems, isolating themselves at home not limiting themselves from schools and so on. Thus, all user groups must be provided awareness regarding mental health so parents or guardians can support their children or



other family members to overcome them. Moreover, he also highlighted, the economic situation of the family might also be an additional factor on increase of the issue and suggested governmental help by providing resources might be one solution to reduce the number. He also pointed out that lecturers must be trained enough to understand students body language and change in behaviors, support to overcome and reach higher levels. He informed that the Ministry of education in Mozambique does have a specialized sector that deals with all the issues in terms of education, equality and learning but the issues has to be raised and mentioned. In terms of providing training through the online platform, he seemed skeptical. He suggested if the information's available on the platform is certified by professionals and is on one to one forum basis and that also anonymous, it might be of great use. However, lack of access to a platform such as devices, internet, and even power will be the first and biggest barrier of the system. Along with language barrier as the system is in English and highlighted that even if the system is developed on the national language which is Portuguese the language issue will still be there as different provinces have their languages."

On 28th March 2019, an interview session was conducted with one of the caretakers of people with intellectual disability, according to him, mental health care is scarcity in Mozambique because there are a lot of people with mental health issues and very little services available. The cultural interpretation of people with mental health issues are taken as a result of witchcraft and are discriminated by society. He believes the involvement of government and being an example of non-discriminatory practices will help reduce the isolation to some extent. He shows his concern mentioning that government still takes the charity and medical approach to disability and thus strongly recommends, the disability must be mainstreamed. He believes people with intellectual disability can do anything on their own and doesn't need to depend on others if they are provided proper training so, sympathizing action must be reduced and educating and proper training opportunities must be provided. He specifically mentioned, 'The Constitution of the Republic Mozambique still talks about protection aid for people with disability and not about the right of people with disability' thus recommends it must be changed so that people can act accordingly referring the legal environment. He quotes, 'As most of the barriers come from the society, thus behavior and the practice of the society must be changed. We must start seeing victim group as people with rights and their rights must be granted.' Since social isolation is the biggest challenge people with intellectual disability faces, being a parent of one, he mentioned, even parents and family members have to

face the isolation. Thus, in most cases they would rather hide the victim groups from society thus they won't have to face the discriminations themselves. He believes that once the mentality of society is changed and the victim group is given opportunities to explore their potential, they can be a helping help for society. He suggests providing an online platform to learn might be a good idea but a lot of backgrounds must be done first before that. Teaching them to read and write, teaching them about basic skills such as using a computer and the internet are required first.”

## 9.6 Code Description

The system code is compressed in “website.zip” file. All the relevant file name and description are explained in the table below.

Folder name	Description
Views	All the front-end page of the website can be found in this folder. This folder contains “home” and “user” sub folder which contains view page of the website.
Controller	All the functionalities to connect the view pages to the back-end of the website can be found in this folder.
Models	This folder contains all the database connection files of the website.

*Figure 25: Code file description*