The Effect of "KIS" (Social Interaction Communication) Application on the Augmentative Alternative Communication to Improve Communication for Down Syndrome Students

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Abstract: This research develops AAC for students with Down syndrome using the "KIS" application media. The purpose of making this media is to help students with Down syndrome who have difficulty communicating. The application is designed using symbols to learn to understand and express themselves using predetermined symbols. This study used an experimental, single-subject research (SSR) approach with an A-B-A design. the subject in this study was one of the Down syndrome students with communication barriers. The target behavior of the research is communication skills. Data collection techniques are obtained by observation, and action tests. The data analysis used is a descriptive system with a graphical presentation. The results showed that the "KIS" application can help improve the subject's communication skills. Based on the increase in target behavior, namely the increase in the subject's communication skills in the initial condition, the results obtained were 44.4% increased to 72.2%.

Keywords: Alternative Augmentative Communication; Down Syndrome; KIS App.

INTRODUCTION

Language is a means used by individuals and certain community groups to express ideas, means of expressing emotions, exchange information, convey messages to others and cooperate (Soetjiningsih, 2018). Language itself consists of the ability to understand, express, and interpret symbols, and passive and active language skills in a structured manner. Without language, humans would not be able to communicate or convey messages. Communication (the exchange of information, ideas, and feelings between people) is a vital part of human life. Humans must be able to communicate effectively in social life to have good social relationships. People communicate in many ways, including verbal and non-verbal expressions. Body language such as gestures, posture, eye contact, facial expressions, and head and body movements are non-verbal forms that can be used to convey information (McCormick et al., 1997, Kaiser et al., 2001).

Communication skills are one of the most important developmental areas for students. Communication problems are one of the early indicators of student development that can affect academic and social outcomes. Students with Down Syndrome are the same as other students who should be able to communicate from an early age. However, they have several barriers such as physical and cognitive (Kumin, 2003; Swamilaksita, 2022) which make the spoken language difficult to use in their communication (Marder & Cholmáin, 2006). Down syndrome (DS) is a group of genetic disorders that occur due to a completely tagged chromosome with an extra chromosome (Swamilaksita, 2022; Syofiyawati et al., 2017). Students with Down Syndrome have difficulties in using language and speech in their communication. Students with Down Syndrome have certain difficulties in producing sounds and understanding linguistic rules as a result of the limitations that occur in their language development. Some studies show that an important goal in early communication interventions in toddlers with Down Syndrome is the use of signs and sign language in

developing communication skills (Marder & Cholmáin, 2006; Wright et al., 2013). With the expressive language problems experienced by Down syndrome students, it is necessary to have appropriate treatment according to the needs and characteristics of students. This is done so that students' abilities can be honed for the better because in interacting and communicating with their environment the existence of language is very important. The existence of appropriate treatment is expected to be able to use their language skills well in communication, one of which can be done to improve the expressive language skills of students with Down syndrome by using the Alternative and Augmentative Communication (AAC) system. AAC is a communication system used to complement or replace speech or writing for those who have impairments in the production or understanding of spoken or written language. According to McNaughton et al. (2008), AAC is a collection of techniques and strategies intended to support individuals with complex communication needs in a broad range of communication activities in a variety of social environments, each with its unique challenges and demands. Blackstone (2003, p. 91), argues that AAC can be effective for students with Down syndrome because of their unique communication needs and learning styles. This AAC offers a medium that can be used to improve the comprehension and expressive language of students who experience barriers in their language development including students with Down syndrome.

According to Arsyad (2016), learning media is a component of learning resources or physical vehicles that contain instructional material in the student environment that can stimulate students to learn. The need to utilize learning media is as a tool that can be used to assist the learning process, one of which can help improve communication skills, the better the media used, the better the results of using the media. But it needs to be underlined, that "good" here is not limited in terms of the appearance of the media that has been successfully made, but also in terms of other aspects, such as quality, benefits, suitability for the learning context, and so on. If all aspects of the assessment are already owned then it is appropriate that the media can be said to be good.

Through KIS application media can help students with Down syndrome in improving communication skills, especially in expressive communication, students can express their desires in daily activities, Instructions are presented in the form of pictures, writings, and symbols to communicate thoughts or ideas in communication and help facilitate in carrying out daily activities.

Along with the research of Wardani (2023) Through Audio Visual Learning Media in Children Aged 5-6 Years, it is proven that there is an increase in the ability to speak of early childhood, namely an increase in the percentage of completeness in pre-action by 26.66%, cycle I by 53.33%, and cycle II by 80%.

Research conducted by Indriastuti (2016) The results of research on the development and utilization of the design of the audio media model Aku Kenal Suara Itu (AKSI) show significant effectiveness in the form of the suitability of the media for use in listening activities in early childhood learners. From the information that has been collected, in addition to the effectiveness of the AKSI audio media model, educators as respondents also provide conclusions about the application of the AKSI audio media model for early childhood learners, which include: (1) the suitability of AKSI programs can be used to increase understanding of learning through stories; (2) AKSI programs can be used as a concentration enhancer in early childhood; and (3) accelerate children's linguistic understanding of objects, sounds, and sounds.

Research conducted by Efendi et al (2017) The application of audio-visual-based learning media affects improving the learning outcomes of elementary school students. It

can be seen from the researchers who researched the use of audio-visual-based learning media on student learning outcomes in elementary schools as indicated by the achievement of the highest difference of 23.2 and the lowest difference of 1.76.

Based on the description of the background above, this study describes the results of the "Effect of the "KIS" Application (Social Interaction Communication) as Augmentative Alternative Communication to Improve Communication for Down Syndrome Students".

METHOD

The research approach used is quantitative research with the type of experimental research that aims to obtain the necessary data by looking at the results or consequences of a treatment or treatment in the application of using the "KIS" (Social Interaction Communication) application as an augmentative alternative communication to improve Down Syndrome Student Communication. The experimental approach used in this research is the Single Subject Research (SSR) approach using the A-B-A design.

Tawney and Gast in Sunanto (2006: 1) explain that single-subject research is experimental research conducted to determine how much influence the treatment or treatment given to subjects repeatedly within a certain time. Single-subject research or SSR refers to a research strategy developed to document changes in the behavior of individual subjects.

In this case, the researcher will observe the effectiveness of the effect of using the "KIS" (Social Interaction Communication) application as an augmentative alternative communication to improve Down Syndrome Student Communication. This study will observe the conditions before treatment (baseline-1 condition), then with treatment (intervention condition), and as a result of treatment (baseline-2 condition). The subject in this study was a Down syndrome student with expressive communication barriers. The target behavior of this study is to improve expressive communication skills. Data collection techniques are obtained by observation, and action tests. The instruments used in this study consisted of two types, namely observation sheets or observations and action tests regarding communication skills. The validity test in this study used logical validity. The data analysis used in this research is a quantitative descriptive analysis technique, which is about data on the improvement of communication skills.

FINDING AND DISCUSSION
Finding

The researcher will describe the results of the research that the researcher has carried out which will provide answers to the problems studied. This research was conducted at the subject's house in Pandeglang Banten with a single-subject experimental research method or what is often called Single Subject Research (SSR). The subject of this research is one of the 1st grade Down syndrome students, with expressive communication barriers. The research design used is A-B-A. the data that has been collected is analyzed using descriptive statistics and displayed in graphs. This study aims to improve students' communication skills by using the AAC system using the "KIS" (Social Interaction Communication) application media. The target behavior in this research is that it can improve students' expression and communication skills.

Research Results on Baseline-1 (A1) The implementation of baseline-1 aims to obtain data on the initial expressive communication abilities of students. The results of the implementation of baseline-1 are to be used as a benchmark in conducting intervention

(treatment) and also as comparison data both with the results of data in intervention and baseline-2. The implementation of baseline-1 is carried out for 4 sessions. In each session, students are given 6 action test items with the time given to do the entire test is 30 minutes. Based on the results of measuring the behavior that is used as the target behavior, namely expressive communication skills, it can be explained that at the baseline-1 stage, the data obtained in the first session to the fourth session is 33.33%.
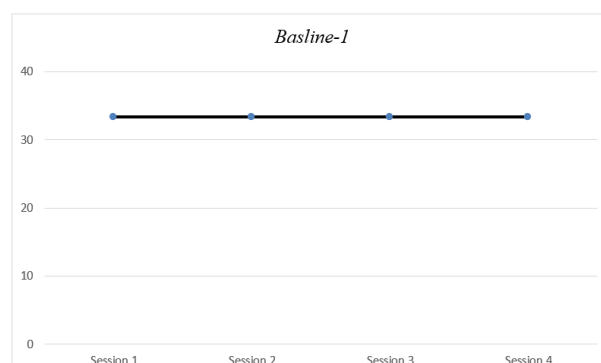
Graph 1. Communication Ability Baseline-1 (A1), Intervention (B), Baseline-2 (A2)

### *Research Results in the Intervention Phase (B)*

Research Results in the Intervention Phase (B) Intervention (Giving Treatment) The intervention in this study was carried out for 8 meetings. Each meeting on the implementation of the intervention is for 30 minutes. The intervention provided is learning activities to communicate using the KIS application media. Implementation of the intervention in this study researchers provide intervention while making observations. Intervention delivery is carried out in the room. The steps for implementing the intervention, namely the preparation stage, begin with introducing the tools used in learning communication activities using the KIS application. Furthermore, the researcher explains how to use the KIS application media that will be used by the subject. After that students carry out activities to open the application and click on the image according to what the subject wants or needs which consists of 3 contents, so that parents or families as recipients of information can understand and immediately provide reactions to the wishes or needs of the CCN students. Of course, the creation of the KAA system in the form of this application is tailored to the student's condition by considering his potential and hindrances from the aspects of student development. The results of the above intervention are as follows: In intervention session 1 the subject obtained an amount of 88.8%. In intervention session 2 the subject obtained the same number of scores as session 1, namely 88.8%. Intervention session 3 obtained a score of 94.4%. Intervention session 4 obtained a score in session 4 the same as session 3, namely obtaining a score of 94.4%. The acquisition of scores in session 5 obtained a total score of 100%. Intervention session 6 the acquisition of scores in session 6 obtained the number of scores achieved, namely 100%. Session 7 intervention obtained an amount of 100%. Intervention session 8 session 8 obtained a total score of 100%.
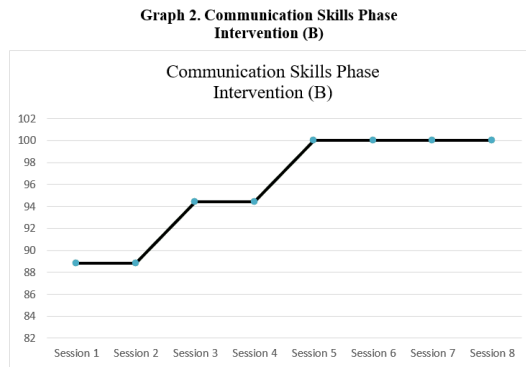
Graph 2. Communication Skills Phase Intervention (B)

Research Results at Basline-2 (A2)

The results of baseline-2 (A2) are as follows: Baseline-2 (A2) session 1 subject score obtained is 66.6%. Baseline-2 (A2) session 2 the subject score obtained is 66.6%. Baseline-2 (A2) session 3 the score achieved was 66.6% Baseline-2 (A2) session 4 the score achieved was 72.2%.
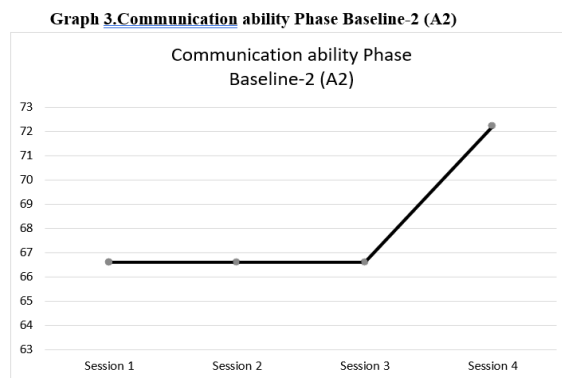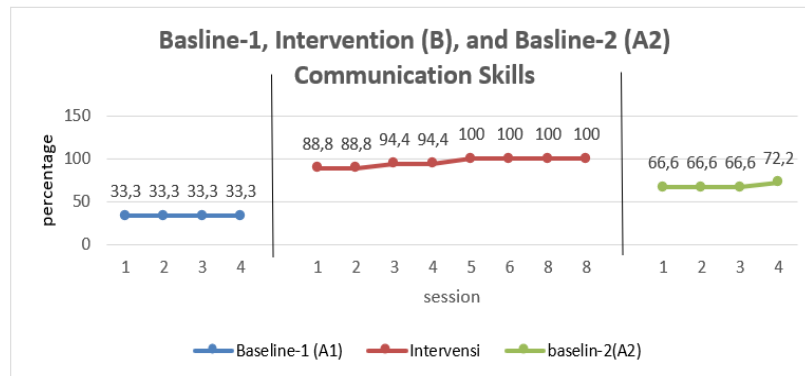

Graph 3. Communication ability Phase Baseline-2 (A2)

Discussion

Based on the results of research that has been carried out on the ability of expressive communication, the average or mean level of research subjects in the baseline-1 (A1) phase is 33.3% because this phase is a natural condition without the provision of intervention or treatment using the KIS application media. In the intervention phase (B) the average percentage or mean level is 95.8% because in this phase there is an intervention using the KIS application media. In the baseline-2 phase (A2) the average percentage of the mean level obtained was 68% because in this phase the natural results of the subject after treatment or intervention. In addition, changes in data levels in the analysis between conditions in the intervention phase to the baseline-1 (A1) phase increased by 55.5 due to the provision of treatment or intervention. In the baseline-2 (A2) to intervention (B) phase, there was an increase of (-33.4) points. Although in the baseline-2 (A2) phase, the data obtained was lower than the intervention phase, the data obtained was higher than the baseline-1 phase data. Data overlap in the intervention phase (B) to baseline-1 (A1) and baseline-2 phase (A2) to intervention (B) has a percentage overlap of 0%. It can be concluded that the development
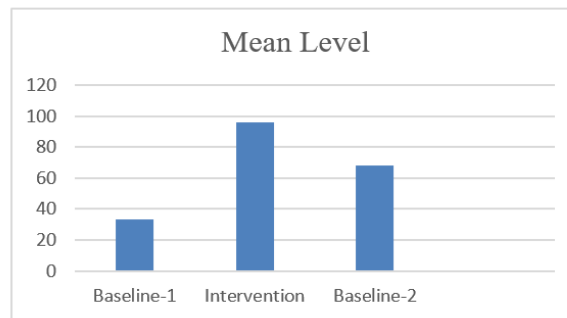
of the KAA system using KIS application media can improve students' communication skills, It can be concluded that the development of the KAA system using KIS application media can improve students' communication skills. This agrees according to expert opinion, Blackstone (2003), argues that AAC can be effective for students with Down syndrome because of their unique communication needs and learning styles. this is evident in the increase in the percentage of the subject's communication skills".

Graph 4. Baseline-1 (A1), Intervention (B), Baseline-2 (A2) Communication Ability Results

Based on the results of the data obtained from each phase, the mean level in each phase is as depicted in the graph below:

Graph 5. Mean Level Baseline-1, Intervention, Baseline2 (A2)

CONCLUSION

Based on the results of the study, it can be concluded that the development of the KAA system using KIS application media can improve students' expressive communication skills. The intended target behavior is to improve the ability of students' communication skills. This is addressed by increasing the mean level or average percentage from the baseline-1 (A1) phase of 33.3%, intervention (B) 95.8%, and in the baseline-2 (A2) phase, the average percentage of the mean level obtained is 68%. In addition, changes in data levels in the analysis between conditions in the intervention phase to the baseline-1 (A1) phase increased

by 55.5 due to the provision of treatment or intervention. In the baseline-2 (A2) to intervention (B) phase, there was an increase of (-33.4) points. Although in the baseline-2 (A2) phase, the data obtained was lower than the intervention phase, the data obtained was higher than the baseline-1 phase data. Data overlap in the intervention phase (B) to baseline-1 (A1) and baseline-2 phase (A2) to intervention (B) has a percentage overlap of 0%.

Increase in target behavior, namely the improvement of the subject's communication skills in the initial condition, the results obtained were 44.4% increased to 72.2%.

The effectiveness of the AKSI audio media model, educators as respondents also provide conclusions about the application of the AKSI audio media model for early childhood learners, which include: (1) the suitability of AKSI programs can be used to increase understanding of learning through stories; (2) AKSI programs can be used as a concentration enhancer in early childhood; and (3) accelerate children's linguistic understanding of objects, sounds, and sounds.

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