

Implementation of Perception Communication Construct of Sound and Rhythm in Children with Hearing Impairment: Case Study in Pre-School and Kindergarten

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Abstract: Communication is very important in the life. The children that were born with hearing impairment get less access to speech acoustic information for detecting and discriminating among speech sounds. Therefore, some program is needed to develop the remaining hearing. Perception Communication Construct of Sound and Rhythm (Bina Komunikasi Persepsi Bunyi dan Irama/BKPBI) is a program that aims to develop the potential for hearing to communicate. The aim of this study was to know the implementation of BKPBI at TK-LB Santi Rama in Jakarta. This study used qualitative method by collecting observation data from classroom and BKPBI program, and interviewing the principal and teachers in the school. The results showed that the school implemented BKPBI program in the big class, private class, and in BKPBI room. The school implemented three step program such as assessment, implementation and evaluation. Besides, There is individual and classical program for hearing and articulation program.

Keywords: Communication, Hearing Impairment, Perception Communication Construct of Sound and Rhythm

Hearing loss in deaf (hearing impairment) children causes developmental delays, because it is important to communicate with others. Communicating with others requires language with clear articulation or speech, so that, the message to be conveyed can be interpreted properly and has meaning. So, there is no misinterpretation of the meaning communicated.

Hearing loss is generally divided into two main categories: hearing difficulties and total deafness (Azulay & Alina, 2015), while the cause of this disorder corresponds to the following types: conductive hearing loss, neuralsensory and mixed hearing loss. "The ability to communicate effectively is very important for the development of healthy children, effective communication supports cognitive development and social development, including the ability to develop positive relationships with others ..." (Decker *et al.*, 2012).

Hearing loss can affect language acquisition, communication quality, achievement of learning potential, development of social skills and abilities, emotional development and self-confidence, developing identity and developing other social, cognitive and emotional skills (Azulay & Alina, 2015). The loss of acoustic components that stimulates the development of adoption and speech, deaf children learn to speak in special ways that have an effect on the quality and quantity of their vocabulary (Brokane & Zaiceva, 2011).

Children with hearing loss should be given some kind of education. To support the progress of their education and ensure that what is needed is a

coordinator for special education, a teacher for deaf children and a program to train to hear. There must be a kind of technology to facilitate learning for deaf children (Simkiss, 2013).

There are teams that promote children's education with hearing impairments in local education. This team support the children, families and school staff from diagnostic points to pre-school years, formal education and until children complete their education and transition to handling as children develop. This team can include specialist teachers, educational, audiologists, and communication skills specialists by teaching assistants and technical support workers (Simkiss, 2013).

The direct impact of hearing loss is a barrier to verbal communication, either expressively (speaking) or receptive (understanding the words of others), making it difficult to communicate with the environment for the deaf to use verbal language as a communication tool. Obstacles in communication, also produce obstacles in the process of education and learning of deaf children. However, deaf children have the potential to learn to speak and speak. Therefore, deaf children need special services to develop speech and speech, so as to minimize the impact of hearing loss (Hernawati, 2007).

It is needed a qualified experience in teaching deaf children. For some children with hearing loss, generally with the same needs, special schools have smaller classes with more opportunities to focus on the individual needs of children with hearing loss. The

teaching curriculum can approach the teaching process that is appropriate to the child and his potential, there are also colleagues with the same needs (Simkiss, 2013).

BKPBI is training of both intentional or unintentional voice, so that, hearing remnants and vibrational feelings from deaf children can be utilized as well as possible to integrate with the surrounding world that contains full of sound (Aprilia, 2016). Building Perceptions of Sounds and rhythm Communication as a program that must be given to students from TKLB to SMALB, based on the views and opinions of special education experts that: - The implementation of educational services for students who have abnormalities does not have to emphasize the obstacles but must take into account the competencies that may still be developed. Competencies that can still be developed and used by Deaf students are competence to appreciate sound. Competency development or optimization of hearing function of deaf students can be done using hearing aids (ABM) or without hearing aids (Bronsky & Wizchick, 2001).

The development of communication skills is an effort made to train the communication skills of deaf students needed in communicating with others in the environment in which they are located. Program specific objectives are made to optimize auditory communication skills and verbal communication remaining in deaf children (Bronsky & Wizchick, 2001). This program can develop the responsiveness of children with hearing loss through optimization of hearing function, and the development of their vibration abilities. With receptive abilities, deaf children can see, associate, and analyze information in the form of language symbols. Starting from the receptive ability, deaf children can express all their perceptions and symbolic experiences of verbal communication (speaking, interesting, writing, total communication) through coaching and speech formation, so that they can communicate in social situations fairly (Aprilia, 2016).

Hearing Improvement Stage, Detection, To find out whether a voice is done in a game where children learn to give answers to the sounds they hear. Simple vowel frequencies such as (oo), which (ah) and (bremmm), are more easily detected by children, because they often hear consonants, then proceed with consonant sounds (mmm), (bbb) and whispers (baa), it will add to the introduction of hearing.

Discrimination, Distinguish the sound in terms of quality, intensity, duration and tone. When children say mistakenly, then they must learn to distinguish sounds first.

Identification, When children begin to use meaningful words, parents can add a child's hearing method in their vocabulary through games / daily activities.

Comprehensive, Can answer questions, tell stories, and give the opposite word. Communication can make a child with hearing difficulties as soon as possible to realize and be able to communicate with the environment through his mouth, gestures, or with the help of pictures. The child can recognize the existence of various language functions and can use them in appropriate situations. Articulation training is another program that aims to stimulate students to communicate with others. Children enrolled in AVT have been reported to have achieved age-appropriate verbal communication results. Obtaining sign language and spoken / written language will help improve the learning process for deaf children in pre-school education institutions (Zaitseva & Brokane, 2012).

According to the type, heart-to-heart conversations (Perdati) are distinguished between the obtained points and the questions that continue the information to stimulate student articulation.

Pure Perdati, It is called pure speech because the conversation comes from expressions of feelings that come from the child's subconscious, and are not influenced by others. It is called free speech because the conversation is still very free. In general, pure perfection occurs in children with hearing loss who have not talked about words, including deaf children who have mastered one or two words until the use of incomplete sentences.

Sustainable Care, Conversations begin with information, sending news, notification of a child or teacher about something that is not shared with knowledge.

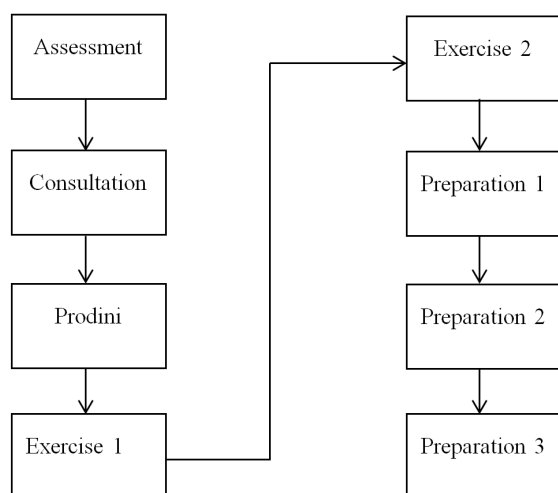
METHOD

According to Creswell (2010), qualitative research is a method to explore and understand the meaning by some individuals or groups of people who are deemed to be derived from social or humanitarian problems. This qualitative research process involves important efforts, such as asking procedural questions, collecting specific data from participants. Researchers used descriptive case study strategies in which researchers carefully investigated programs, events or processes. The researcher uses two methods, namely observation and interview to obtain the overall data.

Observation, Researchers made observations, observing the learning of all grade levels, the implementation of BKPBI in TK-LB Santi Rama in Jakarta. Researchers observe all classes and see the learning process, from student assessment, implementation and evaluation.

Interview, Interviews were conducted directly with the principal and teachers by asking open questions, so that, the researchers obtained comprehensive data on the BKPBI program at the school.

Figure 1. Flow of acceptance of prospective students



The researchers conducted interviews about the process of assessment conducted by the school before the children were accepted at the school, and the curriculum that the school had done.

Documentation, Documentation studies that researchers have conducted documented curriculum design, learning design, report cards and student assignments.

Sample, The sample of this study was TK-LB Santi Rama in Jakarta who implemented the BKPBI program. Santi Rama has 73 students who are divided into eight classes. All students use hearing aids or cochlear implants.

Research Instruments, The instrument used in this study is an observation guideline that aims to determine the implementation of BKPBI programs in schools and interview guides given to principals and teachers to find out the curriculum and BKPBI programs in schools.

Data Analysis, Technical analysis of qualitative data is done by collecting, sorting and classifying field record results which are then classified according to the BKPBI program. The researcher carried out three steps of analysis, namely reduction, data verification, and conclusion.

FINDINGS AND DISCUSSION

Findings

School profile, The method applied by Santi Rama TKLB uses the Reflective Material Method, in which the learning experience is given in oral language such as the way a mother teaches her child's language. The lessons given by the teacher at TKLB use original objects or creatures, and spontaneously, the teacher will develop concepts.

TK-LB Santi Rama implemented a rating system

before accepting prospective students. Figure 1 is the acceptance flow chart and grade level at school.

There are three steps that schools apply

Planning, To identify the hearing impediments in children is used. After deafness is identified, appropriate service delivery plans are needed to support them and their families (Lichtig *et al.*, 2011). Santi Rama School has planned for the curriculum, ie assessment, instructional design and equipment or media preparation. Language assessment procedures, in general, offer information about phonology, morphosyntax, and semantics of children's linguistic performance, identifying delays or disturbances. The protocol used in this study is 'free modality', that child communication in any modality (oral, signed, or gesture) can be coded. It consists of the following sections: (1) Pragmatic Profile of the Child; (2) Free Capital Measurement of Children's Communication; (3) Mean Length of the Longest Speech; (4) Style and Benefits Communication between parent and child.

When there were children who wanted to go to Santi Rama's TKLB, in the beginning there would be an assessment to find out the child's hearing and intelligence. Tests carried out include: (a) Hearing tests (using an audiogram or puppets, bells, bells, musical instruments such as tambourines that have been adjusted according to the deactivate level in calibration). A visible response is a child who will search for a sound source; (b) Intelligence; (c) Attitude; (d) Motoric; (e) And others

Assessment is usually 4 to 5 times to determine the child's condition. If not in accordance with the criteria that have been set, that is having shortcomings in the case of intelligence, it will be advisable to choose another school. protocol for assessing children's communication skills that are reliable, regardless of whether children use spoken language (SpL) or language marked (SL) (Lichtig *et al.*, 2011). After the assessment, there is a consulting room to consult. This room is used at the stage where the child has passed the assessment. There are psychologists who will explain how the results are to parents, and parents can also discuss with psychologists.

Pro dini Room, The Early Childhood and Parent Intervention Program or Pro dini is a stage where 2-3 children will be collected in a room, where the teacher will intervene in the child, parents will see the intervention from the outside which is isolated by glass, so parents can do it in home.

Differences in child's skill levels may have more impact on some strategies and less on others. an interventionist ability to change the therapeutic approach based on the child's needs (Martin-Prudent *et al.*, 2016). One very important thing in hearing impaired students is to find out if they use different learning strategies to hear students' students (Antonanzas & Lorente, 2017).

Implementation, There are three classes at this school. Students will be placed in the appropriate class. There are many ways to teach in each class. Special schools may have smaller classes with more opportunities to focus on the individual needs of deaf children. Curriculum teaching can be very well suited to the style and strength of children's learning and there are peer groups with similar needs (Simkiss, 2013). Differences in child's skill levels may have more impact on some strategies and less on others. an interventionist ability to change the therapeutic approach based on the child's needs (Martin-Prudent *et al.*, 2016). there are teams that promote the education of children with hearing impairment in local education authorities. This support is provided to children, their families and school staff from the point of diagnosis during pre-school years, to formal education and until the child completes education and transitions to adult services. This team can include specialist teachers, educational audiologists and communication skills advisors supported by specialist teaching assistants and technical support workers. Teachers for deaf children are experienced teachers with further qualifications in teaching deaf children. (Simkiss, 2013).

Exercise Room 1, Children accepted in this class are 1.5-2.5 years old. There is no curriculum. Here the child will be more listening and stimulation to talk by playing. BPBI is done classically and individually without the child being aware, such as ringing the bell or beating the drum in the classroom. Direct instruction may be the right way to complete learning opportunities for children with hearing loss, especially if the children are unlikely to learn words through incidental exposure (Lund & Douglas, 2016).

Exercise Room 2, After training class 1, you will go to grade 2 training, where the criteria age is 2.5 years. The teacher is instructed to place the image or object of each word that is not known in the list of exposure exposure. To enter the preparation class there are two types of classes at each level:

Class A understand the material is deeper and more complex, student attitudes are easy to manage. Class B is lack of simpler attitude and intelligence and depth of material

Special Preparation Class, Classes are provided for newly accepted students but their age is not the criteria in training classes 1 and 2, so that, the material is taught directly to understanding concepts.

Class 1 Preparation, The understanding taught in grade 1 is still short, the teacher prioritizes children's hearing optimization learning, and articulation exercises are carried out in the classroom and individually.

Class 2 Preparation, Using an original object or creature, after that develops into a concept that will be explored by the teacher, after that the children will be stimulated to mention or explain what is being discussed with the help of the teacher. In addition, if

the teacher explains an object or creature, the child will be asked to show which object is intended, if it is around it.

Class 3 Preparation, Understanding the conversation of this conversation is deeper and longer. Children read deposite, there are questions about the content of the conversation that has been read together. Identification of original objects or creatures, after that develop the concept of things that have become the theme of the day. Pronouns are more often used in Buddhist tones. After that there is reflection done at the end of the day. Language cards with concept vocabulary and illustrations and definitions can accompany verbal presentations and are used in preparation for new fields of curriculum. Children can save personal dictionaries from their language cards. Teachers can use hand signals or different signaling systems to warn children with hearing loss to rest in their daily routines and allow their children or interpreters to review questions, answers and concepts (Simkiss, 2013).

Discussion

Implementation of BPBI Stage at TKLB

The implementation of the BPBI is not only done in the BPBI room, when the children are in the classroom too, but the teacher will also teach BPBI to familiarize children to practice listening. In addition, so that, children do not feel they are learning, learning is done while playing, especially in training classes.

Detection, The introduction of the sound source is done at the beginning of the training class, using a tape recorder in the classroom, and the child touches the salon to feel the vibration. Meanwhile, when in the BPBI class, there is a vibration phase, so children can feel the vibrations produced with other body parts (legs).

Background noise is asked when children have outdoor activities (in the playground), the teacher will ask spontaneously whether the child hears sounds (birds, planes). In addition, the teacher will make a sound intentionally, such as by calling a child's name, or making a sound from a musical instrument in the class, usually using drums, drums, drums, gongs, or small sirens that have different frequencies. from different directions (left, right, back) to make the child aware of the sound. In the practice class, because the child has not been able to speak, what is seen is the response of the child who is looking for a sound source.

Discrimination, The discrimination stage should be able to be done in the two preparatory classes. Here the teacher will make a sound from the organ of a musical instrument or drum. The things that children should control are:

Long and short sounds, the teacher will press one of the keys to the organ in a long and short voice.

High-low noise, the instrument used is also an organ, the teacher will press the button with a low and high tone, so students can distinguish it.

Great sounds, musical instruments that are usually used to distinguish loud and soft sounds are gongs, drums and drums. The master will hit the instrument hard or soft. When before the rhythm training begins, the teacher sounds the drum loudly and quickly, then the children are asked to line up with jogging according to the movement that has been requested.

Fast voice, in distinguishing sounds quickly and slowly, the teacher uses a drum. Student movement goes small when the teacher hits the drum quickly. And when the teacher hit slowly, the child walked slowly.

Identification, the teacher will describe objects or creatures with images and also in real terms. The teacher will mention an object or creature, then the child will be asked to show pictures or other original objects in the class. This is done in preparation classes two and three. In addition, the teacher will ask the child to read the words or phrases spoken by the teacher before.

At first the position of the child is in front of the teacher, then the teacher will mention one word, then the children follow him. After that, the teacher will block his mouth, so that, the child can identify the word the teacher mentioned without seeing the teacher's lips. This is done in preparation for one class. In preparation class two, the teacher's position is behind the student, then the teacher will say a few words, and the child repeats the word, pointing to the word on the blackboard that matches the teacher's words, or whether it is long or short.

The rhythmic sound is done by playing music in a hearing training class, because there is an art performance, the children display dance movements while practicing. Movement is carried out in accordance with slow-slow music.

Comprehensive, During lessons in the classroom the teacher will ask questions related to the material being discussed. If the child is able to answer the question, then the child can hear the voice produced by the teacher and understand the questions asked by the teacher. This understanding is controlled in preparation class 3.

They have done articulation training programs in an individual or classical way in class. All participants benefit from sound perception skills and vocabulary development and speaking. Therapy directed at listening alone is promising and may have a positive impact on the development of speech and this aimless vocabulary must be included in the therapy program. Speech education and perceptual assessment have gained speech and vocabulary children with hearing impairment in pre-school (Lew *et al.*, 2014). Students at the school must use hearing aids or cochlear implants because it will help them to hear and try to

communicate with others. Because hearing aids are sensitive to all sounds, loud or irritating sounds must be avoided. If possible, the class should be carpeted and away from noisy areas, such as dining room or gym. But, because they have limited buildings, the schools find out other ways, namely each class only teaches less than 15 students. Conversation from heart to heart is done in the learning between teacher and student, it helps the development in accordance with the child's interest, so that, the child will be easy to express and teacher.

CONCLUSIONS

The steps taken before communication training are to train to hear. Hearing is developed in the PKPBI program, where children will go through four stages: detection, discrimination, identification, and comprehensive. After that new children will be taught to train articulations that support communication for everyday use.

TKLB Santi Rama has a special BKPBI program, where there is a special room for holding hearing training. However, child-bearing training is not only done in the BKPBI room, but done in the classroom. The first thing that is required in school is, the children must use hearing aids or cochlear implants. Articulation training is carried out in the articulation and classical rooms in the classroom.

In addition, there are three steps that schools do such as planning, implementation, and evaluation. In planning, schools conduct assessments, prepare learning designs and media tools. After that, the school conducts hearing and articulation training. And the third step is the evaluation of processes and results.

Suggestions that can be submitted in order to make this research increased or enhanced is by interviewing and observing how the potential or abilities of students have in order to know how successful the school program.

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