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DEVELOPMENT OF "DIDIK INKLUSIF" E-LEARNING AS AN EDUCATIONAL PLATFORM FOR CAREGIVERS ON SEX EDUCATION FOR CHILDREN WITH SPECIAL NEEDS

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ABSTRACT

Sex education for children with special educational needs (SEN) is still often considered taboo. Many people assume that they do not need sex education because of the assumption that children with SEN do not have an understanding or need for this aspect. In addition, many caregivers have difficulty in teaching it due to limited understanding of the concept, lack of knowledge about the right method, and restricted access to learning resources or opportunities. As a result, children with SEN are at higher risk of becoming victims or perpetrators of sexual abuse. This lack of accessibility becomes the foundation of our research, highlighting the need for e-learning as a solution compared to other methods. This study aims to develop Didik Inklusif e-learning as a learning platform for caregivers on sex education for children with SEN, using the Research and Development (R&D) method with the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) approach. The research involved a sample of 60 caregivers. The results indicate that 88.3% of caregivers expressed a high interest in using e-learning for sex education. Didik Inklusif answers this need by providing two types of classes namely Web Class and Live Class. In addition, Inclusive Education provides counseling services for caregivers in need and a community forum for sharing experiences and learning. Caregivers need the e-learning Didik Inklusif platform, which has a positive impact by providing a space for them to understand and implement sexual education for children with SEN.

Keywords: E-Learning, Sex Education, Children with Special Needs, Caregivers

INTRODUCTION

Sexual instinct is a natural part of human development. Sexual instinct plays a role in the reproductive process to continue offspring, where each stage of human development also involves sexual development (Kwirinus, 2022). This sexual development continues throughout human life starting from the prenatal period to adulthood which is an important aspect of human life that affects various dimensions of life ranging from biological, psychological, social, and cultural dimensions (Ahmad, 2022). Understanding and managing sexual instincts through sexual education plays an important role in overall human well-being both physically, psychologically, socially and emotionally.

Sexual education is an integral part of the healthy and sustainable development of the individual. It is not only about biological and anatomical knowledge but also involves a deeper understanding of the social, psychological, and cultural aspects of human sexuality (Logie in Suwarni, 2024). However, sexual education is often considered taboo, and sensitive and receives less attention, especially for children with SEN. Many assume that children with SEN do not need sexual education because the perception of their limitations also affects their sexual development. They are the same as other children who experience physical, mental, and sexual changes (Nurhikma, 2024). Due to the lack of understanding and minimal education regarding sexual education for children with SEN, many of them do not have adequate information to understand their bodies, personal boundaries, and the concept of healthy relationships. This can increase their risk of abuse, exploitation, and difficulty in managing emotions and behaviours related to sexuality. According to Jones et al., (2021) shows that the lack of adequate sexual education can increase the vulnerability of children with SEN to sexual exploitation.

In several studies, adequate sex education is very important for children with SEN. According to Stein (in Nurhikma, 2024), sexual education as one of the preventive measures of sexual violence is a program needed by children with special needs. Through sexual education, children will learn about physical growth and body image, touch that is allowed and not allowed, feelings towards the opposite sex, values and beliefs about sexuality, as well as gender identity and gender roles. Research by Brown & McCann (2020) also shows that getting adequate sex education increases awareness and understanding of children with SEN about their rights and helps them develop healthy relationships. This increases the urgency of sex education to be provided as early as possible to children with SEN. According to WHO (2023), many parties are involved in providing this sex education. Ideally, sound and consistent education on these topics should be provided from multiple sources. This includes parents and family members but also teachers, who can help ensure young people have access to scientific, accurate information and support them in building critical skills. In addition, sex education can be provided outside of school, such as through trained social workers and counsellors who work with young people (WHO, 2023). These individuals are often referred to as caregivers, where caregivers are individuals who are responsible for caring for and accompanying children with SEN in various aspects of their lives. They can be parents, caregivers, professionals such as educators, teachers, and therapists, as well as individuals who provide direct services and assistance to children with SEN.

However, caregivers often have difficulty providing sexual education to children with SEN. Accessibility is a major issue, as many educational programs are not designed with the specific needs of individuals with disabilities or learning disorders in mind, so they may not receive information in the most effective way for them. In addition, lack of resources, both financial and material, limits the ability of educational institutions and organizations to provide adequate educational materials and training for educators. These obstacles often lead to the inability to implement programs consistently and comprehensively (Wardhani in Prasetyaningsih, 2024). Therefore, a learning platform in the form of e-learning is needed for caregivers to learn sexual education for children with SEN, so that they can provide education in the right way. According to Liu & Yu (2023), e-learning allows better learning differentiation, by providing content that can be tailored to students' individual learning needs. To address this issue, this study seeks to answer the following research questions: How is the development of Didik Inklusif e-learning as an educational platform for caregivers on sex education for children with special needs?

LITERATURE REVIEW

Children with SEN are citizens who must be protected by laws and regulations by their educational rights and also based on their potential and abilities. Children with SEN are people who require special education services to meet their needs according to their potential abilities (Maknun, 2019). The Constitution of the Republic of Indonesia Number 8 of 2016 describes the types of children with SEN into 4, namely people with physical, intellectual, mental, and sensory disabilities. The differences in the types of children with SEN in each child shape the way they learn and interact with their environment. Although looked down upon by some people, they still have the right to receive education, one of which is sex education.

Children with SEN have the right to receive a comprehensive sex education program so that they become individuals who do not depend on the protection of others. However, children with SEN are often considered not to need sex education because the perception of their limitations also affects their sexual development. They are the same as other children who experience physical, mental, and sexual changes. Lack of knowledge about sexuality makes them unable to express their sexual needs properly or control their sexual urges, even ending up becoming perpetrators of sexual violence without realizing it (Wu & Zeng, 2020). In addition, the lack of ability to read risky social situations and the ability to protect themselves makes them more vulnerable to becoming victims. Based on records from the Ministry of PPPA, in 2022 cases of sexual violence reached 9,588 cases. This number increased from the previous year's 4,162 cases. For children with special needs, the risk of sexual violence is 3 to 10 times greater than other children (Wu & Zeng, 2020). This is because the disabilities they have, limited communication, and social isolation have made them vulnerable to sexual exploitation (Daigneault et al., 2023).

Another factor is the large number of caregivers who still face challenges in providing appropriate sex education for children with SEN. Caregivers are those who accompany patients in care, administer medication, and meet other important daily functional needs (Li & Song, 2019). In this case, caregivers include parents, siblings, teachers, nannies, therapists, and medical teams who care for and treat children with special needs. They face challenges in providing appropriate sex education for children with SEN, primarily due to limited resources and appropriate methods. This is in line with what Furwasyih et al., (2022) stated that limited resources and trained professionals in working with children with SEN are a major obstacle to prevention and treatment efforts. Furthermore, according to the Global Down Syndrome Foundation (2019), caregivers are in an unparalleled position to provide instruction and approval for behaviors that can promote positive sexuality and change towards social acceptance. Therefore, caregivers need to be provided with a platform to learn how to teach sex education to children with SEN through e-learning.

The use of e-learning is beginning to be adopted as an innovative alternative in providing sex education for children with special needs (SEN). E-learning offers more interactive materials, is accessible anytime, and is tailored to individual needs, enabling broader educational access and overcoming the geographic and physical barriers often faced by students with special needs (Alenezi, 2020; Cinquin et al., 2019). Furthermore, this solution allows for more effective learning differentiation by providing content in various formats and difficulty levels, tailored to each student's abilities and interests (Liu & Yu, 2023). Several online platforms currently offer sex education materials, but upon analysis, most of these platforms do not specifically address the needs of children with special needs. For example, research by Nilasari et al., (2024), which developed an online module on reproductive health and sexually transmitted infections (STIs) for Indonesian adolescents, demonstrated several advantages, such as comprehensive information, an interactive approach, broad accessibility, and the use of inclusive and non-judgmental language. However, the module is still insufficient to help caregivers understand how to deliver appropriate sex education to children with SEN, both in terms of approach, material simplification, and adaptation to individual children's needs. Another study by Intyaswati (2023) showed that Instagram, specifically the @taulebih account, can be a platform for Islamic-based sex education that has a positive impact on the knowledge and behavior of its followers. However, the content presented is still general, not specifically aimed at children with SEN, and is presented in the form of simple posts limited to brief information. Meanwhile, the author has not found an e-learning platform similar to Didik Inklusif either in research or on other available platforms.

Therefore, the development of Didik Inklusif is an appropriate step to help caregivers provide appropriate sex education to children with special needs.

Two theories that can support this research are Piaget and Vygotsky's Constructivist Learning and Teaching Theory and the Disability Rights Perspective with a focus on the Social Model of Disability. First, Piaget and Vygotsky's Constructivist Learning and Teaching Theory (as cited in Casfian, 2024) argues that learners acquire knowledge actively and contextually through interaction with their environment and others. This theory views learning as a process in which learners actively construct their knowledge. This process requires learners to actively think, organise concepts, and give meaning to the material being studied. In this approach, educators act as facilitators who support learners in constructing their knowledge, by understanding learners' ways of thinking and perspectives to help them form their understanding. E-learning, in the context of constructivism, offers a platform that supports active, collaborative, and personalised learning, where digital technology facilitates a dynamic and flexible learning environment. It is this experience and ease of access to independent learning that the Didik Inklusif platform aims to provide amidst the time constraints and mobility limitations of caregivers when accompanying adolescents with disabilities. Second, the Disability Rights Perspective (Shakespeare, 2004) emphasises the need to acknowledge social barriers as a source of inequality in clarifying the rights of children with disabilities to receive appropriate sex education. The Didik Inklusif platform provides learning tools and an advocacy platform that supports the sexual health rights of children with disabilities.

METHODOLOGY

The research method used in this study is Research and Development (R&D) with the ADDIE model which consists of five stages, namely analysis, design, development, implementation, and evaluation. This study aims to develop the Didik Inklusif e-learning as an educational platform for caregivers in sex education for children with SEN. The research stages in the ADDIE model such as analysis, design, development, implementation, and evaluation. But the author has not yet carried out the implementation and evaluation stages of the Didik Inklusif e-learning. Table 1 explains each stage in detail.

Table 1. ADDIE model stages

Analysis	Design	Development	Implementation	Evaluation
<ul style="list-style-type: none"> Collecting initial data and information by distributing questionnaires to 60 caregivers; The questionnaire has been validated by a senior special education teacher and an educational psychologist to ensure the readability and suitability of the instrument content. 	Creating an e-learning platform design starting from the system flow, content, to the display design.	Created and the required content is included such as materials, videos, guidebooks, activity information, etc.	The author will implement the Didik Inklusif e-learning program with caregivers.	The author will distribute an evaluation questionnaire regarding the use of the Inclusive Education e-learning program to caregivers.

RESULTS AND FINDING

Before explaining e-learning Didik Inklusif, the author first presents the results of the questionnaire distribution sent to 60 caregivers, consisting of teachers, parents, therapists, and caregivers. This initial study aims to obtain an overview of the caregiver's experience in providing sex education to children with SEN, the obstacles they face, their views on the importance of sex education for these children, and their needs for e-learning media as a means of education.

The first question asked of 60 respondents was related to their experience in providing sex education to children with SEN. The results shown in Figure 1 show that 73.3% of respondents stated that they had provided sex education to children with special needs, while 26.7% stated that they had not. This implies that there are still caregivers who have not provided sex education to children with SEN. In addition, although the number of caregivers who have provided education is greater, the material presented is still limited to introducing body parts. There are still many other important aspects that need to be taught, such as maintaining body privacy, dealing with puberty, personal safety, and other important materials.

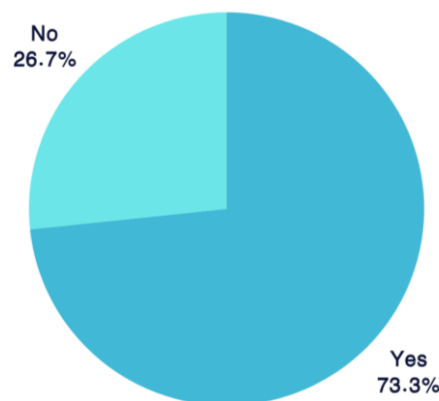


Figure 1. Teaching sexual education to children with special needs

The next question concerns the importance of sex education for children with SEN. The results shown in Figure 2 show that 95% of respondents answered that it is very important to provide it, and 5% answered that it is important. This implies that sex education is very necessary for children with special needs, considering the increasing number of cases of sexual harassment involving them, both as victims and perpetrators, due to a lack of understanding of sex education. Therefore, the role of caregivers or those closest to them is very important in delivering this education. However, in practice, caregivers still face various challenges, such as difficulties in teaching abstract concepts, limited understanding of children, and a lack of appropriate learning resources. This emphasizes the importance of providing education and a forum for caregivers so that they can learn the right way to deliver sex education to children with SEN.

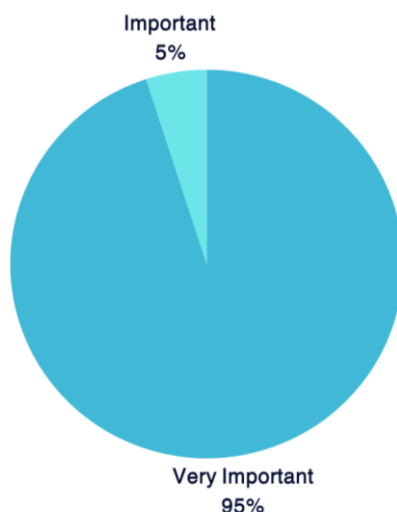


Figure 2. The Importance of sex education for children with special needs

Finally, the author asked about the interest of caregivers, including parents, teachers, therapists, caregivers, and medical teams, in using an e-learning platform as a means of sex education for children with SEN. Based on Figure 3, the results show that 88.3% of respondents stated that they were interested, while 11.7% stated that they did not need it. This confirms the finding that the majority of caregivers need e-learning as a learning medium and hope for the existence of such a platform. Therefore, the author continued this initial research by developing an e-learning platform called Didik Inklusif, which is designed as a learning medium for caregivers in providing sex education to children with SEN.

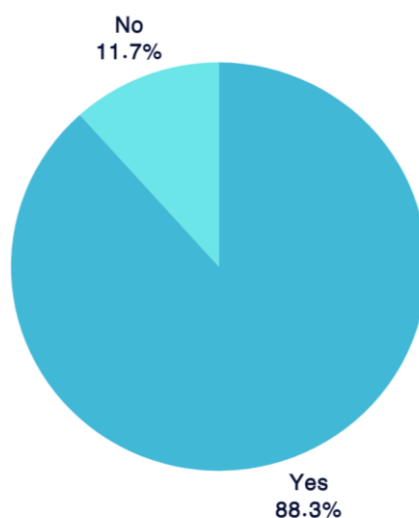


Figure 3. Caregiver interest in e-learning

E-learning Didik Inklusif is a learning platform designed for caregivers to provide education on sex education for children with SEN. This platform is designed with a user-friendly interface so that caregivers can easily access, learn, and apply the material in educating their children or students. Figure 4 explains the system flow of e-learning Didik Inklusif, which consists of three main components, namely Admin, Learning Management System (LMS), and Consumer. In this system, the admin is responsible for creating and managing courses, which are then displayed by the LMS on the course page.

Consumers, in this case caregivers, can choose the available courses according to their needs. If they already have an account, they can log in directly, while those who are not registered will be directed to register first. After that, the consumer makes a payment transaction, which is then confirmed

by the LMS. After the transaction is successful, the consumer is given access to the selected course and can start following the learning material. During the course, the LMS will assess the learning outcomes that have been followed by the consumer. The admin then evaluates the course process to ensure its effectiveness. Once the course is completed, the LMS will automatically end the course access, and the consumer is considered to have completed the learning. This flow ensures that caregivers get a systematic and effective learning experience in understanding and implementing sex education for children with SEN.

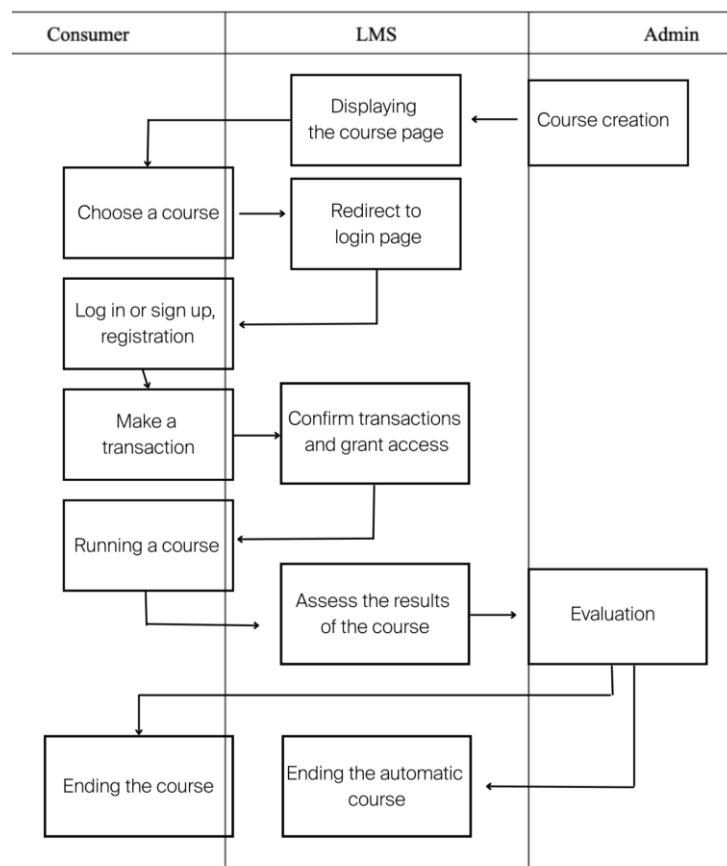


Figure 4. Inclusive education e-learning system flow

After creating the system flow, the author created Didik Inklusif e-learning using WordPress as a CMS (content management system) and Tutor LMS as a plugin/e-learning support. First, users are asked to register and fill in certain data. After successfully registering, participants are directed to log in to their created account by entering their email address and password, as shown in Figure 5. Once successfully logged in, users can access various features available on the platform. The author has conducted an informal trial of the platform to check whether the sign up and log in menus are functional or not. As a result, the menu can function properly.

The screenshot shows the 'Akun Saya' (My Account) section of the DidikInklusif website. It features two main forms: 'Masuk' (Login) and 'Daftar' (Sign Up). The 'Masuk' form includes fields for 'Nama pengguna atau alamat email' and 'Kata sandi', with a 'Masuk' button and a link for 'Kehilangan kata sandi?'. The 'Daftar' form includes fields for 'Nama pengguna', 'Alamat email', and 'Kata sandi', with a 'Daftar' button. A privacy notice is present below the 'Daftar' form, stating that personal data will be used to support the user's experience and manage account access. The website header includes the 'DidikInklusif' logo, a search bar, a 'Select Category' dropdown, and links for 'Beranda' and 'Akun saya'.

Figure 5. Login and sign-up features

In e-learning Didik Inklusif there are four main programs, namely Web Class, Live Class, Community, and Counseling, as shown in Figure 6. Web Class is a feature that allows caregivers to learn independently through modules, videos, and interactive activities that are specifically designed to support their understanding of sex education for children with special needs. Live Class is held online by presenting speakers who discuss certain topics. This program provides an opportunity for participants to interact directly, ask questions, and discuss the material discussed. A community is a place for caregivers to discuss with each other, share experiences, and exchange information on the best way to provide sex education to children with special needs. In this community, members can also get moral support and build networks with fellow caregivers and experts. Counselling is a service that allows caregivers to consult directly with experts, such as psychologists, therapists, or special educators. Through this counselling session, caregivers can get guidance and solutions related to the challenges they face in teaching sex education to children with SEN.



Figure 6. Main menu of e-learning Didik Inklusif

Furthermore, there is an outline of the material that can be accessed before starting the course, so that caregivers can get an overview of the material to be studied. The material is divided into two categories, namely sexual education for children with special needs and adolescents with special needs. This division aims to adjust the approach and delivery of the material according to the developmental stages

and needs of each group. Figure 7 shows an example of an outline of the Didik Inklusif course material for adolescents with special needs, which covers various topics, such as anatomy and physiology of the body, health and personal hygiene, emotional and social changes, personal boundaries and consent, and relationships and social interactions. Meanwhile, children with SEN will receive material on recognizing body parts, the concept of privacy, safe and unsafe touch, health and personal hygiene, and social relationships and self-limitations.

SEXUAL EDUCATION FOR ADOLESCENTS WITH DISABILITIES

Sex education for adolescents with special needs focuses on helping them understand biological changes, respect the sexual behavior of others, and prevent deviant sexual behavior or becoming victims of sexual violence

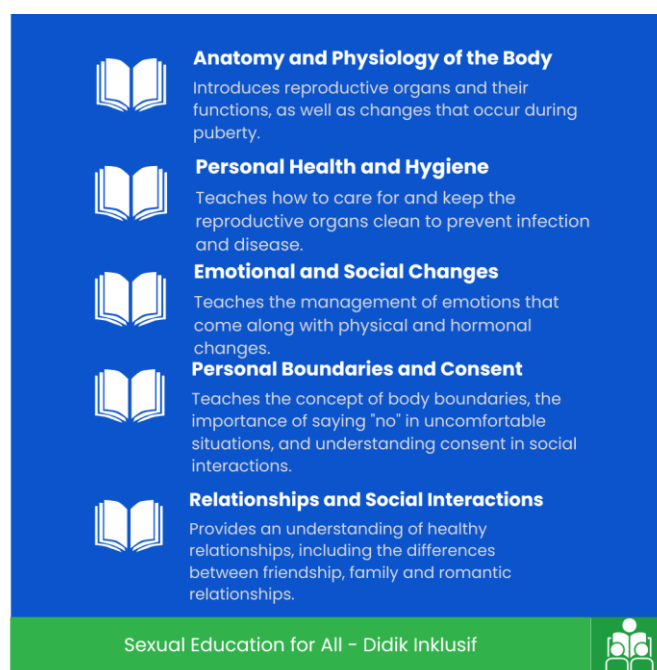


Figure 7. Outline of Didik Inklusif course material

DISCUSSIONS, RECOMMENDATIONS AND CONCLUSIONS

Sex education is one of the preventive efforts to protect children with special needs from sexual violence. The results of the questionnaire distribution showed that 95% of respondents stated that providing sex education for children with special needs is very important. This is in line with research by Ismiulya et al., (2022) that sex education is very urgent to be given to children. In addition, groups of people with disabilities are groups that are at risk of experiencing sexual abuse (Kildahl et al., 2020), which can be caused by the difficulties that some individuals may face in communicating (Yu et al., 2021), or that symptoms of sexual abuse can appear differently in autistic individuals (Kildahl et al., 2020). However, despite its importance, there are still 26.7% of caregivers who have not provided sex education. In fact, according to Zubaedah (in Ismiulya et al., 2022), sex education is also a basic capital for children to be able to protect themselves from sexual crimes that often occur in Indonesian society.

This program has not received much attention and still faces various challenges in its implementation in Indonesia. One of the biggest challenges is limited access to training and skills development for caregivers in providing optimal care, especially related to sex education. In developing countries, many children with disabilities are cared for by caregivers in less developed areas and have limited access to training and skills development to provide optimal care for them (Bizzego et al., 2020). Lack of resources including limited access to training for caregivers poses further challenges to the provision of optimal quality care for children with different abilities (Soni et al., 2020). Meanwhile, caregivers of children with disabilities are important stakeholders in maintaining the health, well-being, and survival of the children they care for. Caregivers need a comprehensive program that will empower them to provide effective care for children with disabilities. This is in line with what was conveyed by The Alzheimer's Society of York (2018) that it is very important for caregivers to have the knowledge,

skills, training opportunities, recognition, and support to provide optimal care for children with disabilities. Therefore, appropriate learning resources are needed for caregivers in teaching sex education to children with special needs. However, potential barriers to adoption must be acknowledged. These include limited digital literacy among caregivers, inconsistent internet access in rural regions, and a general lack of familiarity with online learning tools. To ensure successful implementation, it is essential to pair digital solutions with targeted outreach, digital training, and policy support aimed at bridging the technological divide.

Furthermore, the results of the questionnaire distribution showed that 72% of respondents who had been given sex education were still limited to body recognition. This is in line with what Tsuda et al., (2017) said that the management and curriculum of sex education in Indonesia are still limited. Most of the sex education materials in Indonesia discuss the differences between male and female bodies which are integrated into biology lessons in schools. Around 83% of teachers in Indonesia answered that the sex education curriculum taught to students was inadequate (Tsuda et al., 2017). According to Aziz (2014), specifically, the provision of sex education materials for children with special needs is more tailored to the physical, psychological, and age conditions of the child concerned. Because the characteristics of each child with special needs have quite striking differences. So that a material approach is needed that is adjusted to their conditions. Some other important materials that need to be provided are about the differences in anatomy and physiology between men and women, circumcision, genitals, caring for the body and dressing up, masculinity and femininity, sleeping and socializing in the family, and sexual problems (Roqib, as cited in Aziz, 2014). In addition, interpersonal communication is a supporting factor for the success of sex education for children with special needs (Zulia et al., 2023). Therefore, inclusive education provides materials to help caregivers deliver sex education to children with special needs in a way that is easier to understand and according to the needs of each child.

In addition, the results of the questionnaire distribution also showed that 88% were interested in using the e-learning platform. This will certainly increase the effectiveness, accessibility, and flexibility of learning, where e-learning is an innovative and efficient educational solution (Mirmoghtadaie et al., 2024). Didik Inklusif answers this need by providing two types of classes namely Web Class and Live Class. In addition, Didik Inklusif provides counselling services for caregivers who need it as well as a community forum to share experiences and learning.

CONCLUSIONS

The results of this study reveal that caregivers need e-learning as a learning tool that makes it easier for them to understand sex education for children with special needs. Didik Inklusif answers this need by providing two types of classes namely Web Class and Live Class. Web Class allows caregivers to learn independently through modules, videos, and interactive activities related to sex education for children with special needs. Live Class is held online with speakers discussing specific topics, allowing participants to ask questions directly. In addition, e-learning Didik Inklusif provides counselling services for caregivers who need it as well as a community forum to share experiences and learning. Caregivers need the e-learning Didik Inklusif platform, which has a positive impact by providing a space for them to understand and implement sexual education for children with special needs.

The results of this study reveal that caregivers need the Didik Inklusif e-learning platform as a learning tool that facilitates their understanding and implementation of sex education for children with special needs. Didik Inklusif meets this need through two class types namely Web Class and Live Class. Web Class offers self-paced learning via modules, videos, and interactive activities on sex education for children with special needs. Live Class features online sessions with expert speakers and live Q&A. The platform also provides counseling services and a community forum for caregivers to share experiences. Didik Inklusif empowers caregivers by offering a supportive space to understand and apply sex education effectively. This e-learning model plays a critical role in enhancing caregivers' competence in delivering appropriate sex education to children with special needs. Given its potential impact, policymakers should consider integrating Didik Inklusif into broader national strategies for inclusive education. Expanding access, improving digital infrastructure, and providing incentives for

caregiver participation will be essential steps to ensure effective implementation and sustainability of such digital interventions.

RECOMMENDATIONS

Further research can implement and test the effectiveness of the Didik Inklusif e-learning platform in improving caregivers' understanding of sex education for children with special needs, both in terms of material, interaction, and ease of use. In addition, in-depth studies can be conducted to develop interactive features more appropriate to caregivers' needs and explore the long-term impact of using this platform on parenting and the protection of children with special needs.

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