

Total Communication Learning Model:

Using pictures, writing and reading to increase language capacity for deaf children

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Abstract—This research described the use of total communication learning model in enhancing the language capacity of deaf children. Conventionally, the learning model employed in teaching deaf children is based on sign language and this limit their ability to communicate with people that are not deaf. Furthermore, these children are marginalized from the society because of their inability to understand the language used for public communication and, consequently, there is a problem of communication between them and other people in the society. The research was conducted through the use of qualitative research method while data as collected through the use of observation, in-depth interview, and focus group discussion. The data collected was verified through the use of source triangulation and descriptive analysis. The research revealed that total communication learning model through the use of pictures, writings, and readings increases and enhances the language skill of deaf children. It was also discovered that the model helped these children to communicate verbally with other people in their community. Conclusively, the research showed that it is possible for deaf children to communicate with other people without relying on sign language only.

Keywords—*deaf children; total communication; learning model; sign language; picture-writing-reading*

I. INTRODUCTION

This research discusses the implementation of total communication learning model for deaf children have difficulties hearing, and speaking. Traditionally, deaf children learn through the use of sign languages [1,2], as a result of this they can only communicate effectively with each other but have difficulties communicating with others in their society. It is important to point out that just like every other child, deaf children so have right to education and knowledge [3]. This spurred the development of instructional models using oral language and a set of 'hearing instrument' in the form of 'multi-sensor' designed to be placed in the child's ear [4]. These devices are designed for the purpose of amplifying the sounds coming to the children so that they will be able to hear clearly. However, the efficient and successful application of these devices in teaching deaf children requires that the devices must be use from early childhood [5,6] and that the mother is privy to hear roles in helping the child [7]. In recent times, these hearing devices can be implanted into a child's ear through the use of advanced technologies [8,9]. There is a continuous

development of several learning models for deaf children and example of this is the use of animated films [10].

Furthermore, these children are no more restricted to special schools, they are now allowed to attend schools with inclusion models [11]. This system has been widely applied in the world and Indonesia, but there are many obstacles stemming from the teacher's teaching methods giving no regard to the abilities of deaf children. In Australia, the inclusion model makes provision for two teachers, the main teacher and auxiliary teacher which act as translator so that deaf children would have no difficulty following the learning process [12]. In the actual sense, a deaf child may possibly have the same intellectual abilities, high consciousness, and reasoning with a normal child in an inclusion class [13].

In addition, teachers have significant roles to play in the class [14] and they can be supported through the use of technologically based information on social media [15]. Multimedia systems can be used as a medium of teaching deaf children about language and numbers [16]. Such that through the use of bowling game, deaf children can effectively recognize the concepts of numbers from one to ten [17]. Another learning model that can be employed by teachers is drawing and coloring, this help to involve the emotional state of the children in the learning process [18]. In fact, learning process is not restricted to the walls of the classrooms, with the inclusion of certain courses, it can also be outside the classroom [19].

Furthermore, the learning model for deaf children can make use of virtual media so as to bring the concept closer to reality [20]. Through the use of oral language [21] and images in books, deaf children can easily know some objects [22]. It is, however, important to state that if this method is to be applied at a higher level, the involvement of parents is very crucial [23]. In recent times, information technology and internet network are now being employed in educating deaf children [24,25], and this allows sign language to be combined with oral language [26]. Other learning models make use of written illustrations that are very easy to understand accompanied by visualization of nouns, verbs, adverbs, and other figures [27].

Despite the fact that many research works have been carry out on various learning models for deaf children, little attention has been placed on the use of pictures, writings and reading as a learning model for them. Therefore, it is important to carry

out a research on that so as to expand the options available to teachers and tutors when teaching deaf children. The model to be researched is known as the total communication learning and it can help deaf children improve their language capacity, and skill in oral language, writings and readings, and finally, it can help them to function effectively be independent and get a good job.

II. RESEARCH DESIGN

The focus of this research was to critically analyze field data on the effect of total communication learning model on deaf children. The research, was divided into two stages. The first stage was about the collection of data about implementation, problems, and the result of this learning model on deaf children from education authorities, school for deaf children, and deaf parents. This was done through the use of participant observation and in-depth interviews.

The second stage, involved the exploration of data from main informants - teachers that are implementing the total communication learning model, informal institution courses, as well as the mothers of the deaf children that are involved in the research. The setting use for this research include school for deaf children and schools that have implemented inclusion learning. In analyzing the data from this research the gotten from the research was continually refined and for the purpose of understanding the data was indexed, coded, categorized, transcribed and interpreted.

III. FINDING AND DISCUSSION

A. Learning of Deaf Children at Special Schools

As stated earlier, deaf children are disability group of children that has difficulties in hearing and speaking. In previous times, these children were not able to get education in public schools and recent development has brought about special school [28], where these children learn through the use of sign language and gestures [29]. However, there are continuously call for the development of different media to be used in educating and teaching these special children. The introduction of hearing aids was one of these developments [4] so that the sound from outside can be enlarged.

Classification has been made for deaf children in schools. Children between the ages of four to fifteen years old can be classified to be very light deaf from 27 to 40 dB, light from 41 to 55 dB, medium from 50 to 76 dB, heavy from 71 to 90 dB, and very heavy when is above 90 dB [30]. In learning, these children use these hearing devices according to their condition. However, the use of this devices and Cochlear implant [31] must be started at an early stage of the children's lives [5,6] and there is need to involve someone that is very close to them, most preferably mothers for its use to be effective [32,33].

There is virtual media [19] is another concept that has been introduced to bring the concept of words closer to reality so as to make it easy for deaf children to understand all vocabularies, needed for effective communication. Presently, special schools for deaf children allow students from the fifth grade to use mobile phones to communicate with each other and their parents through applications like WhatsApp, Video call, E-

mail, and Instagram. In addition, these children are being taught how to source information from the internet.

B. Total Communication Learning Model for Deaf Children

Learning by total communication model was first developed by Holcomb for deaf children [34]. He combined various learning media ranging from speech, pictures, and writing for these children. The introduction of this model was targeted at improving and increasing the ability of deaf children in using other languages apart from sign in communicating. This desire led to the development of the total communication learning model to include speech media, speech, sentences, finger spelling or gestures, body language so that the children can achieve effective communication from all entire spectrum of languages.

Another learning model of total communication developed by Suparno [35] includes three elements which are (1) using hearing aids, (2) oral communication, and (3) sign language. Two important factors in this model of total communication learning are the spoken and manual languages. They are important because they complement each other and they cannot be separated from one element to the other. Nevertheless, applying the same method in teaching normal and deaf children may not show efficient results as a result of the fact that deaf ones are not able to hear sounds perfectly and are unable to imitate other people's voices properly. This reasoning calls for the further development of total communication learning model in achieving better language skills.

The total communication learning model developed in this study mainly involved six elements, namely speech, utilizing the hearing aids, reading and writing, pantomimic, reading mouth, and using finger sign. Therefore, it is important to point out that these are added to the conventional elements of the model – pictures, writings and readings. All these elements were merged to achieve the purpose of this research.

For example, using some pictures and writing on social media can help deaf children improve their language skills and master their communication. By, introducing some pictures or photos of their parents and including a legend below the picture can help them in remembering the photo as well as the legend effectively. Furthermore, the use of pictures and written languages can be expanded to include nouns, verbs, adverbs, and any words for the to recognize the pictures as well as the words or sentences that describe them.

Total communication learning model actually makes use of teaching more than the use of hearing aids for deaf children whose hearing ability is very limited and for those who require repeated training and more time to imitate. However, it pertinent to reiterate that it is not that deaf children cannot speak, just that their words cannot be easily understood by other people. There is no difference in the learning ability of deaf children and normal ones when it comes to learning English. For example, just like every other person, they may not be able to pronounce words when they first heard it from their tutor but with constant practice, they end up getting it over time. Likewise, the imitation process of deaf children requires more time because of the difficulties attached to the clarity of their words even after consistence practice.

Furthermore, writing and reading also need to be emphasized in total communication learning model because they are more effective than pictures. These two elements are very important for deaf children because most communication in the world today are done through them. When these children have the ability to write and read, they can communicate with other people, especially the ones in their communities. Many applications and features on mobile phones are displayed in picture and words to be read by the people and if they develop their skill of writing and reading, it will be easy for them to communicate through the use of these applications. In the nearest future, abilities and skills of writing and reading will become very useful for these children because most communication processes with others will depend on them.

IV. CONCLUSION

Total communication learning model is needed and important for deaf children because it has the ability of improving their language capacity most especially in speaking, writing and reading. This model provides deaf children with opportunities of learning more words and their meanings, ability to communicate with others in their society and different social media applications. However, this model has not been fully tested in deaf schools, but with various development and improvements, it will become more effective and efficient in providing deaf children the opportunities they need to excel in life.

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REFERENCES

- [1] G.M. Preisler and M. Ahlstrom, "Sign language for hard-to-hear children - A hindrance or a benefit for their development?" *European Journal of Psychology of Education*, vol. XII, pp. 465-477, 1997.
- [2] P. Frostad, "Deaf children's use of cognitive strategies in simple arithmetic problems," *Educational Studies in Mathematics*, vol. 40, pp. 129-153, 1999.
- [3] S.W. Cawthon, "Teaching Strategies in Inclusive Classrooms With Deaf Students," *Journal of Deaf Studies and Deaf Education*, vol. 6, pp. 3, 2001.
- [4] D.J. Power and M.B. Hyde, "Multisensory and unisensory approaches to communicating with deaf children," *European Journal of Psychology of Education*, vol. 12, pp.449, 1997.
- [5] C. Mayer, "What Really Matters in the Early Literacy Development of Deaf Children," *Journal of Deaf Studies and Deaf Education*, vol. 12 pp. 411 – 431, 2007.
- [6] A.M. Moses, D.B. Golos, and C.M. Bennett, "An alternative approach to early literacy: The effects of ASL in educational media on literacy skills acquisition for hearing children," *Early Childhood Education Journal*, vol. 43, pp. 485-494, 2015.
- [7] M. Harris and H. Mohay, "Learning to Look in the Right Place: A Comparison of Attentional Behavior in Deaf Children With Deaf and Hearing Mothers," *Journal of Deaf Studies and Deaf Education*, vol. 2, pp. 95 – 103, 1997.
- [8] B. Figueras, "Executive Function and Language in Deaf Children," *Journal of Deaf Studies and Deaf Education*, vol. 13, pp. 363-377, 2008.
- [9] R. Cole, D.W. Massaro, J.D. Villiers, B. Rundle, K. Shobaki, J. Wouters, and A. Tarachow, "New tools for interactive speech and language training: Using animated conversational agents in the classrooms of profoundly deaf children. London: Esca / Socrates Mitisse UCL, 1999, pp. 45-52.
- [10] H. Knoors and M. Marschark, "Language Planning for the 21st Century: Revisiting Bilingual Language Policy for Deaf Children," *Journal of Deaf Studies and Deaf Education*, vol. 17, pp. 291-305, 2012.
- [11] K.H. Kreimeyer, "Academic and Social Benefits of a Co-enrollment Model of Inclusive Education for Deaf and Hard-of-Hearing Children," *Journal of Deaf Studies and Deaf Education*, vol. 5, pp. 174-185, 2000.
- [12] R.I. Mayberry, *Cognitive development in deaf children: the interface of language and perception in neuropsychology*, second ed., vol. 8. Amsterdam: Elsevier Science BV *Handbook of Neuropsychology*, 2002, pp. 71-107.
- [13] M.J. Janssen, J.M. Riksen-Walraven, and J.P. van Dijk, "Enhancing the quality of interaction between deafblind children and their educators," *Journal of developmental and Physical Disabilities*, vol. 14, pp. 87-109, 2002.
- [14] H.G. Lang and D. Steely, "Web-based instruction for deaf students: What research says to the teacher," *Instructional Science*, vol. 31, pp. 277-298, 2003.
- [15] Y. Yuniati, "Development Device Soft Learning Signal Language For Sufferers Deaf Children," *Generic Journal*, vol. 6, 2011.
- [16] F. Ginting, "Increase Ability Know Concept Numbers 1-10 Through Game Plastic Bowling For Deaf Child," *Jupekhu (Journal Scientific Education Specifically)*, vol. 1, 2012.
- [17] R. Lev-Wiesel and J. Yosipov-Kaziav, "Deafness As Reflected in Self-Figure Drawings of Deaf People," *Journal of Developmental and Physical Disabilities*, vol. 17, June 2005.
- [18] J. Sigafos, R. Didden, R. Schlosser, V.A. Green, M.F. O'Reilly, and G.E. Lancioni, "A Review of Intervention Studies on AAC to Individuals who are Deaf and Blind," *J Dev Phys Stabilized*, vol. 20, pp. 71-99, 2008.
- [19] N. Adamo-Villani, "A Virtual Learning Environment for Deaf Children: Design and Evaluation International," *Journal of Human and Social Sciences*, vol. 2, pp. 123-128, 2007.
- [20] N. Silvestre and C. Cambra, "The relationship between drawing and oral language in deaf students aged three to five," *European Journal of Psychology of Education*, vol. XXIV, pp. 3-15, 2009.
- [21] N. Matthew and S. Clow, "Putting Dissabled Childdren in the Picture: Promoting Inclusive Children's Books and Media," *Media / Critical and Cultural Studies, SCMP, Macquarie University, NSW Australia*, vol. 2109, pp. 65-76, 2009.
- [22] F. Lecciso, S. Petrocchi, and A. Marchetti, "Hearing mothers and oral deaf children: an atypical relational context for theory of mind," *European journal of psychology of education*, vol. 28, pp. 903-922, 2013.
- [23] L. Healy, A.P. Jahn, and J.B. Frant, "Digital technologies and the challenge of constructing an inclusive school mathematics," *ZDM*, vol. 42, pp. 393-404, 2010.
- [24] I. Kožuh, M. Hintermair, A. Holzinger, Z. Volčič, and M. Debevc, "Enhancing universal access: deaf and hard of hearing people on social networking sites," *Universal access in the information society*, vol. 14, pp. 537-545, 2015.
- [25] H. Anglin-Jaffe, "Signs of Resistance: Peer Learning of Sign Within 'Oral' Schools for the Deaf," *Stud Philos Educ.*, vol. 32, pp. 261-271, 2013.

- [26] D.B. Golos, A.M. Moses, and K.A. Wolbers, "Culture or disability? Examining Deaf characters in children's book illustrations," *Early Childhood Education Journal*, vol. 40, pp. 239-249, 2012.
- [27] M. Marschark, A. Paivio, L.J. Spencer, A. Durkin, G. Borgna, C. Convertino, and E. Machmer, "Don't assume deaf students are visual learners," *Journal of developmental and physical disabilities*, vol. 29, pp. 153-171, 2017.
- [28] H. Anglin-Jaffe, "Signs of Resistance: Peer Learning of Sign Within 'Oral' Schools for the Deaf," *Stud Philos Educ.* vol. 32, pp. 261-271, 2013.
- [29] T. Hernawati, "Development of Language and Speaking Ability in Deaf Children," *JASSI_ my son*, vol. 7, pp. 101-110, 2013.
- [30] N. Abdullah, "Knowing Children with Special Needs," *Magistra*, pp. 0215-9511, 2013.
- [31] M.A. Svirsky, A.M. Robbins, K.I. Kirk, D.B. Pisoni, and R.T. Miyamoto, "Language development in profoundly deaf children with cochlear implants," *Psychological science*, vol. 11, pp. 153-158, 2000.
- [32] J.L. DesJardin and L.S. Eisenberg, "Maternal contributions: Supporting language development in young children with cochlear implants," *Ear and hearing*, vol. 28, pp. 456-469, 2007.
- [33] I. Roskom, "Comparative study of mother's beliefs and childhearing behavior: The effect of the child's disability and mother's educational level," *European Journal of Psychology of Education*, vol. XX, pp. 139-153, 2015.
- [34] R. Madebrink, "Integration of the Deaf—a Must?" *Scandinavian Audiol*, vol. 2, pp. 13, 1972.
- [35] S. Suparno, "Pendekatan Komunikasi Total Bagi Anak Tunarungu," *Cakrawala Pendidikan*, 1989.