THE USE OF PICTURE EXCHANGE COMMUNICATION SYSTEM (PECS) TECHNIQUE TO IMPROVE VOCABULARY TO AUTISM STUDENTS AT SD INKLUSI PELANGI NUSA

A THESIS

Intended to fulfill of requirements for the Award of Sarjana Degree at English Study Program of Teacher Training and Educational Faculty Islamic University of Riau

PIPIT SURYADI
086311884

ENGLISH STUDY PROGRAM
THE LANGGUAGE AND ART DEPARTEMENT
TEACHERS' TRAINING AND EDUCATION FACULTY
ISLAMIC UNIVERSITY OF RIAU
PEKANBARU
2019

ABSTRACT

Pipit Suryadi : The Use of Picture Exchange Communication System (PECS) Technique to Improve vocabulary to Autism Student at SD Inklusi Pelangi Nusa.

Key words : The Use Of, Picture Exchange Communication System Technique, Vocabulary, Autism Student.

The aims of the Research are to find is there any significant effect in improving vocabulary to autism student. Sample of the research is the an autism student at SD Inklusi Pelangi Nusa with out comparison group. This research carried out based an experimental research design. The variable of this research are Picture Exchange Communication System (PECS) and vocabulary.

Picture Exchange Communication System is a Method that designed to Autism Student. The researcher set in front of the student and saw him the picture, and after that the student answered question orally.

Oral Question used to get the data. because there is no comparison group the researcher cannot used T test. So the researcher used Chi Square to Analyze the data. Firstly the researcher find the percentage of every pre-test and post-test. The score of them are pre-test 1 (0%), pre-test 2 (40%), post-test 1 (80%), post-test 2 (100%) and then the Chi Square is (10.73). thus the researcher can conclude that Picture Exchange Communication System (PECS) can give the improvement in autism vocabulary.

ACKNOWLEDGMENT

The writer would like to express the first and greatest gratitude to the Almighty God, Allah SSWT for blessing the write in completing the thesis entitled **"THE USE OF PICTURE EXCHANGE COMMUNICATION SYSTEM (PECS) TECHNIQUE To IMPROVEVOCABULARY TO AUTISM STUDENTS AT SD INKLUSI PELANGI NUSA."** This thesis is proposed to full fill one of the requirements for award f bachelor degree of education at English Study Program of teacher training and Educational Faculty of Islamic University of Riau. Praise and invocation are also given by the writer to the beloved Prophet, Muhammad SAW who brought all the good things to the world.

In writing this thesis, the writer has received help, support, and suggestions from various side. Therefore, on this good opportunity, the writer would like to express her sincere and deep gratitude:

1. **Drs, Nazirun, M.Ed,.** The dean of teacher Training and Educational Faculty of Islamic University of Riau.

2. **Johari Afrizal, S.Pd.,M.Ed.,** as the Head of English Study Program.

3. Dra. Hj. Syofianis, M.Ed, as the Sponsor who give guidance, advise, and suggestion in accomplishing this thesis.

4. **Miranti Eka Putri, S.Pd., M.Ed.,** as the Co-sponsor who gave guidance, advice and   suggestion in accomplishing this thesis.

5. All lecturers of English Study Program at Teacher Training and Educational Faculty if Islamic University if Riau who gave contribution to the writer.

6. A deep gratitude to my beloved parents **H. Zayadi Nur** and **Ermawati** who always   gave affection, advice and support for me when I was sad and disappointed. I also   thank you for your tremendous prayers that bring me to the success.

7. All of my family members that cannot be mentioned one by one. Thank you all and I love you so badly.

8. All of students at english study program of teacher Training and Educational Faculty of Islamic University of Riau in Academic year 2008 especially for the   students in F class that cannot be mentioned one by one. Thank you for the f riendship.

The writer realize that this thesis is not perfect. Therefore, the writer hoped the readers would like to give critics and suggestions for this thesis in order to improve it. However, the writer also hoped that this thesis can be useful for knowledge development especially in education.

<div align="right">Pekanbaru, March 2013</div>
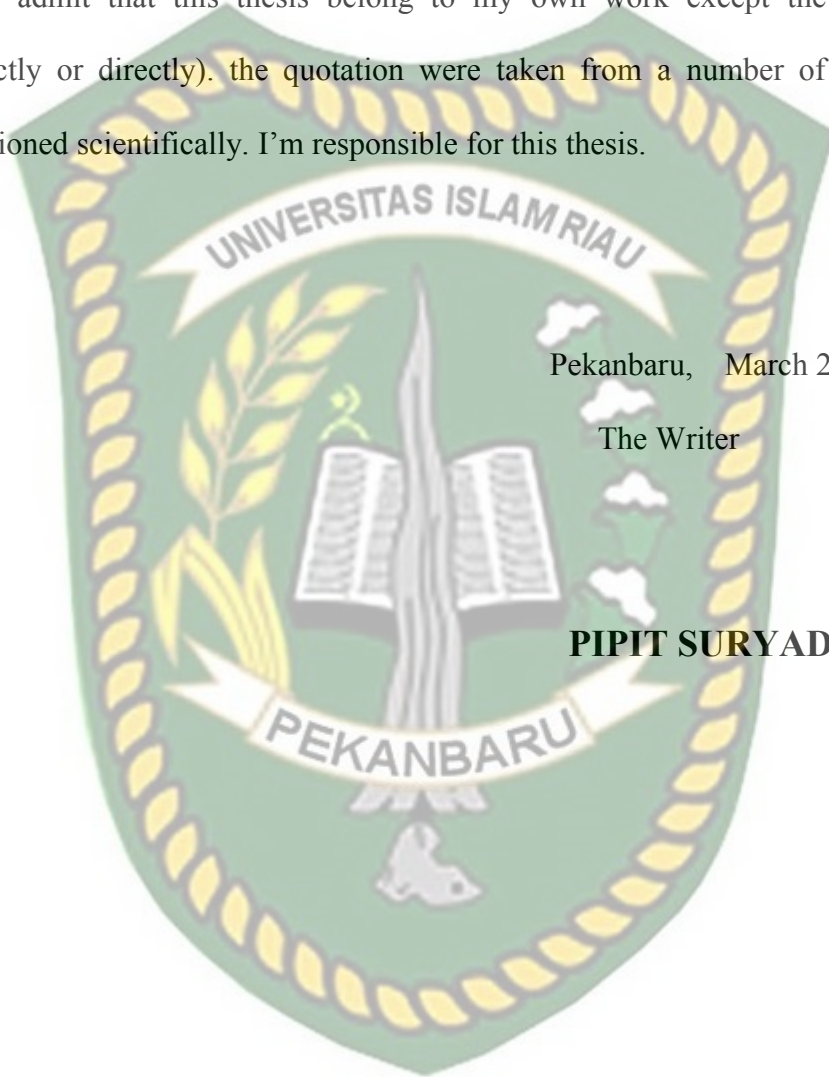
<div align="center">**PIPIT SURYADI**</div>

ADMISSION

I admit that this thesis belong to my own work except the quotations (directly or directly). the quotation were taken from a number of sources as mentioned scientifically. I'm responsible for this thesis.

Pekanbaru,   March 2013

The Writer

PIPIT SURYADI

LIST OF CONTENTS

List of Tables

List of Figure

CHAPTER I

INTRODUCTION

1.1 Background

Nowadays, English has an important role in the international relationship and communication among countries all over the world. For this reason, mastering English is prominently needed to obtain valuable information and knowledge on world current issues as well as contemporary applied sciences both in sciences and technology. A lot of media, such as books, magazines, newspaper and information in television or internet are encoded in English. Then , English is a language, which functions as an instrument of communication to deliver opinion of thought in the international forum. While in Indonesia English isone of the foreign language for Indonesian students that must be learnt in school especially for elementary students. English is considered as a difficult subject for Indonesian students, because English is completely differentfrom Indonesian language being look at from the system of structure, pronuntiation and vocabulary.English teaching involves of four language skills, they are listening, speaking, reading, and writing. The students should mastery the four skills, if they want to speak English very well. In guiding students to mastery that fourskills, the teacher must be wiser in finding suitable method for some students by using particular technique, such as pictures, games and songs. By mastery that four skills, the student can be able to make a conversiation and communication with another people who use English as they second language.

According to Beukelman & Mirenda (1998, p.3) communication is any act which one gives to or receives from another person information about that person's

needs, desire, perceptions, knowledge, or affect states. Communication may be intentional or unintentional, may involve conventional signals, may take linguistic or non linguistic forms, and may occur through spoken or other modes. As the basic human communication model, there is sender and receiver of communicative messages. Many expert provides an overview of communicative intentions for children with autism, because autism children are difficult to make communication with other people.

Holding on UUDs' formula, education is a conscious attempt to help students' growth and development that In UUD 1945 passage 31 verse 1 set that: All of Indonesian people deserve to get education. The word "all" indicate that all of Indonesian people including exceptional children or children that have special need to deserve to get education.

Government regulation of 2002 on special education which is an improved PP PLB, on one of the article says that children who require special attention, so it needs special education services, among others is hyperactivity. In Diagnostic and Statistical Manual of Mental Disorder, autism is one of five types of interference from PPD *(Persuasive Developmental Disorder),*out of ADHD *(Attention Deficit Hyperactivity Disorder)* and ADD *(Attention Deficit Disorder)*.

Autism is a neuron biological disorder in which the communication and social interaction abilities of a child are impaired. Baron-Cohen (1993) stated that Autism is a condition of a person from birth or during infancy,that makes him unable to form social relationships or normal communication. Cosequentlythe child is isolated from other human beings and into the world of repetitive,activity and

obsesive interest . These symptoms begin to appear from birth or during childhood, usually before the child is 3 years old. Children on the autism spectrum may avoid eye contact, ignore others, speak little, or lose language or social skills they once had.

According to Power (1989) there are 6 disorder of children with autism: (a) social interaction, (b) verbal communication, (c) emotional behavior, (d) play pattern, and (e) sensoric and motoric disorder.

As the theory above that children with autism hard to make verbal communication. Instead, non-verbal or picture language is easy for them to understand. Hence, parents or teachers should demonstrate pictures of all concrete things to autistic children. Photographs can also be used for this purpose. They should also demonstrate various actions so that it is easier for children to understand. For example to make a child understand what is an apple, the teacher should show the picture of the fruit. Similarly, to make a child understand the difference between stand up or sit down, teachers should demonstrate those actions. This way, the child will learn faster.To make autistic children understand words, picture cards should be used. These have words written on them along with pictures. As their picture memory is fairly well-developed, they find it easier to understand and memorize the words. Children learn words by hearing the sound that they hear while the teacher speaks. Hence, proper pronunciations should be made by teachers to help the autistic child learn. A child may jumble up with words that are close to each other. For e.g., it may be difficult for a child to differentiate between consonants. In order to help overcome this, teachers must stress on consonants while speaking the word. This way, it may help the child to remember them. Visual methods can also help children

in understanding numbers. As autistic children understand concrete things better, teachers can make use of number blocks, charts, etc. They should also let children handle or touch the number blocks. Concepts like adding and subtracting should be taught with these methods.

Based on the explanation above, researcher try to use PECS**(Picture Exchange Communication System)**in the study to the right opportune media to make communication with autism student. PECS is an communication system developed as an AAC specifically for preschool-aged children with autism and related socio-communicative disorders-children who have minimal or no ability or desire to communicate (Bondy and Frost, 1994). PECS is appropriate for individuals who do not us speech or who may speak with limited effectiveness: those who have articulation or motor planning difficulties, limited communicative partners, lack of initiative in communication.The decision between PECS and sign language as an augmentative means of communication is often a source of concern for people dealing with non-verbal individuals or those with very limited verbal ability.

There are many interventions that seek to teach non-verbal children language and communication skills, however, for many children with autism, therapies using speech or sign language are not effective because they do not teach the children how to use language

That's way the researcher interested to use pictures as a method to teach English vocabulary to autism student, because by using it can make autism student focused on the material that taught by the teacher. Pictures can more explain the

words, (Shipton and Mee Kenzle, 2006) one of the methods to help children with vocabulary is that ask them to draw a picture of the word.

As the conclusion, it is assumed that picture is an effective to solve the autism learning problem,rather than others strategies in teaching vocabulary in special school. So the researcher interested to conducting a research with title: **"Using Picture Exchange Communication System (PECS) to Improve Vocabulary to Autism Student in SD Inklusi Pelangi Nusa"**

1.2 Setting of Problem

Taken from http://www.spirereaserch&consulting.com, Indonesia is in the fifth position of autism rank in the world. The rank are: 1. Aruba, 2. Canada3. Faice Island, 4. Finlandia, 5. Indonesia, 6. Ingland, 7. USA, 8. Swedia, 9. Japan, 10. Denmark, 11. France, 12. Ireland, 13. Jerman, 14. Oman.

People with autism have a psycho-educational profile that is different from normally developing individuals. Studies show that there may be deficits in many cognitive functions, yet not all are affected. In addition, there may be deficits in complex abilities, yet the simpler abilities in the same area may be intact. Current research identifies the following cognitive features associated with autism:

a. Deficits in paying attention to relevant cues and information, and in attending to multiple cues

b. Receptive and expressive language impairments, particularly the use of language to express abstract concepts

c. Deficits in concept formation and abstract reasoning

d. Impairment in social cognition, including deficits in the capacity to share attention and emotion with others, and to understand the feelings of others

e. Inability to plan, organize, and solve problems

1.3 Limitation of Problem

Based to the setting of the problems above, the writer limited the problems above to continue the research. The limitation are : Deficits in paying attention to relevant cues and information, and in attending to multiple cues, and receptive and expressive language impairments, particularly the use of language to express abstract concepts

1.4 Formulation of The Problems

1. Is there any significance improvement in vocabulary of autism children by using Picture Exchange Communication System?

1.5 Objective of Problem

1. To find out the significance improvement of autism's vocabulary by using Picture Exchange Communication System.

1.6 Hypothesis

H_0 : There is no significance improvement in vocabulary of autism children by using Picture Exchange Communication Technique.

H_A : There is significance improvement in vocabulary of autism children by using Picture Exchange Communication Technique.

1.7 Signification of Study

1.7.1 For Student

To give anew communication method to autism children, and make them can tell their desire, and understand the shape of a things.

1.7.2 For Teacher/ Autism Mentor

The teacher saute especially autism mentor can develop learning media through visual media and design the visual media that convenient to their students.

1.7.3 For Researcher

To add the knowledge about learning especially in utilization of visual media to autism students.

1.7.4 For Parents

To give an extensive knowledge about autism children and give information how to face them by using a media that make the autism children interest with it.
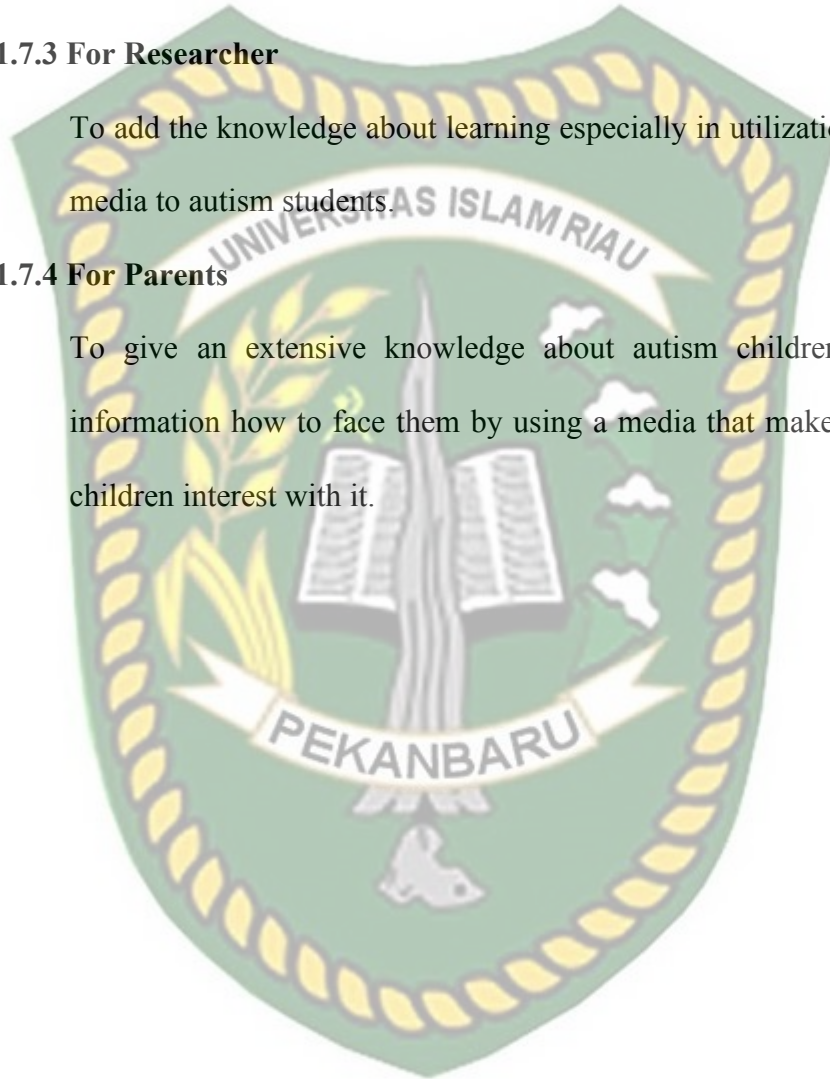
1.8 Definition of Terms

Vocabulary

vocabulary is an essential component of all uses of slang language (Long and Richard (1987))

Autism

Baron-Cohen (1993) stated that Autism is a condition of a person from birth or during infancy,that makes him unable to form social relationships or normal communication.

PECS

The picture exchange communication system (PECS) is an augmentative communication system frequently used with children with autism (Bondy & Frost, 1994; Siegel, 2000;Yamall, 2000).
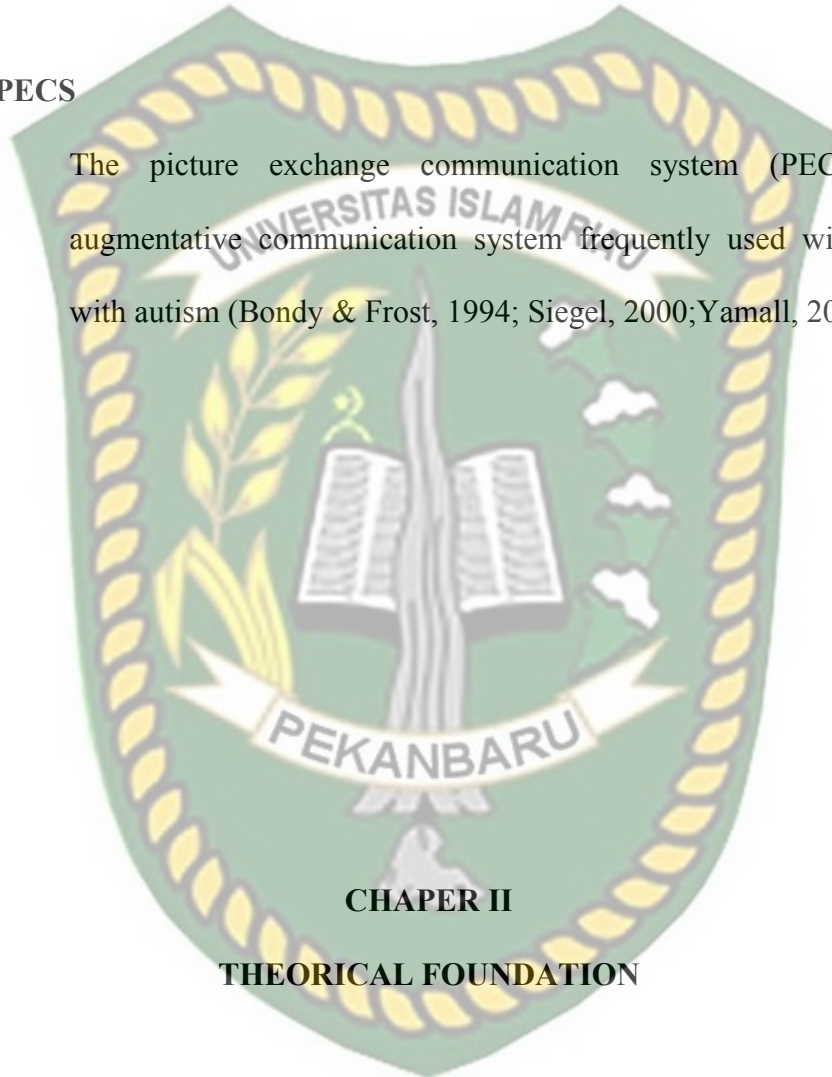
CHAPER II

THEORICAL FOUNDATION

2.1 Autism Children

2.1.1 Definition

According to American Psychiatric Association (1994), Autism is a spectrum disorder, identified by a variety of characteristics, which usually include perceptual, cognitive, and social differences. Among the defining characteristics, the

limited ability to produce and comprehend spoken language is the most common factor leading to diagnosis. Autism is a life-long developmental disability that prevents people from understanding what they see, hear, and otherwise sense. This results in severe problems with social relationships, communication, and behavior. Keenan (2000) explains that it is not just that they do not understand what others think and feel (lack of empathy) but they do not even understand themselves. Meanwhile, Koegel (1988) states that children with autism may exhibit repeated body movement such as hand flapping or rocking, unusual responses to people or attachments to objects, and resistance to change in routine. Another explanation of autism comes from Rita Jordan (1995) by saying that autism is a long life condition that will require special care and consideration into adulthood and involves distinctive ways of thinking about the world that leads to particular ways of behaving. Furthermore, Melly Budhiman (1999) says that autism is a wide and pervasive developmental disorder which syndrome can be seen on children before they are 3 years old. Beside that Baron-Cohen (1993) stated that Autism is a condition of a person from birth or during infancy, that makes him unable to form social relationships or normal communication.

The *Diagnostic and Statistical Manual of Mental Disorders*, DSM-IV (American Psychiatric Association, 1994) defines autism as a pervasive developmental disorder characterized by: Impairments in communication and social interaction, and Restricted, repetitive, and stereo type patterns of behavior, interests, lack of eye contact and activities. It is a complex neurological disorder that affects the functioning of the brain. Autism symptoms can be present in a variety of

combinations and may accompany other disabilities. Some people with autism have normal levels of intelligence, while most people with autism have some level of intellectual disability, ranging from mild to severe. This range is often referred to as high-functioning autism to low-functioning autism. There may be a range of difficulties in expressive and receptive language and communication. It is estimated that up to 50% of people with autism do not develop functional speech. For those who do, speech may have unusual qualities and have limited communicative functions. All people with autism have difficulties with social interaction and behavior, but the extent and type of difficulty may vary. Some individuals may be very withdrawn, while others may be overly active and approach people in peculiar ways. They have problems with inattention and resistance to change. They often respond to sensory stimuli in an atypical manner and may exhibit odd behaviors such as hand flapping, spinning, or rocking. They may also demonstrate unusual uses of objects and attachments to objects.

1.1.2 Type Of Autism Children

The diagnosis of autism is made by a physician or clinical psychology is twith expertise in the area of autism. Assessment and diagnosis ideally should involve a multidisciplinary team that includes a pediatrician or psychiatrist, a psychologist, and a speech and language pathologist. The psychologist often administers assessments to gather information about developmental level and behavior, and the speech and language pathologist assesses speech, language, and communicative behaviors. A medical assessment is conducted to rule out other

possible causes for the symptoms, as many of the characteristics associated with autism are also present in other disorders. A medical and developmental history is taken through discussion with the parents. This information is combined with the other assessments to provide the overall picture and to rule out other contributing factors. Parents who are seeking additional information regarding assessment and diagnosis should contact health professionals in their community. Professionals diagnose autism through the presence or absence of certain behaviors, characteristic symptoms, and developmental delays. The criteria for autism are outlined in the *DSM-IV* and the *International Classification of Diseases* (World Health Organization,1993).

The *DSM-IV*, which is most commonly used in North America, classifies autism as a disorder within a broader group of pervasive developmental disorders (PDD). PDD is an umbrella term for disorders that involve impairments in reciprocal social interaction skills,communication skills, and the presence of stereotypical behaviors, interests, and activities. The conditions classified as PDD in the *DSMIV* as (1) Autism, (2) Childhood Disintegrative Disorder (CDD), (3) Rett's Disorder, (4) Asperger's Disorder, (5) Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS)

According to Rachel Evans in her article, there are five types of Persasive Developmental Disorder or autism (a) Asperger's Disorder, (b) Kanner's Syndrom (classic autistic disorder), (c)Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), (d) Rett's Syndrom, (e)Childhood Disintegrative Disorder.

1.1.3   Characteristic Of Autism Children

Autism is a spectrum disorder. Behavioral symptoms or characteristics for autism can be present from mild to severe. We often hear terms or labels used to describe autistic children like, high-functioning or low-functioning. The important point to remember of children with autism can learn, make progress and may grow up to function productively with an appropriate education, benefits, supports and services.

According to American Psychiatric Association, 2000,   A diagnosis of autism requires impairment in three domains: social interaction, communication, and repetitive and stereotyped patterns of behavior, interests, and activities. An individual with autism demonstrates at least two behaviors indicative of impairment in social interaction, such as difficulty making eye contact; recognizing the meaning of particular facials expressions, body postures, and gestures as well as using these with expressive meaning; developing appropriate relationships with peers; sharing objects of interest with others; and sharing emotions with others. To have a diagnosis of autism, an individual must also exhibit at least one behavior indicative of impairment in communication, such as a lack of spoken language (not made up for through gesture or mime), difficulty maintaining conversations, stereotyped use of language, idiosyncratic language, and lack of developmentally appropriate play.Finally, for a person to be diagnosed as having autism, they must exhibit at least one of the following behaviors: a preoccupation with an interest that is "abnormal either in intensity or focus" a dependence on fixed routines, unusual and repetitive patterns of

motor behavior such as hand flapping, or an unusually strong interest in the parts of objects. This collection of observable symptoms defines "autism."

Although every person with autism spectrum disorders is unique, some characteristics are considered to be particularly important in the diagnosis of autism spectrum disorders.According to Alberta in her book *Teaching students with autism spectrum disorders*. These characteristics fall into four major categories: Communication characteristics, Social interaction characteristics, Unusual/challenging behavior characteristics, Learning characteristics.

Other characteristics of individuals with autism spectrum disorders include: Unusual patterns of attention, Unusual responses to sensory stimuli, Anxiety.

1.1.3.1 Communication Characteristics

All people with autism spectrum disorders experience language and communication difficulties, although there are considerable differences in language ability among individuals. Some individuals are nonverbal while others have extensive language with deficits in the social use of language. People with autism spectrum disorders may seem caught up in a private world in which communication is unimportant. This is not a intentional action but rather an inability to communicate. Language difficulties include:1. Difficulties with nonverbal communication; (a) inappropriate facial expressions, (b) unusual use of gestures, (c) lack of eye contact, (d) strange body postures, (e) lack of mutual or shared focus of attention.2. Delay in or lack of expressive language skills3. Significant differences in oral language, for those who do develop language; (a) odd pitch or intonation, (b) faster or slower rate

of speech than normal, (c) unusual rhythm or stress, (d) monotone or lilting voice quality. 4. Repetitive and idiosyncratic speech patterns. 5. Echolalic speech, immediate or delayed literal repetition of the speech of others; (a) appears to be non meaningful, but may indicate an attempt to communicate, (b) indicates the ability to produce speech and imitate, (c) may serve a communication or cognitive purpose for the student. 6. Restricted vocabulary; (a) dominated by nouns, (b) often confined to requests or rejections to regulate one's physical environment, (c) limited in social functions. 7. Tendency to perseverate on a topic—that is, to continually discuss one topic and have difficulty changing topics. 8. Difficulty with the pragmatics of conversation; (a) problems initiating communication, (b)difficulty using unwritten rules, (c)inability to maintain conversation on a topic, (d) inappropriate interrupting, (e) inflexibility in style of conversation, stereo type style of speaking.

1.1.3.2 Social interaction Characteristic

Students with autism demonstrate qualitative differences in social interaction and often have difficulty establishing relationships. They may have limited social interactions or a rigid way of interacting with others. The difficulties they have with social communication should not be seen as a lack of interest or unwillingness to interact with others; this lack of effective communication may result from an inability to distill social information from the social interaction and use appropriate communication skills to respond.

Understanding social situations typically requires language processing and non-verbal communication, which are often areas of deficit for people with autism. They may not notice important social cues, and may miss necessary information.

People with autism typically have an impairment in the use of non-verbal behaviors and gestures to regulate social interaction, and they may have difficulty reading the non-verbal behavior of others. People with autism have significant difficulty with any interaction that requires knowledge of other people and what they think or know. It has been theorized that people with autism have a social cognitive deficit in this area. Baron-Cohen has described this as the "theory of mind":people with autism are not able to understand the perspective of others, or even to understand that other people have a perspective that could be different from their own. They may also have difficulty understanding their own—and particularly other people's—beliefs, desires, intentions, knowledge, and perceptions. Students with autism often have problems understanding the connection between mental states and actions. For example, children with autism may not be able to understand that another child is sad—even if that child is crying because they are not themselves sad.

Teachers may better understand the thinking and behavior of their students with autism if they realize that these students may not be able to grasp the fact that other people have their own perceptions and viewpoints. Students with autism demonstrate these difficulties in a variety of observable ways. They have a tendency to play with toys and objects in unusual and stereotypical ways. Some may engage in excessive or inappropriate laughing or giggling. Play that does occur often lacks the imaginative qualities of social play. Some children with autism may play near others, but do not share and take turns, while others may withdraw entirely from social situations.

The quality and quantity of social interaction occurs on a continuum. Social interaction can be classified into three sub types along this continuum; (a)aloof—those who show no observable interest or concern in interacting with other people except for those needed to satisfy basic personal needs; they may become agitated when in close proximity to others and may reject unsolicited physical or social contact, (b) passive—those who do not initiate social approaches, but will accept initiations from others, (c) active but odd—those who will approach for social interaction but do so in an unusual and often inappropriate fashion.It should be noted that people with autism do not necessarily fall into one distinct spot on the continuum.

2.1.3.3 Unusual behavior Characteristic

Although children with ASD usually appear physically normal and have good muscle control, odd repetitive motions may set them off from other children. These behaviors might be extreme and highly apparent or more subtle. Some children and older individuals spend a lot of time repeatedly flapping their arms or walking on their toes. Some suddenly freeze in position.

As children, they might spend hours lining up their cars and trains in a certain way, rather than using them for pretend play. If someone accidentally moves one of the toys, the child may be tremendously upset. ASD children need, and demand, absolute consistency in their environment. A slight change in any routine in mealtimes, dressing, taking a bath, going to school at a certain time and by the same route can be extremely disturbing. Perhaps order and sameness lend some stability in a world of confusion

According to Ministry Education British Colombia, people with autism often demonstrate unusual and distinctive behaviors, including: (a) restricted range of interests, and a preoccupation with one specific interest or object, (b) inflexible adherence to a non-functional routine, (c) stereotype and repetitive motor mannerisms, such as hand flapping, finger flicking, rocking, spinning, walking on tiptoes, spinning objects, (d) preoccupation with parts of objects, (e) fascination with movement, such as the spinning of a fan, or turning wheels on toys, (f) insistence on sameness and resistance to change, (g) unusual responses to sensory stimuli.

2.1.3.4 Learning Characteristic

People with autism have a psycho-educational profile that is different from normally developing individuals. Studies show that there may be deficits in many cognitive functions, yet not all are affected. In addition, there may be deficits in complex abilities, yet the simpler abilities in the same area may be intact. Current research identifies the following cognitive features associated with autism:

a. deficits in paying attention to relevant cues and information, and in attending to multiple cues

b. receptive and expressive language impairments, particularly the use of language to express abstract concepts

c. deficits in concept formation and abstract reasoning

d. impairment in social cognition, including deficits in the capacity to share attention and emotion with others, and to understand the feelings of others

e. inability to plan, organize, and solve problems

Some students with autism have stronger abilities in the areas of rote memory and visual-spatial tasks than they have in other areas. They may actually excel at visual-spatial tasks, such as putting puzzles together, and perform well at spatial, perceptual, and matching tasks. Some may be able to recall simple information, but have difficulty recalling more complex information. Strength in visual-spatial skills has been described in personal accounts of individuals with autism. Temple Grandin suggests that some people with autism can more easily learn and remember information that is presented in a visual format, and that they may have problems learning about things that cannot be thought about in pictures. She explains that she has a visual image for everything she hears and reads, and that she "thinks in pictures."

Students with autism may have difficulty comprehending oral and written information—for example, following directions or understanding what they read. Yet some higher-functioning individuals may be relatively capable of identifying words, applying phonetic skills, and knowing word meanings. Some students may demonstrate strength in certain aspects of speech and language, such as sound production (phonology), vocabulary, and simple grammatical structures (syntax), yet have significant difficulty carrying on a conversation and using speech for social and interactive purposes (pragmatics).

2.2 Some Technique In Teaching Autism Student

2.2.1 Improving Vocabulary Skills Through Assistive Technology

Assistive technology (AT), such as digital story books and other computer supported reading instruction, is coming to the forefront a viable tool for teaching

literacy to students with language and learning differences(O'Neill & Dalton, 2002). Digital storytelling includes any stories created using multi-media technology such as Microsoft PowerPoint2003 (Microsoft, 2003) or Microsoft Photo Story 3 (Microsoft ,2004). The beauty of digital story telling is its flexibility to change in relation to instructional goals and individual learning characteristics.Digital stories, using the students ownwords, drawings, and photographs, enablestudents to make progress in all aspects oflanguage and literacy development (i.e*.,* reading,writing, listening and speaking) (Sadik,2008). Using assistive technology, such ascomputers, software, and other AT devices,allows students to become actively involvedin the reading process as well as encouragingthe typically hard to engage student in literacyactivities (O'Neill & Dalton, 2002).

The following strategy used best practicein reading instruction (*e.g.* repeated readings,repetition in novel ways, studentauthored stories), visual support systems,digital story books and games and assistivetechnology to improve the vocabulary acquisitionskills of a student with ASD.

2.2.2 Development and Evaluation of a Computer-Animated Tutor for Vocabulary and Language Learning in Children with Autism

Computer-based instruction is emerging as a prevalent method to train and develop vocabulary knowledge for both native and second-language learners (Wood, 2001) and individuals with special needs (Moore & Calvert, 2000; Barker, 2000; Yamamoto & Miya, 1999; Heimann et al., 1995). This method is creat by Baldi, He was implemented in a Vocabulary Wizard/Tutor, which allows easy creation and

presentation of a language lesson involving the association of pictures and spoken words.

2.2.3 Computer Assisted Instruction for Teaching Vocabulary to a Child with Autism

Computer assisted instruction (CAI) offers interactive, customize able, and measurable training for learning language. Children with autism can use CAI to learn at home, in a clinic, and in a classroom. It is readily available and affordable and computers are prevalent. CAI offers repetition, predictability, and interesting instruction that can support individual and classroom instructional goals.

The setting for treatment was a classroom in a summer school program. The classroom was arranged in a typical preschool configuration with numerous tables, chairs, bookshelves, a train table, cubicles lining a wall, a small trampoline, and assorted toys, books, and instructional materials in various locations throughout the room. There was a small table approximately 25 inches by 30 inches that held the computer monitor, keyboard, and mouse. The desktop computer was placed on the floor under the table. A child sized chair was set in front of the table. The table was near an exterior wall in the classroom. The child was seated in a chair at the table, which was facing the other tables in the classroom. The researcher sat on the floor next to the participant; this allowed the researcher to be at eye level with the participant, instead of above the participant.

The First Words II software by Laureate Learning Systems(http://www.laureatelearning.net/) was the CAI used for the testing and treatment. Prior to the initiation of the treatment phase, the researcher installed the software on the computer in the classroom. After the participant was identified and tested for his word knowledge, a set of words was selected from the words that the CAI taught. The words were divided into two lessons and the lessons were defined in the CAI on the computer in the classroom. The CAI was also configured with the instructional settings that controlled how the software would operate.The First Words II Vocabulary Card Decks (http://www.laureatelearning.net/) contained flash cards with a drawing of an object that was taught by the CAI. These flashcards were used to pre-test the participant's receptive recognition of words. The

flashcards showed a color drawing on a white background. They had rounded edges with a light smooth coating.

2.3   The PECS (Pictures Exchange Communication System)

2.3.1   Definition

Picture Exchange Communication System (PECS) is a form of augmentative and alternative communication (AAC) that used picture instead of word to help children communicate. PECS was developed in 1989 by Andrew Bondy and Lori Frost. It was first used at the Delaware Autistic Program in the United States.The picture exchange communication system(PECS) is a pictorial system that wasdeveloped for children with social-communication deficits (Frost & Bondy, 1994).PECS was designed especially for children with autism who have delays in speech development.PECS (usually pronounced "pex") has become synonymous

with picture card of any type. Lisa Jo Rudy in her article says that many autism children communicate by using picture cards. Whether cut from magazine, printed out from CD's, or purchased as a set picture cards offer the autistic individuals the ability to communicate needs, desires, and even ideas without the need for spoken language.Brody and Frost, 1994, stated that PECS is an communication system developed as an AAC specifically for preschool-aged children with autism and related socio-communicative disorders-children who have minimal or no ability or desire to communicate. Kate Wall (2004:93) then summarizes PECS as the system based on the principle of involving the child in communication by offering them opportunities to request items,which is not a skill young children with autism feel they have a need for. More, an official website of PECS addressed at(http://autism.healingthresholds.com/therapy/picture-exchangecommunication-system-pecs) concludes that Picture Exchange Communication System (PECS) is pictures based communication system designed to establish functional communication which not intended to teach a child to speak, between at least 2 people, bi-directional (using &understanding), initiate vs. respond to prompts, and direct vs Social communication. Another website addressed athttp://www.polyxo.com/visualsupport/pecs.htmlstates that Picture Exchange Communication System (PECS)is a form of alternative and augmentative communication(AAC) that uses pictures instead of words to help children to communicate. PECS was designed especially for children with autism who have delays in speech development

Much more significant to PECS philosophy is not the specific picture cards or their holders, but rather the process by which non verbal children (and adults) are taught to use these cards. Over time, claim the makers of PECS (and their claims are backed by experience and research), children who use PECS build independent communication skills. At the same time, aperently as a by product, many children also gain significant spoken language.

When the child wants one of these items, he given the picture to a communication partner (a parent, therapist, or caregiver). This exchange reinforces communication. PECS can also be used to make comments about things seen or heard in the environment. For example, a child might see an airplane overhead, and a picture of airplane to his or her parent. As the child begins to understand the usefulness of communication, the hope is that he will then begin to use natural speech.PECS is also called as the reward technique, because the students can get the desirable items from they communication partner.

2.3.2   Purpose of Picture Exchange Communication System

The purpose of PECS is to provide a beginning a functional communication system and to promote spontaneous initiation of communication. It is used primarily with students who do not imitate or initiate communication. The PECS program was developed by Lory Frost and Andrew Bondy (1994). PECS was developed as an AAC specifically for preschool aged children with autism and related social communicative disorders children who have minimal or no ability or desire to communicate. There are six phases to the program. It is important to note that not all students will need to go through all six phases. Once they are initiating

communication consistently it may be helpful to introduce manual communication boards or voice output communication devices.

The PECS system has gained widespread use nationally and internationally with children with autism and is appealing for several reason. First, the system requires few complex motor movements on the part of the speaker and does not require the listener to be familiar with an additional language such as sign language (Bondy and Frost 1994). Second, the PECS system has a relatively low cost and is portable and suitable for use in many settings. Third, case report indicate that the system can be taught relatively rapidly.

2.3.3 Procedure in Picture Exchange Communication System

In using of PECS, It has phases that must be followed respectively. According to Frost and Bondy (1994)there are six phases in the utilization of PECS.

Phase 1 "The Physical Exchange"

The students learns to pick up a picture of desired items, put it into the hand of a trainer, and releas the picture upon seeing that the trainer has an item that thye students wants. at this point, the requested item is given to the child.

Phase 2 "Expanding Spontanity"

Now the students is required to go to they communication board, remove the picture, go to the communication partner position and put the picture into the communication partner's hand in order to obtain the desired item.

Phase 3 "Picture Discrimination"

Requires the child to recognize that the different pictures represent diferent objects in the real world. The training in this phase begins with just two pictures, one

of a desired item and one of a non-preferred item. The students is given the item which he requests, which if they are not discriminating between the picture might not be the one they want.if the child has a great deal of difficulty with choosing the correct picture, extra helping to teach the child to discriminate may be introduced, such as using blank cards as distincter. However, the students is capable of discriminating between pictures and the using the appropriate picture to request the desired item, then the number of pictures available to the students is increased to make discrimination more challenging.

Phase 4 "Sentence Structure"

The students is taught to combine the symbol for a desired item with a symbol representing "I want". At this stage, the student's tools include a communication board on which pictures are kept, a Velcro sentence strip on which to combine symbols, and typically between twenty and fifty symbols. At first the symbol for "I want" is attached to the sentence strip prior to the child approaching it: the child's task is to place the symbols for the desired item to the right of "I want" and take the sentence strip to the communicative partner's hand who has the desired item.

Phase 5"Responding to 'What do you want?'"

Introduces an additional language skill, responding to question. This skill is taught by having a desired object available and the "I want" symbol on communication board. The teacher begins by simultaneously pointing to the "I want" card and asking, "What do you want?" the students should subsequently perform the regular exchange by putting the symbols together on the sentence strip and giving it

to the teacher in exchange for the desired object. After the students is successfully able to able perform the exchange in this scenario, the length of the time between the teacher asking "What do you want" and pointing the "I want" symbol on the communication board. Eventually the students should understand what the acceptable response to the question is and complete the exchange before the teacher prompts them by pointing to the "I want" symbol on the communication board.

Phase 6 "Responsive and Spontaneous Commenting"

The students is taught more question/statement pairs similar to "What do you want?"/"I want". Here, however, the focus is not on requesting but rather on expanding the skills that the student learned via requesting and applying them to communicating. The first new abstract symbol to be introduce is "I see." This is place on the communication board under "I want": several symbols that the student has already learned, but which do not represent highly desirable items, are also placed on the board. The teacher holds up one of the less preferred items (the symbol for which is on the board) and ask the students, "What do you see?" Training then proceeds as it did with "What do you want?"- with the teacher at first physically prompting the student to complete the exchange un prompt.

This part involves the teacher mixing the two questions that have been learned. If the students cannot discriminate between the two questions, then delayed prompting is continued until the student is able to correctly answer the two question. By this stage the student is also able to request items that are not in their immediate view, so "seeing" and "wanting" are not necessarily co-occuring. Once the student can discriminate between the two questions, a third, "What do you have?", is

introduced. "What doo you have?" is taught in the same manner as "what do you see?", and is at first isolated from the other questions. The PECS protocol recommends introducing further question at this stage, such as "What is it?" and "What do oyou hear?". This stage also involes teaching the student to make spontaneous comments. To do so, the teacher gradully reducestheir use of explicit verbal prompts (such as "What is it?") and begins to use more subtlecues such as gestures or at least minimalverbal cues (such as "Look!"). if the child does not respond well to the new cues, their response via the exchangecan be prompted until they perform the exchange on their own.

Other steps are recommended in the PECS manual for expanding the student's language skills via their pictorial communication system. These include colors, size, and locations, and answering yess/no questions.

2.4 Benefitial of Pecture Exchange Communication System for Autism Children

According to Jason M. Wallin (2004), in his article he said that PECS has a number of advantages over other methods of addressing communication:

a. Each exchange is clearly intentional and readily understood. When a child hands you a picture or sentence strip, the request or comment is quicklydetermined. The child is given an effective avenue for swiftly and easily meeting his needs.

b. From the start, communication is initiated by the child. Children are not drilled in rote responses to specific phrases or instructions, rather they are encouraged to independently seek out communication partners in naturally occurring settings.

c. Communication is meaningful and highly motivating. Reinforcement for communication is natural and strongly rewarding.

d. Materials are cheap, easy to prepare, and portable. A PECS symbol can be as simple as a hand-drawn picture, or a snapshot.

e. With PECS, the child has an essentially unlimited pool of potential communicative partners. Anyone willing to accept a picture is available, not just those who understand sign language or who are familiar enough with the child to understand him despite his articulation or motor planning difficulties. Children are able to generalize communication to a wide circle of people very quickly.

Agree with Jason M. Wallin, Lisa Jo Rudy (2007), stated that PECS has several beneficial for autism children her statement can mention as follows: (a) Decrease negative behaviors that were caused by frustrations; (b) Increase availability for learning and interaction; (c) Increase relatedness and emotional closeness; (d) Build spoken language skills (this is not a direct outcome of PECS, but seems to occur as PECS skills increase).

2.5   Past Study

MARJORIE H. CHARLOP-CHRISTY, MICHAEL CARPENTER and LOC LE, and LINDA A. LEBILANC AND KRISTEN KELLET (2002) In Journal ofAppliedBehavior Analysis, with title *USING THE PICTURE EXCHANGE*

COMMUNICATIONSYSTEM (PECS) WITH CHILDREN WITH AUTISM:ASSESSMENT OF PECS ACQUISITION, SPEECH, SOCIAL-COMMUNICATIVE BEHAVIOR, AND PROBLEM BEHAVIOR. The purpose of this jurnal is to examined the acquisition of PECS with 3 children with autism. In addition, the study examined the effects of PECS training on the emergence of speech in play and academic settings. The research question of this journal are, fisrt, is there any sigificant improvement in verbal speech of autism? Second, is there any significant effect inthe use of Picture Exchange Communication System? The theori used by the writer is (Bondy & Frost, 1994; Siegel, 2000; Yamall, 2000) The picture exchange communication system (PECS) is an augmentative communication system frequently used with children with autism. The place of the research is in Claremont Autism Center. Samples of this journal are three autism children in Claremont Autism Center. The instrument that use in this journal is by recording each session of the training trials. The writer collect the data by doing training trials such as, free play session, academic session, and PECS materials. The result of this journal is , all 3 children met the learning criterion for PECS and showed concomitant increases in verbal speech.

ALESHA POLLES, Senior Thesis, Department of Linguistics Bryn Mawr College 8 December 2010, ***Turning on "the light for communication". Intervention using the Picture Exchange Communication System (PECS) for children with autism.*** The purpose of this thesis is to examine th PECS it self and research conducted to evaluate the PECS system; in doing so, it will investigate what linguistic skills children acquire through PECS intervention, ways in which PECS

might be extended, and how research on PECS can be improved. The research question of this thesis are what linguistic skills children acquire through PECS intervention?What ways in which PECS might be extended, and how research on PECS can be improved. The theory that used by th writer is Autism, or "Autistic Disorder" as it is referred to in the DSM-IV, is one of five disorders included under the DSM-IV (American Psychiatric Association, 2000) umbrella of pervasive developmental disorders; this series of disorders is sometimes referred to as autism spectrum disorders or ASDs. Location when th writer make this thesis is at
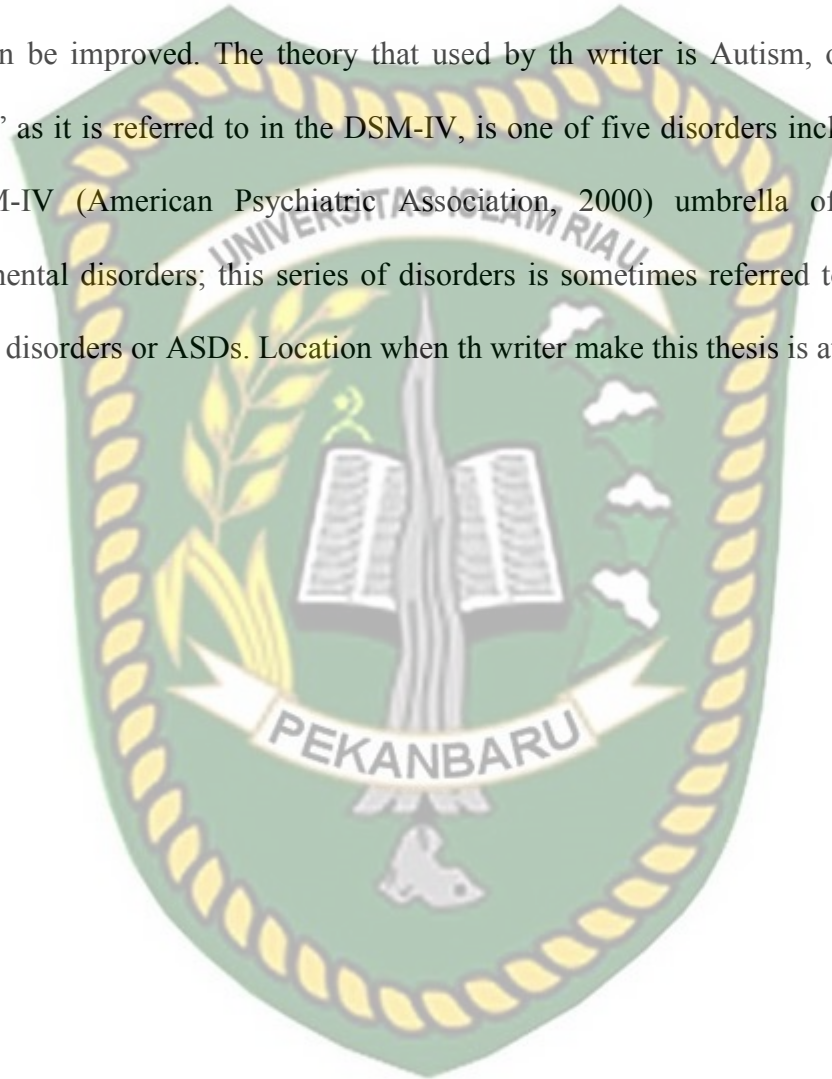
CHAPTER III

RESEARCH METHODOLOGY

3.1   Research Design

The design of this research is an experimental research referring to quantitative research. The researcher use time series research design. This research

design consists of studying one group, over time, with multiple pretest, and post test measures or observations made by researcher. This research design requires only one for the study (Creswell, 2005). This design consists of two type; Interrupted time series design and Equivalent time series design, in this research the researcher use equivalent time series design.

Table 3.1

Equivalent time series design

Select the Participant	Pre Test(1st test)	Treat ment	Post Test (2nd test)	Treat ment	Pre Test (3rd test)	Treat ment	Post Test (4th test)

Creswell (p,302 (2005))

3.2 Location and Time

The research has been conducted at SD Inklusi Pelangi, at jalan Soekarno Hatta. The researcher choose this school, because the subject that the researcher need comes in that school. The research would be taken the observation during three months.

3.3 Population and Sample

The population of this research is all the students in SD Inklusi Pelangi. The population this research are 15 students; there are only eight students with autism, and the other are students are suffer learning disorder. So, the sample will be taken on one sample which only one student as the sample. The sample will be teach by using the Picture Exchange Communication System

3.4 Research Instrument

The instrument of this research to collecting the data by doing observation and giving the students a question orally. Then students answer the question by giving the picture that put on the students table to the communication partner, in this case is the researcher.

3.4.1   Pre Test

Pre Test 1 (Test 1)

Table 3.2Pre-test 1 (Test 1) Topic and Indicator

No	Indicator	Topic	Number of Item
1	Interest		
2	Eye contact	What do you see?	5
3	Anxiety		

Pre Test 2 (Test 2)

Table 3.3 Pre-test 2 (Test 2) Topic and Indicator

No	Indicator	Topic	Number of Item
1	Interest		
2	Eye contact	What do you like?	5
3	Anxiety		

3.4.2 Treatment

Table 3.4 Treatment

No	Test	Treatment	Topic
1	Test 1	PECS 1	What do you see?
2	Test 2	PECS 2	What do you like?

3.4.3 Post Test

Post Test 1 (Test 3)

Table 3.5 Post-test 1 (test 3) Topic and Indicator

No	Indicator	Topic	Number of Item
1	Interest		
2	Eye contact	What do you see	5
3	Anxiety		

Post Test 2 (Test 4)

Table 3.6 Post-test 2 (Test 4) Topic and Indicator

No	Indicator	Topic	Number of Item
1	Interest		
2	Eye contact	What do you like?	5
3	Anxiety		

3.5 Data Collection Technique

The technique that the researcher use to collect the data in this research are in four steps,each steps has their purpose, and that steps are pre-test, treatment, post-test, pre-test,treatment, post-tests.

3.5.1 Test 1

In oral test, the researcher give four tests,the first test goes to the student before researcher use the picture exchange communication system technique as the communication media. In this test the researcher show the picture to the autism children, and then ask the student to answer the question.

3.5.2 Test 2

In the second test the researcher doing communication with the autism student after giving the PECS technique. The researcher show the picture and the communication cards to the autism children, and ask the autism children to answer the questions by using the communication cards.

3.5.3 Test 3

After doing the second test, the researcher also give the third test, and then give the treatment of PECS technique. After giving the treatment, the researcher ask the autism children to answer the question.

3.5.4 Test 4

Then the last test, after giving the last treatment, the researcher give the last test. Same with the second and the third test, the researcher give the question then ask the children to answer the question by using the PECS Technique

3.5.5 Treatment

After doing the first test the researcher do communication with the students by using PECS technique. And after giving the second test the researcher give the treatment to the students. The researcher do this activity In this activity the researcher teach the communication materials to the students by using PECS technique. During this part the researcher do the checklist observation to know whether the student interest or not with the technique.

3.6   Data Analysis

The technique of analyzing data from the students in this research is using Quantitative analysis.

The data will analyze by the following formula:

1. Finding Percentage Score

$$\text{Percentage} = 100 \text{ x}$$

n = correct score

$x =$ total score

2. Finding Chi Square using the formula

$$= \sum(O - E)^2/E$$

3. To find degree of freedom the writer uses the formula below;

$$Df \quad = \quad N - 1$$

Df = The degree of freedom

N = The number of group

1 = constant number

<div align="right">(J.D Brown, 1988:167)</div>

4. To find the significant level writer use $\alpha + 05$ form two – tailed test.

<div align="right">(J.D Brown, 1988:159)</div>

If the value of Chi Square -calculated is equal or lower than the probability on the degree of freedom (d.f) at $\alpha = .05$ for two-tailed test, the null hypothesis is accepted. On the other hand, if the value of Chi Square -calculated is great than the probability, the null hypothesis is rejected. Therefore, the alternative hypothesis is accepted (Hatch and Farhandy, 1982:24).
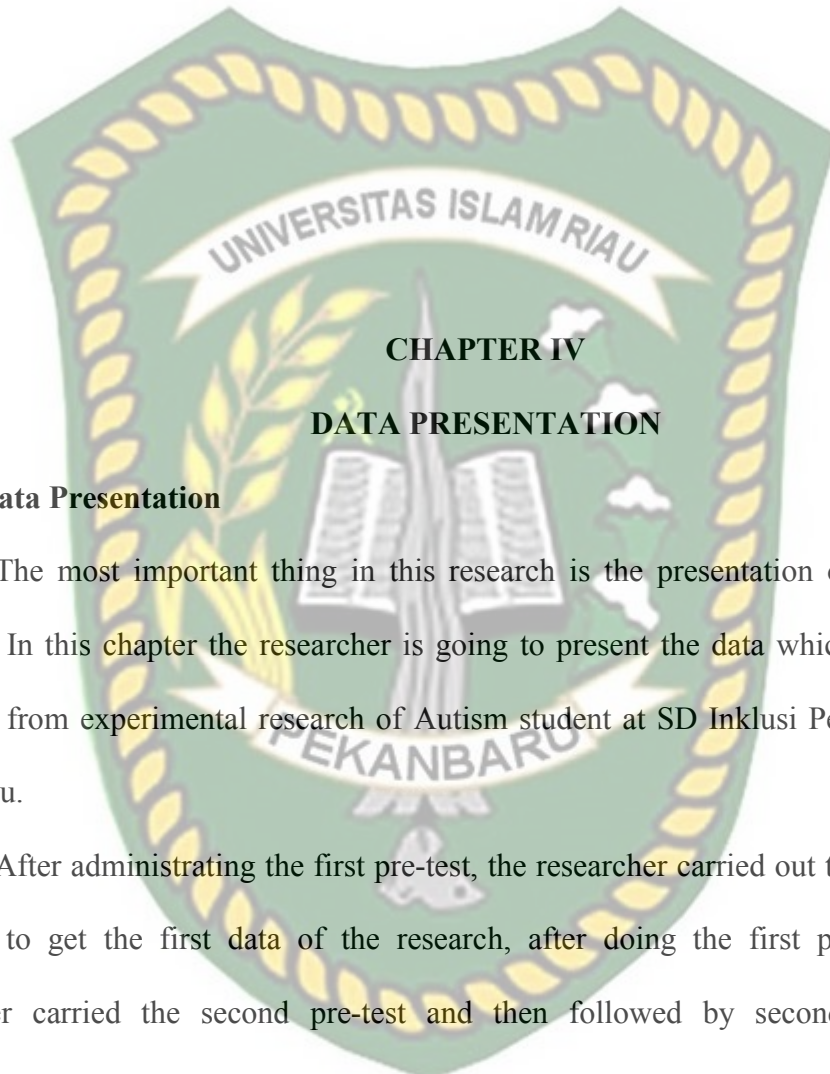
CHAPTER IV

DATA PRESENTATION

4.1   Data Presentation

The most important thing in this research is the presentation of data and research. In this chapter the researcher is going to present the data which has been collected from experimental research of Autism student at SD Inklusi Pelangi Nusa Pekanbaru.

After administrating the first pre-test, the researcher carried out the post-test in order to get the first data of the research, after doing the first post-test the researcher carried the second pre-test and then followed by second post-test. Subsequently, it will show the student's score increase from each pre-test to each post-test in order to find out whether there is a significant effect in improving vocabulary to autism student.

4.1.1   The Presentation of Data in Pre Test (Test 1)

Table 4.1 The Answers of Pre-test 1 "I Like"

Student Name	Numbers of Question				
	1	2	3	4	5
Prima Alfayet	X	X	X	**X**	X

C   Correct

X   **Incorrect**

Table 4.1 showed that 5 questions which gave by the researcher, are incorrect. Question1, the researcher showed "Banana" picture and then the student answer the question with "Pisang", because the student answer the question with "Pisang" it show that the answer is incorrect. Question 2, the researcher showed "Grape" picture and then the student answer the question with "Purple", because the student answer the question with "Purple" it show that the answer is incorrect. Question 3, the researcher showed "Orange" picture and then the student answer the question with "Apel", because the student answer the question with "Apel" it show that the answer is incorrect. Question 4, the researcher showed "Apple" picture and then the student answer the question with "Apel", because the student answer the question with "Apel" it show that the answer is incorrect. Question 5, the researcher showed "Pineapple" picture and then the student answer the question with "Nes", because the student answer the question with "Nes" it show that the answer is incorrect.

Based on the data above, it tells that the result of vocabulary knowledge of the student. These data also tells that there is no correct answer of the question that has been given by the researcher.

4.1.2 Pre Test 2 (Test 2)

Table 4.2 The Student's Answers of Pre-test 2 "I See"

Student Name	Numbers of Question				
	1	2	3	4	5
Prima Alfayet	C	X	X	X	C

C   **Correct**

X   **incorrect**

Table 4.2 showed that 5 questions which gave by the researcher, two of the questions are correct, and three of the questions are incorrect. Question1, the researcher showed "Cat" picture and then the student answer the question with "Cat", because the student answer the question with "Cat" it show that the answer is correct. Question 2, the researcher showed "Flower" picture and then the student answer the question with "Cantik", because the student answer the question with "Cantik" it show that the answer is incorrect. Question 3, the researcher showed "Bird" picture and then the student answer the question with "Bada", because the student answer the question with "Bada" it show that the answer is incorrect. Question 4, the researcher showed "Ball" picture and then the student answer the question with "Bo'la", because the student answer the question with "Bo'la" it show that the answer is incorrect. Question 5, the researcher showed "Elephant" picture and then the student answer the question with "Elephant", because the student answer the question with "Elephant" it show that the answer is correct.

Based on the data above, it tells that the result of vocabulary knowledge of the student. These data also tells that there are two correct answers of the question that has been given by the researcher.

4.1.3 The Presentation of Data in Post Test 1 (Test 3)

After giving pre-test and collect the result of student's the answers the researcher carried the treatments to student, and at the next meeting the researcher gave post-test. The researcher presented the student's vocabulary improvement on post-test as follows:

Table 4.3 The Student's Answers in Post-test 1 "I Like"

Student Name	Numbers of Question				
	1	2	3	4	5
Prima Alfayet	C	X	C	C	C

C   Correct

X   incorrect

Table 4.3 showed that 5 questions which gave by the researcher, four of the questions are correct, while one of the question are incorrect. Question1, the researcher showed "Banana" picture and then the student answer the question with "Banana", because the student answer the question with "Banana" it show that the answer is correct. Question 2, the researcher showed "Grape" picture and then the student answer the question with "Grape", because the student answer the question

with "Grape" it show that the answer is correct. Question 3, the researcher showed "Orange" picture and then the student answer the question with "Orange", because the student answer the question with "Orange" it show that the answer is correct. Question 4, the researcher showed "Apple" picture and then the student answer the question with "Apple", because the student answer the question with "Apple" it show that the answer is correct. Question 5, the researcher showed "Pineapple" picture and then the student answer the question with "Pineapple", because the student answer the question with "Pa Apple" it show that the answer is incorrect.

Based on the data above, it tells that the result of the student's vocabulary improvement. These data tells that there are four correct answers of the questions that has been given by the researcher, and also showed there are any improvement in student's English vocabulary.

4.1.4 The Presentation of Data in Post Test 2 (Test 4)

Table 4.4 The Student's Answers in Post-test 2 "I See"

Student Name	Numbers of Question				
	1	2	3	4	5
Prima Alfayet	**C**	**C**	**C**	**C**	**C**

C   Correct

X   incorrect

Table 4.4 showed that 5 questions which gave by the researcher all of the questions are correct. Question1, the researcher showed "Cat" picture and then the

student answer the question with "Cat", because the student answer the question with "Cat" it show that the answer is correct. Question 2, the researcher showed "Flower" picture and then the student answer the question with "Flower", because the student answer the question with "Flower" it show that the answer is correct. Question 3, the researcher showed "Bird" picture and then the student answer the question with "Bird", because the student answer the question with "Bird" it show that the answer is correct. Question 4, the researcher showed "Ball" picture and then the student answer the question with "Ball", because the student answer the question with "Ball" it show that the answer is correct. Question 5, the researcher showed "Elephant" picture and then the student answer the question with "Elephant", because the student answer the question with "Elephant" it show that the answer is correct.

Based on the data above, it tells that the result of student's vocabulary improvement. These data tells that the student can answer all of the questions correctly, and also showed there are any improvement in student's English vocabulary.

4.1.5 Progress (Pre Test 1 & Post Test 1)

Table 4.5 The Progress of Pre Test 1 & Post Test 1

No	Question	Pre Test	Post Test
1	What do you like?	X	**C**
2	What do you like?	X	X
3	What do you like?	X	C
4	What do you like?	X	C
5	What do you like?	X	C

Based on Table 4.5 when pre test 1 carried out to the student, the researcher write student's answer. And the researcher found that all of the question answer with incorrect answers. Then, after the researcher give the treatment to the student, and then carried the post test, the student looked happy and excited with the picture, finally the researcher found that only one question answered with the incorrect answer, and four of the question is correct.

4.1.6 progress(Pre Test 2 & Post Test 2)

Table 4.6 The progress of Pre Test 2 & Post Test 2

No	Question	Pre Test	Post Test
1	What do you see?	C	C
2	What do you see?	X	C
3	What do you see?	X	C
4	What do you see?	X	C
5	What do you see?	C	C

Based on Table 4.6 we can see that, the student also ecxited with the pictures, and when pre test 2 carried out to the student, the researcher write student's answer. And the researcher found that three of the question answer with incorrect answers and two questions is correct. Then, after the researcher give the treatment to the student, and then carried the last post test to the student, the student looked happy and excited with the picture, finally the researcher found that all question answered with the correct answer.

4.2 Hypothesis

From the data of pre test 1, post test 1, pre test 2, and post test 2, the researcher put the data on Chi Square formula, and the researcher write the result as follows:

Table 4.8 Student Score

Student Name	Pre-test 1	Post-test 1	Pre-test 2	Pro-test 2	Total (N)
Prima Alfayet	0	8	4	10	22
	0	8	4	10	22

Table 4.9 Chi Square 1 x 4

| Row	Coloum	O	E	O - E	$(O – E)^2$	$(O – E)^2/E$
1	1	0	5.5	-5.5	30.25	5.50
1	2	8	5.5	2.5	6.25	1.14
1	3	4	5.5	-1.5	2.25	0.41
1	4	10	5.5	4.5	20.25	3.68
	$^2 = \sum (O – E)^2/E$					10.73

$$E = \frac{N}{4} = \frac{22}{4} = 5.5$$

$$Df = 4 – 1$$

Table X^2 with probability 5 % = 7.81

Based on the result that showed in Table 4.8 and 4.9 above, the researcher make a chart of the pre test 1, post test 1, and pre test 2, post test 2 as follows:

Figure 4.1 The progressof The Treatment

120			
100			
80			
60			
40			
20			
0			
Pre Test 1	Post Test 1	Pre Test 2	Post test 2
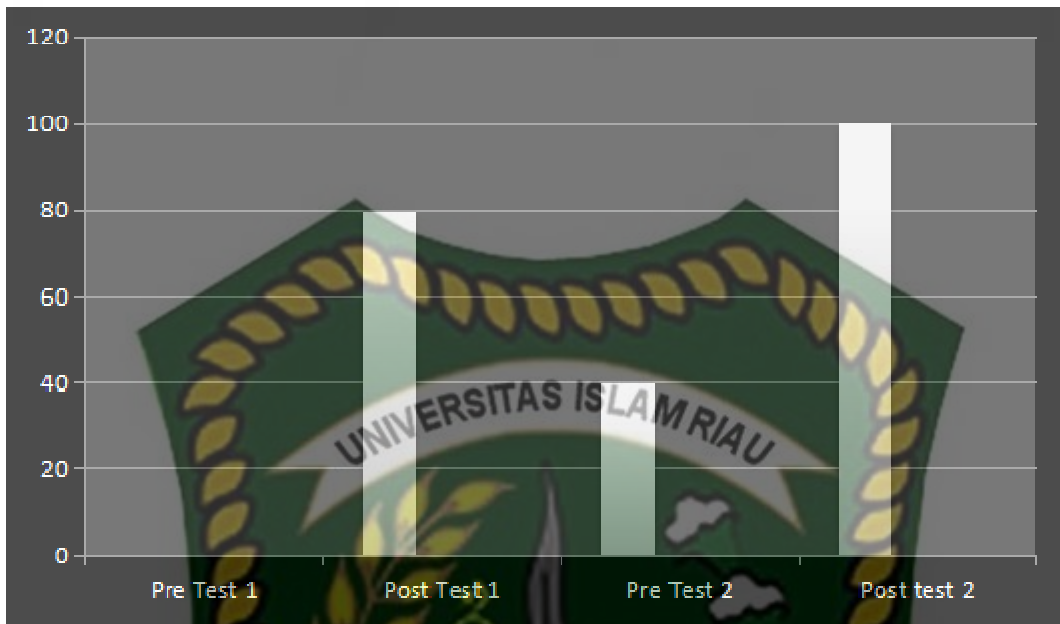
Based on figure 4.1 it showed that the result of Chi Square (10.73) is bigger than the expected probability (7.81), so Ho at probability 0.05 is rejected, and Ha is accepted. It conclude that there is a significant effect in the value progress by using PECS.

4.3 Data Interpretation

Table 4.9 Data Interpretation

No	Indicator	Pre Test 1	Pre Test 2	Post Test 1	Post Tes 2
1	Interest	0	40%	80%	100%
2	Eye contact	0	40%	80%	100%
3	Anxiety	0	40%	80%	100%

Based on the table 4.9, the writer find out that each indicator has a progress in each test. First indicator is interest, in this indicator the researcher payed attention on student's interest to PECS picture or the technique. From the data above in the test 1 there is no progress in student's answer 0%. In post test 1 afer giving PECS as the treatment, there is a progress in student's answer, the student get 40%. In pre test 2 the student get 80%, and post test 2 100%.

The second indicator is eye contact, because autism children can not make eye contact to every people or the materials that give by teacher as explained at chapter two in communication characteristics and learning characteristics. The progress of student's answer same with 0% in pre test1, in post test 1 40%, in pre test 2 80%, and in post test 2 100%.

The third indicator is anxiety. Just like the indicators above, there is no progress in pre test 1, but in post test 1 there is a progress 40%, in pre test 2 80%, and in post test 2 100%.

CHAPTER V

CONCLUSION AND SUGGESTION

5.1   Conclusion

As stated in the previous chapter, this research consist of two variable. The research is about the improvement of autism student's vocabulary in SD Inklusi Pelang Nusa by using PECS. The researcher use oral test to get the data. According to the hypothesis of the study, there is a significant improvement in vocabulary of autism student by using PECS technique, the researcher conclude the research as follows:

1. Based on the research finding, the student score in post test 1, the improvement of student's vocabulary is good than the vocabulary knowledge on pre test1 before giving the treatment.

2. The use of PECS give the positive contribution to student's vocabulary improvement.

3. The use of PECS can make the student excited in learning English in the class.

5.2   Suggestion

According of the result of this research, the researcher would like to give some suggestions to the teacher, parents and FKIP UIR especially English or Bahasa Department. The suggestion tells as follows:

For the Teacher

In teaching English subject, the teacher suggested to use PECS, because PECS can make the students understand English vocabulary not only the the name but also what is the picture looks like.

For Parents

For the parents, the researcher suggest the parents use PECS as the communication media and as the learning media even to the other subject

For FKIP UIR

For FKIP UIR especially for English or Bahasa Department the researcher suggest o open new courses that discuss how strategies or tricks for dealing with children with autism. Because as it has been taught that as a teacher we have to understand the character of our students, and did not rule out a time when one of the students of FKIP UIR would teach exceptional or special needs children in the school where where taught.

REFERENCES

Autism Spectrum Disorders *Pervasive Developmental Disorders, (* National Institutes of Health, 2004)

Bosseler Alexis and Massaro Dominic W, Development and Evaluation of a Computer-Animated Tutor for Vocabulary and Language Learning in

Children with Autism. (Department of Psychology University of California)

California Departments of Education and Developmental Services,   Autism Resources: Assessment Procedures, **(**Reinforcement Unlimited Clinical and Behavior Consultants, 1997)

Charlop Christy Marjori.H and friends,   JOURNAL OF APPLIED BEHAVIOR ANALYSIS, *Using The Picture Exchange Communication System (PECS) With Children With Autism: Assessment of PECS Acquisition, Speech, Social-Communicative Behavior, and Problem Behavior,* (Claremont College, 2002)

Luckevich Diana, Computer Assisted Instruction for Teaching Vocabulary to a Child with Autism. (Graduate School of Computer and Information Sciences Nova Southeastern University, 2008)

Ministry of Education Special Programs Branch,   *Teaching Students with Autism A Resource Guide for Schools*, (British Colombia, 2000)

Pam F. Lindsey-Glenn and James E. Gentry, Improving Vocabulary Skills Through Assistive Technology: Rick's Story. (*Volume 5, Issue 2, November 2008*)

Polles   Alesha   ,   *Turning on "the light for communication" Intervention using the Picture Exchange Communication System (PECS) for children with autism.* (Bryn Mawrt College, 2010)

Sheri Perko and T.F.McLaughlin, Autism: Characteristics, Causes And Some Educational Interventions**.** (*International Journal of Special Education 2002, Vol 17, No.2.*)