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Community Service on Implementing Learning Media as Support Technology for Neurodivergent Children Community in Surabaya

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ABSTRACT

Neurodivergent children may present with conditions such as autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), dyslexia, or other learning differences. These children often face challenges in communication, social interaction, and academic performance, necessitating tailored support within educational settings. This community service program partners with ELMO, a community for neurodivergent children. The program's goals are twofold: to develop assistive learning media in the form of eLearning modules, and to facilitate technology transfer to ensure its sustainability. The Asset Based Community Development (ABCD) technique guides the program's methodology. Information gathering utilizes questionnaires and focus group discussions to tailor the program to the specific needs of neurodivergent students. The results have demonstrated a positive impact, satisfying both our partner organization and the parents of neurodivergent children who can now track their children's progress more effectively. The positive impact on learning and parental tracking highlights the potential of such collaborations to improve educational equity for neurodivergent students. Future efforts can focus on expanding the modules and promoting wider adoption to reach more children.

Keywords: Assistive Learning; Community Service; Learning Media; Neurodivergent; Technology Diffusion

INTRODUCTION

Neurodiversity refers to the variation in neurological structure and function among individuals. Neurodivergent children may have conditions such as autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), dyslexia, or other learning differences. These children often experience challenges in communication, social interaction, and academic performance, requiring tailored support in educational settings. Neurodivergent children, including those with conditions such as autism, ADHD, and dyslexia, often face unique challenges in traditional educational settings. In the education system, neurodivergent children often require specialized support and accommodations to help them thrive academically and socially. Traditional teaching methods and classroom environments may not always cater to the unique learning styles and needs of neurodivergent children, leading to difficulties in engagement, comprehension, and participation (Gollasch et al., 2023).

In Indonesia, social stigma and negative stereotypes continue to hold back neurodivergent individuals. Discrimination based on neurodivergence creates significant barriers to their development and hinders their ability to live fulfilling lives. The traditional, one-size-fits-all approach to education often fails to address the unique learning styles of neurodivergent children. Fortunately, learning media technology offers a powerful solution. One of its key strengths lies in its ability to cater to diverse learning styles. For instance, children with ASD often excel in visual processing. Educational apps and games can transform abstract concepts into engaging, interactive experiences. Imagine learning about the solar system through a virtual reality simulation, or exploring the human body through 3D models. These tools not only capture and hold attention but also allow students to learn at their own pace and delve deeper into topics that pique their curiosity (Bhardwaj et al., 2023).

For children with ADHD, who may struggle with focus and staying on task, technology can provide much-needed structure and engagement. Gamified learning platforms incorporate points, badges, and leaderboards, turning learning into a rewarding and motivating experience. Educational software can also be programmed to offer immediate feedback and reinforcement, helping students stay on track and grasp concepts more effectively. Learning media technology can also be a powerful tool for children with Dyslexia, who may face challenges with reading and written communication (van Grunsven et al., 2024). Text-to-speech software can read aloud text from textbooks and assignments, alleviating the burden of decoding and allowing students to focus on comprehension. Additionally, assistive technologies like voice recognition software can empower students to express themselves through dictation rather than struggling with traditional writing methods.

Beyond addressing specific learning needs, technology can foster a more inclusive learning environment. By leveraging information and communication technologies, educators can create richer learning experiences for students, both within and beyond the classroom walls (Togas et al., 2021; Zuliana et al., 2023). The development of creative teaching methods is essential for optimizing student learning motivation. Fortunately, advancements in technology have yielded a range of tools that educators can utilize to supplement and enrich the learning process (Fajriyah et al., 2020). Social interaction can be a significant hurdle for children with ASD, but virtual reality environments can provide safe spaces for them to practice social skills in a controlled setting. Educational games and simulations can also be designed to encourage collaboration and teamwork, fostering valuable social interaction for all students (Karagianni & Drigas, 2023).

However, it is important to remember that technology is a tool, not a silver bullet (Gunawan et al., 2020). Effective implementation requires careful consideration of individual needs and learning styles. Educators play a crucial role in curating appropriate technology and integrating it seamlessly into the curriculum. Furthermore, technology should not replace traditional methods of teaching but rather act as a supplement to enhance and enrich the learning experience (Andiyan et al., 2021). Learning media encompasses various tools and resources used to enhance the learning experience. For neurodivergent children, personalized and interactive learning media can play a crucial role in improving engagement, comprehension, and retention. Visual aids, interactive software, and multisensory materials are examples of effective learning media for neurodivergent children (Bhardwaj et al., 2023).

The use of learning media must be tailored to what children need and in accordance with modern technology that is developing at this time. The use of learning media in the teaching and learning process can also arouse new desires and interests for students, arouse learning motivation, and even have a psychological influence on students. Media in a learning activity has a very large function, including as an intermediary for conveying or disseminating ideas, ideas, and opinions in learning so that what is conveyed by the teacher or teacher can reach the intended recipient (Laksana & Saputra, 2016).

These community service programs are actively involved in implementing learning media for neurodivergent children in Surabaya, the second-largest city in Indonesia. These initiatives aim to create inclusive learning environments, provide individualized support, and promote the holistic development of neurodivergent children. This community service is collaborating with ELMO, a non-governmental organization (NGO) in Surabaya Indonesia, that focuses on helping neurodivergent children to be able to get an inclusive education and transformative living conditions that the children can adapt to in the community.

LITERATURE REVIEW

Neurodivergent

The term "neurodivergent" is underpinned by the term "neurodiversity", which is the concept that there are different ways in which a person's brain processes information, functions, and behaves (Lukava et al., 2022). It recognizes that brain function and behavioral traits are merely indicators of how diverse the human population is. Neurodiversity is not a medical term but is often used to describe words other than "normal" and "abnormal" because there is no "normal" definition of how the human brain works. The term neurodiversity was first used by Judy Singer, an Australian sociologist, who revealed that each person's brain develops uniquely. Just as fingerprints will not be identical even in twins, the way the brain works is also not the same between one person and another (Gollasch et al., 2023).

Neurodiversity is divided into two types, namely neurotypical and neurodivergent. Neurotypical is a term that refers to someone who has brain functions, behaviors, and processing that are considered standard or typical (Currin et al., 2024). People with this brainwork typically reach all their developmental and behavioral milestones at the same time and age which is considered standard for most people.

Meanwhile, neurodivergent refers to individuals whose brains function in ways that differ from what is considered standard or typical (van Grunsven et al., 2024). The concept of neurodivergent gained traction in the 1990s. Many different mechanisms occur in the brains of neurodivergent people. These range from mild ways that most people would never notice to ways that cause a person to behave differently from the standards in

society. Examples of neurodivergent conditions include ASD, ADHD, down syndrome, and learning difficulties like dyscalculia (math), dysgraphia (writing), dyslexia (reading), and dyspraxia (coordination). Additionally, some mental health conditions, such as bipolar disorder and obsessive-compulsive disorder, can also fall under the neurodivergent umbrella (Gollasch et al., 2023).

Indonesian Law No. 6/2016 on Persons with Disabilities provides a comprehensive definition that goes beyond physical limitations (Suharto et al., 2016). The law recognizes that people with disabilities can experience limitations due to physical, intellectual, mental, and sensory factors. These limitations can create significant barriers to participation in society on an equal footing with non-disabled individuals.

Despite this legal framework, negative attitudes and stereotypes (often referred to as stigma) persist in Indonesia. Many people continue to label individuals with disabilities as "disabled people" (Sampurno et al., 2020). These negative views fuel ableism, which prioritizes non-disabled people and creates obstacles for those with disabilities (Friedman & Owen, 2017). The lack of disability-friendly public facilities and designated lanes for the blind are just a few examples of how ableism manifests in Indonesia (Nurfahmi, 2022). These shortcomings highlight the gap between legal rights and the lived experiences of people with disabilities.

The use of the term neurodiversity makes neurodivergent people not see themselves as disabled. This makes them much happier and more successful in life (Hidayati & Warmansyah, 2021). For example, people who have dyslexia have reading difficulty because their brains do not process written language like those without dyslexia. However, people with dyslexia usually have brains that are better at processing or imagining three-dimensional (3D) objects. This makes them faster at recognizing optical illusions and have a natural aptitude for occupations such as graphic and art design, engineering, and more.

People who are identified as neurodivergent usually have one or more conditions or disorders. Some common disorders of neurodivergent are (1) ASD, including Asperger's syndrome, (2) ADHD, (3) down syndrome, (4) dyscalculia (difficulty with math), (5) dysgraphia (difficulty with writing), (6) dyslexia (difficulty with reading), (7) dyspraxia (difficulty with coordination), (8) intellectual disability, (9) mental health conditions such as bipolar disorder, obsessive-compulsive disorder, and others, (10) sensory processing disorder, (11) social anxiety disorder, and (11) other health issues such as Tourette's syndrome, Williams syndrome, or Prader-Willi syndrome.

Some neurodivergent people face many challenges because the systems in place in society do not allow them to showcase their abilities. For example, when trying to apply for a job, they may have greater difficulty than neurotypicals. Even so, they can still get a job if the hiring process emphasizes their abilities, such as screening potential employees through skills tests. For instance, working as an accountant. Some neurodivergent individuals have exceptional attention to detail, which makes this job easier for them as they tend to enjoy processing data that others might find tedious.

They often also struggle in noisy environments or situations. These kinds of office conditions can be overwhelming for them. However, the help of soundproofing can give them peace of mind and reduce stress. They can even be the most productive person in their team because one of their strengths is the ability to focus on work intensely (Sampurno et al., 2020). Based on the examples above, the way the neurodivergent brain works can indeed make things difficult for a person in some situations. However,

with "accommodations" or facilities provided to meet their needs, this can certainly ease the struggles of neurodivergent people.

Meanwhile, neurodivergent children are individuals whose neurological development and functioning diverge from the typical or expected patterns. This term encompasses a wide range of conditions, including autism spectrum disorder, ADHD, dyslexia, dyspraxia, Tourette syndrome, and more. Neurodivergent children may experience challenges in areas such as communication, social interaction, sensory processing, executive functioning, and emotional regulation (Dingfelder & Mandell, 2011).

Understanding and supporting neurodivergent children is essential in creating inclusive and accommodating environments in educational settings. Each neurodivergent child has unique strengths, abilities, and needs that require personalized approaches to learning and support. By recognizing and embracing neurodiversity, educators, and caregivers can help neurodivergent children thrive and succeed in school and beyond (Yosselina et al., 2021).

Educating neurodivergent children involves implementing strategies and accommodations that cater to their specific needs (Ghanouni et al., 2020). This may include individualized education plans (IEPs), sensory-friendly classrooms, assistive technologies, and specialized teaching methods tailored to their learning styles. By providing a supportive and inclusive learning environment, neurodivergent children can develop confidence, self-esteem, and academic skills.

Inclusive education not only benefits neurodivergent children but also promotes empathy, understanding, and acceptance among their peers and educators (VanUitert et al., 2024). By educating others about neurodiversity and challenging stereotypes and stigmas, we can create a more inclusive and compassionate society where all children are valued and supported.

Support systems play a crucial role in the education of neurodivergent children, with parental involvement, collaboration with special education professionals, and access to resources and services being key components. By advocating for the rights and needs of neurodivergent children and raising awareness about neurodiversity, we can empower them to thrive and reach their full potential in educational settings and beyond (Gollasch et al., 2023; Ringland & Wolf, 2021).

Technology Diffusion

According to Hari et al. (2020), information technology may be viewed as an innovation diffusion process that incorporates two sides: the supplier side and the demand side. The demand side is concerned with the acceptance and application of innovation, whereas the supply side is involved in its conception, production, and dissemination. Adoption and diffusion serve as this side's other arbitrators. Diffusion is the process by which an innovation spreads among the participants in a social system over a predetermined length of time through specific routes (Kumala et al., 2021). Furthermore, diffusion can also be understood as a process of modifications to the composition and operation of the social system.

According to the second synonym mentioned above, technology diffusion is a process that spreads ideas or novel objects to alter society (German et al., 2022). It happens constantly from one location to another, from one era to the next, and from one field to another among social system members. The adoption of an innovation (in science, technology, or community development) by a constituent of a certain social system is the

primary goal of the diffusion of innovation (Lin et al., 2014). Individuals, unofficial clubs, and community organizations can all be a part of the social system.

Dingfelder and Mandell (2011) identify several key concepts and phases that characterize the diffusion of innovation within a society. The process begins with the diffusion process itself, which refers to the spread of an innovation over time through various communication channels. This spread can be influenced by deliberate efforts, known as the dissemination process, which involves planned and systematic initiatives to expand the reach of innovation. At the heart of diffusion lies the innovation itself, which can be a new idea, practice, or object perceived as novel by individuals or groups. Effective communication is crucial for diffusion, and the communication process encompasses the various avenues through which messages about the innovation are spread. This includes face-to-face interactions, mass media, and online communication channels. Another critical element is the social system, which refers to a cohesive unit of interconnected members working together towards shared goals. Within this system, the adoption process occurs, where the intended groups or individuals decide to embrace the innovation. Following adoption comes implementation, the active introduction of the innovation within a specific environment. The long-term success of an innovation hinges on several factors. Maintenance refers to the ongoing engagement with the innovation over time, and sustainability encompasses the ability of the innovation to endure after initial resources are depleted. Finally, institutionalization signifies the incorporation of innovation into the regular operations or overarching policies of an organization, ensuring its lasting impact.

Innovation diffusion technologies empower learning by bridging gaps in knowledge, fostering wider adoption of educational tools, and enhancing educational experiences. By understanding these dynamics, educators and learners can embrace and leverage these innovations more effectively (Hong et al., 2006).

Learning Media for Neurodivergent Children

Learning media for children with special needs cannot be generalized because the media used must suit the needs of the child. This is following the character of each type of neurodivergent. The following learning media follows several neurodivergent criteria (Bhardwaj et al., 2023).

Learning Media for Children with Learning Disabilities (Slow Learners)

Learning media suitable for children with intellectual disabilities include three-dimensional geometry, block gradation, cylinder, bracelet towers, ball puzzles, construction puzzles, animal puzzles, multi-sense, mechanical concentration, number boxes, letter pias, sentence pias, alphabet fibre boxes, balance board, abacus, and number board.

Learning Media for Children with Vision Impairment

Learning media for children with visual impairment can be divided into two according to the child's condition, namely for children who are totally blind and have low vision. For children with low vision, suitable learning media include microscopes, televisions, magnifying lenses, and vies scans.

For totally blind children, suitable learning media include radio, audio, embossed maps, braille rulers, blockers, anatomical models of the eye, scent bottles, geometric shapes, three-dimensional media, braille kits, talking dictionaries, braille typewriters, color sorting boxes, and tape recorders.

Learning Media for Children with Hearing Loss
Learning media models suitable for children with hearing loss include letter cards, sentence cards, photos, finger alphabet, half-body torso, miniature objects, wall maps, globes, cylinders, geometry models, construction puzzles, triangle towers, and bracelet towers.

Learning Media for Autistic Children
Learning media suitable for autistic children include letter cards, word cards, number cards, speech therapy cards, various types of puzzles, mechanical concentration, bracelet towers, triangle towers, and others.

One of the discussions about the media is speech therapy cards. It is known that autistic children experience communication and social interaction barriers. This speech therapy card aims to train children to speak for their communication development. The use of this media must be done gradually and consistently.

Learning Media for Children with Learning Difficulties
This category focuses on learning difficulties such as dyslexia, dysgraphia, and dyscalculia. For children with dyslexia, suitable learning media include alphabet cards, word cards, and sentence cards. These tools can help them develop their reading skills. Children with dysgraphia may benefit from using number blocks, alphabet cards, word cards, and sentence cards. These can assist them in improving their writing abilities. For children with dyscalculia, using number plates, number boxes, and number blocks can be helpful. These manipulative materials can support them in developing their math skills.

In addition, there is a new learning media for dyslexic children called smart pop-up books. This media uses a multisensory method that includes kinesthetic, auditory, and visual abilities that can help in learning dyslexic children. Thus, suitable learning media for children with special needs must be tailored to their needs so that the learning objectives are achieved.

The Role of Community Groups on Educational Development of Neurodivergent Children
Community groups play a vital role in the educational development of neurodivergent children by providing support, resources, advocacy, and a sense of belonging. Sanggar Sejahtera Makmur ELMO is one of the manifestations of the neurodivergent community in Surabaya, East Java. ELMO is a studio for neurodivergent children to help them prepare themselves in education, and a joint support system to further explore their potential. These groups bring together parents, educators, professionals, and individuals with lived experience to collaborate and create inclusive environments that cater to the diverse needs of neurodivergent children.

One of the key roles of community groups is to offer a platform for sharing knowledge, experiences, and best practices related to neurodiversity in education. By facilitating discussions, workshops, and training sessions, these groups help raise awareness and promote understanding of neurodivergent conditions among parents, educators, and the broader community. Community groups also serve as a source of emotional support and empowerment for families of neurodivergent children. By connecting parents with similar experiences, these groups provide a sense of community, solidarity, and reassurance, helping families navigate the challenges and triumphs of raising a neurodivergent child.

Moreover, community groups often advocate for policy changes, increased funding, and improved services to better meet the needs of neurodivergent children in educational settings. By lobbying for inclusive practices, accessibility, and accommodations, these groups work towards creating a more equitable and supportive educational system for all children, regardless of their neurodivergent status. In addition, community groups may organize social events, recreational activities, and peer support programs that allow neurodivergent children to connect with others, build social skills, and foster friendships in a safe and accepting environment. These opportunities for social interaction and engagement can enhance the overall well-being and development of neurodivergent children.

RESEARCH METHOD

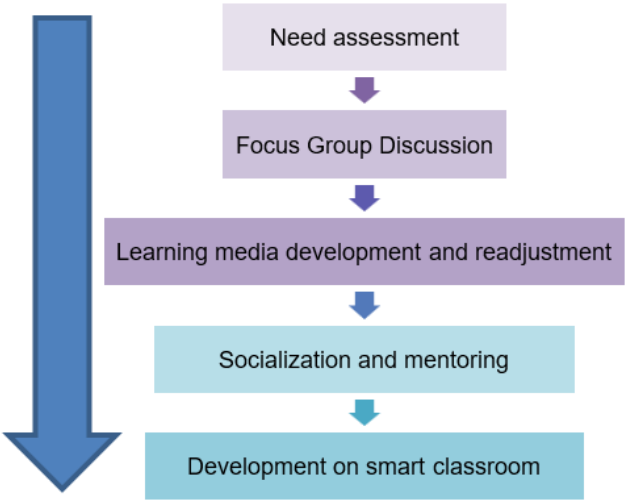
This community service activity as stated earlier partners with ELMO as a community group concerned with the educational development of neurodivergent children. Partners also have a dedication that not only creates space for socialization and self-development but also includes a mission to guide neurodivergent individuals toward independence. To realize this mission, ELMO provides guidance and mentoring programs for neurodivergent children and seeks to change the stigma of society, ELMO is dedicated to making a positive impact, creating meaningful relationships in the community, and contributing to a wider acceptance and understanding of neurodivergent children in Surabaya and surrounding communities.

Based on this, this community service process tries to help in the educational aspect where it tries to develop an interactive learning model that becomes a new platform for them to develop themselves. The utilization of this technology is expected to be able to support ELMO in helping more neurodivergent children at large, of course, with the support of mentors, teachers, and parents of these children.

The method approach used in this community service adopts the Asset Based Community Development (ABCD) technique. Asset-Based Community Development Ais a strengths-based approach to community development that focuses on identifying and mobilizing the existing assets, resources, and strengths within a community to drive positive change and sustainable development. Instead of focusing on deficits, needs, or problems, ABCD emphasizes the capabilities, talents, and potential of individuals and communities to create solutions and improve their own well-being. The number of respondents was all the neurodivergent students in the partners. 30 people with various levels of age scales, between children aged 6-14 years, adolescents 14-21 years, and adults over 21 years.

Data collection is carried out by observation, survey through questionnaires, and interviews. In the process of collecting data, several aspects were measured, namely the technology adaptability of neurodivergent students, parents and their tutors. Which includes ease of use, usage value, satisfaction and motivation to use. Then the first measured aspect is the adjustment of the needs of each child in ELMO in outline so that it matches their abilities and limitations. In this process, the team and the tutors from ELMO conducted brainstorming and focus group discussions to determine the adjustment of the existing learning model and the development of technology and learning models so that it could help partners and parents in measuring their children's education. The process of implementing this community service activity is presented in Figure 1.

Figure 1. Community Service Execution Diagram



The implementation of learning media for neurodivergent children begins with a comprehensive needs assessment to identify specific challenges and learning preferences. Based on this assessment, tailored learning materials and technologies are designed and developed to meet the unique needs of each child. Educators and volunteers receive training on how to effectively utilize these resources in educational settings.

The use of learning media has been shown to have a positive impact on neurodivergent children's learning outcomes. By providing personalized support and interactive learning experiences, these children can improve their academic performance, communication skills, and social interactions. Additionally, the use of learning media enhances engagement and participation in educational activities, leading to a more inclusive and supportive learning environment.

Before submitting the questionnaire to respondents, as well as the amount of study samples, the questionnaire must be tested for validity and reliability. The purpose is to know if the measuring instrument (a survey) is capable of measuring what it goals to measure. The Likert scale is used to measure latent variables in research, with movable intervals ranging from 1 to 5. In this situation, the sequence is as follows: Very agree is given a value of 5, strongly agree gets a value of 4, agreed gets a value of 3, disagree gets a value of 2, and strongly disagree gets a value of one. The Likert scale is appropriate to measure the respondents' attitudes and perception categories for the statements given in the questionnaire. The results of the questionnaire will be mapped into several needs that are planned by together with partners to be developed together.

RESULTS

This community service activity has two big goals as stated at the beginning, namely developing learning media support and providing partner assistance which is a forum for neurodivergent children to further develop themselves in terms of learning.

Based on the results of discussions and brainstorming with all respondents, it can be agreed together with partners on several points of learning media development as presented in Table 1 below.

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Table 1. Strategic Goals Agreed w ith Partners

No	Strategic goals	Types of learning	Description
1	Multisensory Learning	Hands-on Manipulatives	Incorporate hands-on manipulatives like counting beads or textured letters to support children with dyslexia or other learning disabilities by providing tactile feedback and reinforcing concepts through kin esthetic learning
2	Positive Behavio r Support	Token Systems and Verbal Praise	Use reinforcement strategies like token systems or verbal praise to encourage neurodivergent children to exhibit appropriate behaviors in the classroom
3	Flexible Instructional	Visual Schedules	Use visual aids like visual schedules with pictures or symbols to help children with autism spectrum disorder (ASD) navigate daily activities and transitions by providing a clear visual representation of what to expect throughout the day
4	Assistive Technology	Text-to-Speech Software	Utilize assistive technology tools such as text-to-speech software or speech-to-text apps to assist children with dyslexia or writing difficulties in expressing their thoughts and accessing written information more effectively
5	Individualized Education Plans (IEPs)	Customized Goals and Accommodations	Develop IEPs that outline specific goals, accommodations, and support services tailored to the unique needs of neurodivergent children
6	Structured and Predictable Environment	Consistent Routines	Establish a predictable classroom routine with clearly defined transitions and visual cues to provide a sense of stability and security for children with ADHD, helping them stay focused and engaged
7	Remote Learning Flexibility	Customizable Learning Space	Remote learning environments can provide a sense of familiarity and consistency, allowing students to customize their learning space and remain consistent each day
8	Neuroinclusive Design	Accessible and Engaging Content	Ensure that online learning materials are accessible and engaging for neurodivergent students. This can include using a variety of formats such as videos, and making sure that content is presented in a way that is easy to understand and follow

Based on the agreed results, eight main points need to be developed together with partners and the team. Furthermore, the team compiled some sampling of the content

developed so that later partners could develop and update the content independently. Some documentation of activities with partners can be seen in Figure 2 and 3 below.

Figure 2. Community Service Documentations

Figure 3. Community Service Documentations

Based on the documentation of the activities in Figure 2 and 3, it can be said that the activities for neurodivergent children cover a wide range of aspects up to gymnastics or health activities to help them control their thoughts and emotions. Due to the complexity of the approach, a comprehensive approach is needed, starting from the development of a more dynamic and attractive training module that can attract their interests and talents. In addition, focusing on the development of e-learning and dynamic learning media that help them stay focused is also one of the challenges. So, here the role of the mentors and parents is needed to support the success of these children's education.

The success of learning materials developed together with partners is measured based on the results of questionnaires and the technology and innovation diffusion approach. The technology and innovation diffusion approach measures the ability of partners to

adopt a technology or innovation in their social system. This measurement includes aspects as presented in Table 2.

Table 2. Indicator, B aseline, and R esult

No.	Indicator	Baseline	Result
1	Ease of Use	3	2.8
2	Usage value	3	4.3
3	Satisfactions	4	4.3
4	Motivation to use	4	4.3

Note: This result is based on average value from Likert scale

On point 1 ease of use, the service team felt that the eLearning and media that had been built were very easy to use, even by parents of neurodivergent children. So that parents can help monitor the progress of their children's studies. However, after the feedback was done, it only got an average value of 2.8, which shows that the use of the system still needs to be improved so that it can be used for all children despite having limitations. While at point 2 usage value has an average value of 4.3 so that it exceeds the baseline. From this, it can be seen that the usage value of the eLearning that was built was good and needed by the partners. so that the development of this learning media is awaited by the partners.

Furthermore, in point 3 satisfaction, both partners and parents of users feel quite satisfied with the e-learning that was built, because it makes it easier for them to transfer learning materials, collect assignments, track student participation, and do interactive assignments through this media. However, there needs to be some improvements including the need for simplification of settings, automatic settings, and some setting features that must be developed again so that it makes it easier for teachers or mentors at ELMO partners to create courses and materials.

Lastly, in point 4 motivation to use, since the partners needed this learning media and learning materials from the beginning, their initial motivation was very high, but on the other hand, the motivational position of the learners did not change much. Neurodivergent children prefer direct mentoring and not partly hybrid as currently developed (VanUitert et al., 2024). However, on the other hand, parents feel that this is quite new and consider it not a basic need. However, all of these indicators are indeed interrelated with each other and this is following what has been conveyed by Scherer et al. (2019), that the adaptability point of partners and users is more on a personal approach not only from a technical perspective.

DISCUSSION

Not everyone can adapt to the consequences of technology advancements equally, particularly those who are born with neurodivergent traits. This statement also supports the previous research done by van Grunsven et al. (2024). The fact that people still experience a fair amount of difficulty using information technology devices is evidence of this. There is a need for a new interactive learning system, however, it is more important to consider users' preparation than system usage because the student itself is one of the users other than mentors or parents that support them this statement is also mentioned by Ringland and Wolf (2021). Thus, a system that is easy for users to use qualifies as good. Therefore, users' active involvement positively impact system development in the future. The implication and adoption of each neurodivergent child is varying therefore the role of mentors, parents and also the supportive environment can greatly enhance their success (Currin et al., 2024).

Dealing with neurodivergent individuals requires understanding the differences in how they think, learn, and behave. Neurodivergent refers to individuals who have variations in their brain function, which can result in disorders such as ASD and ADHD . There are some ways to deal with neurodivergent individuals. First, socialize an understanding of inclusion and acceptance. Promote an inclusive and accepting environment where neurodivergent individuals feel safe and respected. This can involve educating others about their differences and providing support to help them overcome barriers. Second, using inclusive language and avoiding stereotypes can help reduce stigma and increase respect for neurodivergent individuals. For example, the use of terms such as "autistic" or "ADHD," is adjusted to "neurodivergent individuals" or "individuals with neurodivergent disorders." Third, respect their boundaries. Every neurodivergent individual has unique limits and needs. Respecting their limits and ensuring that they receive the support and resources they need can help them reach their full potential. Fourth, promoting awareness and education about neurodivergent. Promoting awareness and education about neurodivergent can help reduce stigma and increase acceptance of neurodivergent individuals. This can be done by organizing workshops and seminars, as well as using media and other resources to raise awareness.

Overall, dealing with neurodivergent individuals involves understanding and respecting their differences, as well as the creation of an inclusive and supportive environment that allows them to thrive and reach their full potential.

ELMO as a community group concerned with the educational development of neurodivergent children needs to have a consistent work program in educating the public about neurodivergence. This is motivated by the fact that there are not many communities that pay attention to neurodivergent children. One of the activities that can be done is education or seminars on how to deal with neurodivergent children with their respective characters. In addition, how to prepare neurodivergent people to enter the world of work. The following is a documentation of community education activities carried out by ELMO.

ELMO's education should be able to reach the wider community, especially outside Surabaya. This needs to be designed by the community founders. The education method can be done online in order to reach the wider community. It can be done fully online or hybrid.

CONCLUSION

This community service showed a great impact, especially for the development and implementation of learning media for the partners and neurodivergent children. Although the system is needed for interactive learning, it is more important to consider the user's preparations and readiness to adapt slowly rather than focusing on the system and materials used. The role of mentors and any physical and direct education is more needed than converting education through hybrid learning. L astly, the system itself is a supplemental learning alternative, that helps to keep track of each student's activity and cannot replace conventional learning activities.

The results of this community service activity help ELMO partners in developing their educational media so that they can reach a wider community. As for stakeholders who are with ELMO such as parents and tutors, it is very helpful for them to measure the learning development of their neurodivergent children. As an independently established community, ELMO cannot optimally finance all activities carried out. Therefore, cooperation with various parties who can become donors for ELMO is needed. ELMO founders need to raise funds from partners and donors who have concerns for

neurodivergent people. Thus, the goal of this community in providing assistance and training for neurodivergents can be achieved so that neurodivergents can be accepted in the wider community.

LIMITATION

This community service is carried out together with ELMO partners as a community forum for neurodivergent children in Surabaya, East Java. The conditions of neurodivergent children vary greatly at each age and the environmental conditions that support them, so the results of this activity will vary if implemented on similar subjects but in different locations and times.

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DECLARATION OF CONFLICTING INTERESTS

The author states that there is no conflict of interest

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