Case Study: Strategy to be developed in the classroom for a student with Autism Spectrum Disorder (ASD) through the Universal Design for Learning.
ACKNOWLEDGEMENTS

I would like to thank my family, for their support and encouraging me to keep working on despite the difficulties that have arisen lately. My father has been an important person in continuing to strive, achieve my goals, be a persevering person and overcome obstacles. I also want to highlight the importance of Valentina and teachers of the university in the creation of this project, since they have been a fundamental pillar in the construction of this project.

Lorena Escobar Garcés

I would like to thank to my family, for all their support through these years, especially to my mother who taught how to be a strong women and who gave me her unconditional love. I would also need to thank to my closest friends, whose always shared their patience and understanding with me, and who have never left me alone. Finally, my special thanks are extended to professor Angelica Inostroza and professor Flora Mandiola, for helping us when we were alone, and to Lorena who was the best partner in this chaotic journey.

Valentina Soto Verdugo
4.3 The observation

4.4 Class objective without UDL

4.4.1 First Class without UDL (First recording)

4.5 Class objective with UDL

4.5.1 First class with UDL (Second recording)

4.6 Class objective of second class with UDL

4.6.1 Second class with UDL

4.7 Results

CHAPTER 5: CONCLUSION

5.2 Discussion and limitations

References:

Appendix A

APPENDIX B

APPENDIX D
ABSTRACT

The main purpose of this research is to implement a suitable strategy to work with an Autism Spectrum Disorder learner. This strategy was based on the Universal Design for Learning (UDL). The design will contribute to teachers that are constantly failing with Autism Spectrum Disorder learners inside EFL classrooms.

The methodologies chosen by the authors of this research will be connected with the national curriculum, in which UDL is the main source when selecting a strategy.

The methodological design used was a qualitative case study.

Videos were the instruments to collect data. The participant is one student from second grade in a public school. The results show, on the one hand, the contrast related to the student's behavior in a typical EFL class and; on the other hand, two lessons applying the Universal Design for Learning (UDL). These last demonstrate that applying a strategy focused on the student's needs, helps to motivate them to participate and follow instructions in a more didactic way.

**Keywords:** Autism Spectrum Disorder, Universal Design for Learning, Behaviour.
Resumen

El objetivo principal de esta investigación es implementar una estrategia adecuada para trabajar con un alumno con Trastorno del Espectro Autista (TEA). Esta estrategia se basó en el nuevo Diseño Universal para el Aprendizaje (DUA). Este diseño ayudará a los maestros que constantemente están enfrentando las dificultades con los alumnos con TEA dentro de las aulas EFL.

Las metodologías elegidas por los autores de esta investigación están relacionadas con el plan de estudios nacional, en el que UDL es el enfoque principal al seleccionar una estrategia.

El diseño metodológico utilizado fue un estudio de caso cualitativo. Los videos fueron los instrumentos para recopilar datos. El participante es un estudiante de segundo grado en una escuela pública. Los resultados muestran, por un lado, el contraste en comportamiento del estudiante en una clase típica de EFL y; por otro lado, dos lecciones que aplican el Diseño Universal para el Aprendizaje (UDL). Estos últimos se demuestran que la aplicación de una estrategia centrada en las necesidades del alumno ayuda a motivar la participación en clases y a seguir las instrucciones de una manera más didáctica.

**Palabras clave:** Trastorno Espectro Autista, Diseño Universal para el Aprendizaje, Comportamiento.
CHAPTER 1 INTRODUCTION

In the year 2015, Chile promulgated the Inclusion Law 20.845 in order not to segregate students with any type of special needs. This law becomes of great importance and convenience to have every child at school work with others without discrimination. Nonetheless, the researchers of the present study, during their preservice teaching, observed difficulties concerning the strategies and/or lack of strategies to cope with students with special needs. Therefore, the focus of this study is on Autistic Spectrum Disorder (from now on ASD) learners inside EFL classes.

Consequently, and considering that the Chilean Ministry of Education has provided educators with a new form of planning being the Universal Design for Learning (from now on UDL), the researchers have found necessary to implement strategies based on this UDL. Because of time constraints, the researchers have opted to apply only one strategy that has to do with kinesthetic and visual activities.

The participant of this study is only one, therefore, researchers found appropriate to lead a case study with the student presenting ASD in a public school, in the region of Valparaíso, Chile.

The purpose of this study is to contribute and somehow show that the UDL is effective when applied. It is important to note that, although this study is not longitudinal, it might show some light to educators and give them some proof of its benefits.

This chapter will provide in detail the problematic situation, its justification, research question, and objectives of the research. Finally, the chapter will include the literature review in order to see what has been studied in relation to the present study.
1.1 PROBLEMATIC SITUATION

The first problem that the researchers came through during their practicums was their lack of strategies to deal with ASD students present in the Second Grade assigned to them. It was observed that the ASD learners did not follow the teachers’ instructions. Additionally, the students did not know how to work with their classmates during the lessons. In this class of 38 students, 6 were diagnosed with Autism Spectrum Disorder. Apart from this, the school itself did not provide preservice teachers with any sort of methodologies nor strategies to work with these ASD learners. Due to this problem, the investigators found necessary to research and find strategies to cope with the problem found.

1.2 JUSTIFICATION

For the reasons stated above, the researchers decided to explore and implement a suitable strategy based on the Universal Design for Learning (UDL) which could help educators to work with ASD learners.

It is the opinion of the present researchers that any concerns related to children is worthwhile investigating and thus, this study is justified as it will provide light for other teachers that may face this problem of having little or no knowledge when working with students with special needs and even more with ASD students in an EFL class.

Although there are several studies concerning ASD learners and the use of UDL (see 1.6 Literature Review), there in scarce information regarding the UDL in Chile, which as a matter of fact is just being applied in a pilot form in some schools of the country.
1.3 RESEARCH QUESTION
Having stated the problematic situation faced and the justification of the study, the researchers asked themselves many questions, but summarized them in the following:

- Is it useful for teachers to apply the Universal Design for Learning proposed by the Ministry of Education of Chile in EFL classes in order to include children with Autism Spectrum Disorder?

1.4 ASSUMPTION
- The implementation of a specific UDL strategy might improve autistic learners involvement in EFL lessons.

1.5 GENERAL OBJECTIVE
- To implement a strategy in EFL classes based on the Universal Design for Learning that could help teachers and a student with Autism Spectrum Disorder (ASD) to control his behavior during the lessons.

1.6 SPECIFIC OBJECTIVE
- To identify UDL strategies for teachers to work with a ASD student in an elementary school level.

- To select a specific strategy from the Universal Design for Learning (UDL) for an EFL class intervention with an ASD learner.

- To apply a strategy to collaborate with teachers that work with an ASD student.
1.7 LITERATURE REVIEW

There has been extensive research focusing on topics related to Autism Spectrum Disorder (ASD), providing a range of strategies for teachers that are constantly dealing with Asperger children inside the classroom. The following studies will show the importance of the integration and inclusion of children with ASD in the classroom. The present literature review considers six recent studies on the incorporation of children with Autistic Spectrum Disorder (ASD) in English language classes, taking into account the implementation of the new Universal Design for Learning (UDL) to increase methodological improvements when teaching these students. It must be said that all the four studies only provide information about several countries other than Chile. Nonetheless, these studies will provide light on the effectiveness of the inclusion of children with any Special Need.

Ali and McConkey (2018) in the study “Integration of ASD children in Schools” argue that, at least in Iran, it is impossible for children with any Special Need, to study in an educational establishment neurotypical learners and interact with them. These children, especially with ASD, must go to special schools and receive a corresponding aid from the Iranian Special Education Organization (ISEO).

1.7.1 Perspectives on Inclusive Education of Preschool Children with Autism Spectrum Disorders and Other Developmental Disabilities in Iran

According to the study done by Sayyed Ali Samadi and Roy McConkey (2018), in Iran, it is impossible for children with any Special Need, to study in an educational establishment with neurotypical learners and interact with them. These children, especially with ASD, must go to special schools and receive a corresponding aid from the Iranian Special Education Organization (ISEO). Moreover, parents in that country, are not in knowledge about what is inclusion.

Researchers chose samples in their investigation; the first one with 89 parents of children with ASD and, with the headteachers of two kindergartens. The result was that half of the parents that had ASD children were in favor of their children in attending schools with neurotypical learners. On the other hand, headteachers stated that inclusion is part of children's rights. However, educators considered inclusion as
a challenge, since teachers must have the training to deal with this group of students to help them positively in the classroom. Also, challenging the negative reactions of some parents that have their children in common schools without any disability.

The conclusion of the study states that giving efficient training for teachers would be the key to put into practice inclusion in schools. Additionally, it should change social values and understanding of different disabilities

1.7.2 Second Language Learning in Children with Autism; Plans and Strategies.

The aim of this study done by Zohre Esmaeeli, was to show the challenges teachers face with ASD children at schools. Additional to that, teachers who deal with ASD children learning dilemmas, as reading and writing, where teachers need to be aware on how to teach adequately to them. As the researcher has an ASD child, and the academic proficiency development of autism is not well known and is not used yet, she decided to find the most suitable way to teach ASD children a second language, the goal of the study was to provide strategies for language teachers who deal with ASD learners. The results of the study show that ASD children can accomplish a Second Language Acquisition. They are capable to learn vocabulary and grammar by making a friendly environment and being organized in each lesson. Also, results have indicated that bilingual children tend to have higher linguistic and cognitive abilities in language, leaning their monolingual peers.

1.7.3 Autistic Spectrum Disorders and learning foreign languages

According to an article written by Vivienne Wire, the amount of people with a diagnosis of Autistic Spectrum Disorders (ASD) increases everyday. She discusses the quality of the strategies used by teachers and she also provides five effective strategies to work with ASD children as, strategies to help the pupil with ASD in social communication which means that “has an important part to play in ‘regularising’ delivery and speech patterns of these pupils” (Wire, 2005)

Moreover, this explain the difficulties of structure and organization while learning a foreign language. Teachers must be aware about autism spectrum disorder (ASD),
because they need to know how to motivate these pupils, they need some knowledge about the issues that surround ASD learners, it is crucial to have special strategies for ASD students succeed on the acquisition of a second language, even though many teachers are worried about the lack of training because of the unknown strategies.

1.7.4 Case study (Spectrum Disorder Autistic, Disability Intellectual and Hearing loss). We learn colors

This research published by Maria de Los Angeles Cardenas in 2018 states that applying a case study to students with Special Educational Needs (SEN), such as learners with Autism Spectrum Disorder, helps to understand and solve problems within the classroom. She refers that, through interviews, observation and doing an intervention by using a didactic unit will enhance great ASD learners skills.

The investigator concludes that teachers should be aware of their clinical report, their way of learning against stimuli (since many teachers assume that the student does not like certain things, but it is the opposite) These will help to create different types of methodologies and to reflect the evolution of the student in the pedagogical area.
CHAPTER 2 THEORETICAL FRAMEWORK

It is necessary for the present study to clarify and analyse definitions and theories that will support this research. Therefore, the following sections of chapter II will provide the reader with relevant definitions such as UDL, ASD, DSM-4 etc, and the theories important to understand the implementation and analysis of this study.

2.1 ASPERGER

Hans Asperger, was a pediatric specialist from Austria and, the first person to identify young boys with social communication problems. Asperger (1944) describes some attitudes in typical boys, with normal language and intelligence, along with a low level of social interaction between their peers.

According to “A guide for young people” (2002) Asperger children are late talkers. People with this disorder, begin to reproduce some words at the age of 5 and, at the same time, they have problems to understand what is being said. This means that jokes, some words or phrases are difficult to interpret and analyzed by Aspergers people.

This disorder is also defined by authors as “A developmental disorder that affects a person’s ability to communicate and socialize with others. Symptoms vary but may include repetitive speech, behavioral rituals, difficulties with recognizing and interpreting nonverbal communication, and some motor difficulties.” (Pike, M & Gunzenhauser, K. 2013) It is also defined by specialists as “Is a previously used diagnosis on the autism spectrum. In 2013, it became part of one umbrella diagnosis of autism spectrum disorder (ASD) in the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5)” (Sohn, A & Grayson, C. 2005) Other specialists also defined Asperger as “Generalized developmental disorder (GDD) of a chronic and communicative nature and involves the qualitative alteration of social and communicative development and rigid and behavioral interests. No associated mental retardation” (Coto Montero, M (2013) Asperger Syndrome. Practice guide for intervention in the school setting.)
2.1.2 DSM-4

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is a classification system for mental disorders that provides descriptions of the diagnostic categories. Specialists and researchers in the area of health could diagnose, study, exchange information and treat different disorders. The generalized disorders of the development are divided in 5 disorders inside the DSM-4:

1. F84.0 Autistic disorder, early childhood autism, infantile autism or Kanner's autism.
2. F84.2 Rett disorder.
3. F84.3 the childhood disintegrative disorder, which are related to the loss of motor skills and speech development.
4. F84.5 Asperger's Disorder.
5. F84.9 Generalized developmental disorder unspecified, focus on delays in the development of multiple basic functions that includes socialization and communication with their peers.

According to the DSM-4 (1994), these five disorders are described under the name of disorders of onset in childhood, childhood or adolescence. Asperger's disorder could be distinguished from autistic disorder by the absence of delayed language development. Asperger's disorder seems to have a beginning somewhat later than autistic disorder, or at least it is recognized later.

2.1.3 AUTISM SPECTRUM DISORDER

In 1943, Leo Kanner an Austrian psychiatrist known for being the first to identify characteristics of a child with ASD and description of what is currently called in psychiatric clinic Autism Spectrum Disorder. He began to explore children between two and eleven years old who were exhibiting similar repetitive behaviours, low social communication in comparison with typical children and, at the same time, language use problems. Ousley and Cermak (2013) mentioned that ASD children have big difficulties concerning with “language consisting mainly of naming objects, literalness, delayed echolalia, excellent rote memory, repeating phrases with personal pronouns in the exact way heard, early concern about hearing impairment,
strong reactions to noises and moving objects, monotonous repetition of noises, motions, and verbal utterances, and limitations in the variety of spontaneous activity. (Autism Spectrum Disorder: Defining Dimensions and Subgroups by Ousley and Cermark, retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4111262/)

According to DSM-5 (2016) Autism Spectrum Disorder is defined as “People with ASD tend to have communication deficits, such as responding inappropriately in conversations, misreading nonverbal interactions, or having difficulty building friendships appropriate to their age.” (p.28-32)

Within the DSM 5, ASD is divided according to its severity:

→ 3: Requires very substantial support. This is characterized by serious deficits in the behavioral part and social communication. Severe deficits in verbal and nonverbal social communication skills. The child possesses great distress when the routine is changed.

→ 2: Requires substantial support. Language initiations are very limited. For example: the child speaks in simple sentences, whose interaction is limited to narrow special interests who has an odd nonverbal communication.

→ 1: Requires support. The person is able to say words or complete sentences and get involved in the communication, but fails to maintain it. Attempts to make friendships are peculiar and ineffective.

2.1.4 DSM-5

The number of disorders was not increased in the new DSM, but they were ordered differently. According to the Diagnostic and Statistical Manual of Mental Disorders Five (DSM-5) published in 2015, the Autistic Spectrum Disorder encompasses all generalized developmental disorders under a single diagnosis. This means that Asperger no longer exists as an individual concept, but is integrated into the characteristics of ASD. Therefore, disorders are be divided according to levels, where number three is the most critical and requires substantial support, two medium assistance, and one needs support, but is mild.
2.1.5 Multiple intelligences

According to Gardner’s theory of Multiple Intelligences (MI) where he tries to explain a large amount of people’s learning differences. Multiple Intelligences set a number of intellectual potentials. There are eight different intelligences associated to learning and, with regular interaction they will develop certain intelligences far more than others; (Gardner, 1983, p. 278)

These eight MI could be less or more developed by ASD learners. Their weakness according to Coleman is emotional intelligence, this term can be described as self-awareness, impulse control, persistence, and self-motivation, empathy and social deftness. On the other hand, one of the most developed is spatial visual intelligence which is defined by Gardner(1983) as “Good at visualizing things. These individuals are often good with directions as well as maps, charts, videos, and pictures” (retrieved from: https://www.verywellmind.com/gardners-theory-of-multiple-intelligences-2795161)

2.1.6 Inclusion Law 20.845- 83 Decree

The aim of the 83 decree is to be a resource and support for teachers on the implementation of a diversified education in the school system. According to Ainscow and Booth (Ainscow, M. y Booth, T. (1998): From them to us. Londres, Routledge, 1998), educational inclusion can be understood as the process of systematic improvement of the system and educational institutions to try to eliminate the barriers of different types that limit the presence, learning and participation of students in the life of the centers where they are schooled, with particular attention to the most vulnerable.

With this definition we can conclude the following key elements:

- Inclusion is a process, which means that it is a constant searching of research to find the most suitable ways to be aware of diversity.

- Inclusion is a presence, participation and learning from all the students, this means that a school is inclusive when it is able to welcome them taking into consideration their characteristics and context.
According to these definitions, the Ministry of Education in Chile, states that the 83 decree help to meet the needs special education that may present some students temporarily or permanently throughout of their schooling, as a result of a deficit or a specific learning difficulty, trying to give response to specific learning requirements personal or contextual, with the purpose of guaranteeing equality in the right to education”. It also describes that regular education establishments must incorporate innovations and curricular adjustments, of infrastructure and support materials needed to allow and facilitate access to courses or levels for people with disabilities existing, providing them with the additional resources they require to ensure their permanence and progress in the educational system. (Retrieved from: https://especial.mineduc.cl/wp-content/uploads/sites/31/2017/05/OrientacionesD83-Web-2017.pdf)

2.1.7 Inclusion Law- 67 Decree

67 Decree published in 2018 by the Ministry of Education in Chile, which indicates the design of quality assessment strategies aligned with a motivating and continuous learning process, promotes five criteria focused on the quality of evaluations to help students in the learning process:

1. Alignment with learning.

2. Sufficient and varied evaluative evidence.

3. Evaluation of processes, progress and achievements.

4. Evaluative situations that show the meaning and relevance of learning.

5. Diversified evaluation strategies.

As stated in the last criteria, 67 Decree seeks a “notion of differentiation of teaching and evaluation, generally referred exclusively to students with special educational needs, and diversification, which considers the diversity present in society and therefore inherent in all classrooms” (MINEDUC,2018. Retrieved from: https://www.curriculumnacional.cl/614/articles-89350_archivo_01.pdf)
2.1.8 Universal Design for Learning (U.D.L)

Inclusive Education, stands out for providing each student, independent of their special needs, with an equal education and same opportunities as the rest of their classmates especially during the lesson. In order to address this issue, the Universal Design for learning (UDL), has been implemented. This aims to provide specific educational design guidelines to ensure accessibility of all learner types to the learning environment (Baldiris Navarro, S., Zervas, P., Fabregat Gesa, R., & Sampson, D. G. 2016).

To implement this planning within the classroom, teachers should have in mind what the desired results are. UDL calls for the goal to be separate from the means for achieving it in order to allow flexibility in how the goal can be achieved. This allows the learner to employ preferred methods for accessing the curriculum (Kimberly M. Johnson-Harris & A. Mudschenk, 2014)

Kimberly M. and A. Mudschenk (2014) stated the importance of knowing the process of evaluation, and how will it be evaluated. The aim of summative and formative tests, should be directed and focused on the strength and weaknesses of children inside the classroom. UDL calls for learning activities that incorporate flexibility and support. When students can choose from a variety of learning activities, they can maximize their strengths and minimize their weaknesses, and when support is available to all students the stigma associated with specific support to some students (Scanlon and Baker 2012).

Additionally Is a teaching model that seeks to eliminate barriers to "learning to learn", considering a flexible and modifiable model that considers all students without any difference between them, enhancing the development of the skills of each of the students with the use of different strategies that points to the comprehension and learning of all and all. (Carvajal, 2015, p.3) (Jaime Carvajal, 2015, Universal Design for Learning)

In the early 90’s the Center for Applied Special Technology (CAST), a North American organization that gives financial support for organizations, government agencies and individuals, especially teachers, began to investigate and develop the principles and practice of a new Universal Design for Learning (UDL). The aim of CAST is “to explore ways of using new technologies to provide better educational
experiences to students with disabilities” (CAST, 2018, retrieved from: http://www.cast.org/about/timeline.html#.XecJPugzbIU) This means that it would help educators to implement new strategies, including curriculum planning, and useful materials for students with special needs. “CAST helps educators and learning organizations improve their understanding and implementation of UDL through workshops, institutes, and collaborations” (CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from http://udlguidelines.cast.org)

CAST divided UDL in guidelines, in which they are a tool used in the implementation of Universal Design for Learning. “These guidelines offer a set of concrete suggestions that can be applied to any discipline or domain to ensure that all learners can access and participate in meaningful, challenging learning opportunities” (CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from http://udlguidelines.cast.org)

1) Engagement: collect students interests through providing relevance to learning, emphasizing the objectives and goals according to their daily life and, at the same time, to highlight the different preferences that students have. These will help learners to be motivated and self-reflective about what they have learned, with the help of suitable feedback.

2) Representation: the information submitted must be through a format which everyone can understand. Moreover, to clarify the content and to connect them with previous knowledge.

3) Action and Expression: different technological tools or media should be applied to facilitate learning and physical interaction between students. Also, promoting a strategic plan and know how to use it in the classroom.
2.1.9 Difference between Inclusion and integration

According to Dr. Joan Jordi Muntaner (2011), inclusion and integration are often used as equal concepts that share the same meaning, especially in the educational field. However, integration was replaced since it only took into consideration people with Special Educational Needs (SEN). In contrast to Inclusion, in which the focus is not only children with SEN, but all those who are studying in the same educational establishment who should have the same opportunities.

Referring to Inclusive Education, the Ministry of Education in Chile, defined it as, “Each educational establishment in Chile promotes inclusion through educational practices that ensure access, permanence, learning and participation of all students, recognizing their diversity and favoring a pedagogical work more relevant to their identities, aptitudes, needs and real motivations” (Mineduc, 2017, Inclusion, retrieved from: http://escolar.mineduc.cl/inclusion/)

2.2.1 Autistic Disturbances of Affective Contact

Since 1938, Kanner the man who discovered ASD and followed 11 cases of children above eleven years old that presented “fascinating peculiarities”, according to him. Even though the children had different grades of disturbance and backgrounds, they shared common characteristics that he called “Syndrome”, and he realised that there could be many misdiagnosed children as feeble minded or schizophrenic. The first observable symptom was the initial infants’ lack of ability to show any reaction to physical contact with their closest family, including the anticipatory reaction when they were picking up. Eight of them learned to speak at the normal age by repeating their parents words, meanwhile three of them stayed mute till they were discovered articulating or uttering words when they were alone. However, those children who learned to speak later, began to put words together after a long time. They were excellent at memorizing names, numbers, and poems. All of them were unable to form sentences spontaneously. Other features those children shared were: food struggles, fear of loud noises and object movements (because they disturb their aloneness), monotonous repetitions of verbal utterances, obsession for all types of patterns (routines, furniture, etc.), lack of spontaneous
changes in their activity. They had a better relation with objects, including pictures of people rather than people themselves, they neither reacted to a conversation nor looked at the other's face, they reacted angrily to a physical contact or to an interference of their loneliness, and they focused only on what was producing the interference rather than in who was disturbing them. In terms of physical appearance, according to Kanner they were “essentially normal”, the only difference to other children was their face gesture as a “serious mindedness”, and their “anxious tenseness” because of the lack of interference anticipation. The most highlighting findings were their obsessive desire for loneliness, and their “unquestionable cognitive potential”

(Autistic Disturbances of Affective Contact” (1943), by Leo Kanner”. Embryo Project Encyclopedia (2014-05-23) )
CHAPTER 3 METHODOLOGICAL DESIGN

It is necessary to explain and clarify how this present research will be developed. Accordingly to the following sections of chapter three which will provide relevant information such as the type of research, the chosen participant, the instrument to collect data and how researchers proceed to analyze the data.

3.1 Type of Research

According to Creswell's research design (2003), a qualitative method is defined as a study of participants in their natural environment, where researches are instruments for collecting data, words or images, analyzes them inductively, focuses on the sense of the participant and describe a process handling expressive and persuasive language.

The definition of a case study according to Cardenas in 2018, is a “certain system, which takes note of the circumstance so naturalist, interpreting higher order interactions within data observed. The data can be generalizable, this allows readers to resemble your own case” (Aprendemos los Colores (2018) by Mª Ángeles Cárdenas Jiménez, retrieved from: https://cutt.ly/je3Tkm0 )

The present research is considered a case study because as stated in the previous investigation, according to Cárdenas Jiménez, this type of method helps to understand more in depth a particular problem, situation or individual, considering the real context. When the case is selected, researchers collect the data through the observation of this specific student in a period of time.

Case study was chosen to examine in detail a student from second grade diagnosed with Autism Spectrum Disorder. This examination will be addressed through the use of videos during the EFL lessons. Descriptive case study is considered useful in this investigation due to “this type is used to describe interventions or situations and the real-life context in which it occurred” (Catro, 2010. p.31)
3.2 Participants

The participant of this research is one specific ASD learner from second grade in a public establishment located in Valparaíso, Chile. He is eight years old, he was selected to participate in this research because investigators were in constant interaction with this ASD student and it has the highest severity according to the DSM-V (mentioned in chapter III). Also, it was possible to observe the lack of appropriate strategies to work in group with an ASD learner. Therefore, researchers decided to apply instruments during the last scholar period of this year, with tools to help both, teachers and students, to provide and receive classes according to the new Universal Learning Design (UDL)

<table>
<thead>
<tr>
<th>Name: Since we were not allow to give the name of the student. We will refer to him as student M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: 8 years old</td>
</tr>
<tr>
<td>Diagnostic: Autism Spectrum Disorder. Severity 3</td>
</tr>
<tr>
<td>Level: Second Grade</td>
</tr>
<tr>
<td>School: Public school located in Valparaíso, Chile</td>
</tr>
<tr>
<td>Age in which the student was diagnosed: 6 years old (Kindergarten)</td>
</tr>
<tr>
<td>Curriculum adaptation: The school does not have a curriculum program to work with ASD learners. However, teachers change the structure of tests, since they put an exercise on each sheet.</td>
</tr>
<tr>
<td>Treatments: Student M is treated with medications for impulse control and tantrums and is controlled in Carlos Van Buren hospital</td>
</tr>
</tbody>
</table>
EFL teachers: Lorena Escobar Garcés and Valentina Soto Verdugo

3.3 Instruments to collect data

The present investigation is defined as a qualitative method due to the instrument to gather data. Qualitative method is also described, according to Creswell (1994), "as an unfolding model that occurs in a natural setting that enables the researcher to develop a level of detail from high involvement in the actual experiences" (p. 67)

For this reason, researchers decided to record three EFL lessons with the purpose of contrasting changes behavior, either before, during and after the application of UDL.

The instrument used to collect data are:

- Videos
3.3.1 Videos

According to Willmot et al (2012) videos provide many evidences, such as, help students in their learning process while they are being recorded, learners feel that they need to do right at different activities because they have a camera in front of them. Kearney’s and colleagues says that record videos of students should allow to create new opportunities to design authentic ways of learning and to identify where the learning problems are. Furthermore, videos encourage academic rigour from an advocacy, research based perspective (Kearney y Campbell 2010; Kearney y Schuck, 2006)

As a stated in the book “Technology Integration for Meaningful Classroom Use: A Standards-Based Approach Recording” created by Katherine Cennamo, John Ross, Peggy A. Ertmer (2009) recording a class using cameras will benefit to evaluate, innovate, monitor and improve teaching practices, at the same time, it also helps to pay attention to the student’s needs. Moreover, videos show both, participation and how learners react in front of activities and lessons.

Investigators will make three recordings. The first one will be carried out during the application of the diagnostic test done in couples. The second is about the application of methods suggested by UDL during the EFL lesson and finally, recording the final lesson. This will help us to know if the strategies proposed by the Ministry of Education are suitable for the second grade in public School.

3.4 Procedure to analyze data

As the research is a case study, investigators decided to create two EFL lessons plan, which are based on UDL. The purpose of this, is to include all course integrants but focusing on one specific student with Autistic Spectrum Disorder (ASD) this is going to be done based on the characteristics that the ASD learner has, both, in the obsession that he posses, or in his type of intelligence.

Researchers will do a review of the vocabulary (Hobbies) then they start explaining the visual aids (picts) and how they work in order to understand and manage some pictures.

The daily life of an ASD child is governed by routines and clear instructions. According to Kanner (1943), ASD learners exhibit repetitive behaviors in comparison
with neurotypical children. Also, it should be taken into account that the student is characterized by being visual (based on the test made in the school by the School Integration Program (SIP). For these reasons, researchers decided to use six different pict's to improve the behavior of the student.

They are mainly focused on giving instructions, respect turns within the group and raises his hands if there is a doubt or question.

The aim of this tool is that the ASD learner will see the pics and it will repeat the desired behavior.

According to Clelia Rebolledo (2019), pict's help educators to teach in a didactic way, get the attention of students with this disorder and have a good social interaction between their classmates.

Pict's were used in order to improve the behaviour of the student. According to Kanner (1943) ASD learners exhibit repetitive behaviours in comparison with neurotypical children, for this reason researchers decided to use six different pict's which are mainly focus on giving instructions (the student should obey them), respect within the group work and raise his hands if there is a doubt or a question.

Consequently, students are going to work in couples, using the hobbies they already know and a paper that the teacher will distribute, then they will be marked doing the hobby of their partner e.g dancing position. On the third and final class using UDL researchers will review the use of the pict's and their instructions (Timing, respect, take turns) then they will watch a video that will function as a review. Later on, the teacher is going to explain the following activity, in which they will receive some legos so as they can build some sentences with Like and Don’t like (hobbies) the teacher will explain two times the same instructions they learnt last class, where they need to respect their partner’s turn, listen to each other and follow instructions. As a closure, students will form two queues the first person in the line will pick a paper from the bag (many hobbies will be written in the papers) so once they have their paper they will start doing mimics about the hobby they have, and the rest of the line will guess, they are going to apply the pict's learnt in class, to respect each others turns while they are doing the mimics and the guessings.
Furthermore, classes were recorded with and without the use of strategies based on the UDL. These three videos will be analyzed, focusing on three criteria: repetitive behaviours, how he reacts to the strategy based on UDL and how he interacts with his classmate when doing the task. Therefore, from this manner, investigators will know if the strategies with UDL were useful for ASD learners or they need to keep investigating.
CHAPTER 4: ANALYSIS AND RESULTS

In the previous chapter, the instrument to collect data was explained. In this chapter, the results and findings from three videos will be exhibited, providing shreds of evidence of the three specific objectives, which are:

A) To identify UDL strategies for teachers to work with ASD students at an elementary school level.

B) To select a specific strategy from the Universal Design for Learning (UDL) for an EFL class intervention with an ASD learner.

C) To implement a strategy to collaborate with teachers that work with an ASD student.

Another important aspect to highlight in this chapter is the clinical information of the student and the results of the Multiple Intelligences test. Without this information, teachers could not use UDL as a way to change methodologies.

Finally, it will show the behavior that the student had during the three periods of classes, either with UDL and without this design.

4.3 The observation

Based on an investigation of Cardenas (2018) the observation method “involves systematic perception and aimed at capturing most significant aspects of objects, facts, social realities and people in the context where they develop normally. Provide empirical data necessary to raise new problems, formulate hypotheses, or subsequent verification or to check a fact” (Retrieved from: https://cutt.ly/Ve3TjsJ)

This means that researchers of this investigation will capture important behaviors aspect of a learner with ASD to analyze them through videos, to record the natural environment of EFL lessons and, at the same time, generating a strategy using UDL as the main resource, building methodologies that could help teacher that are constantly dealing with these group of students.
4.4 Class objective without UDL

Students will work in groups with hobbies already learnt and will identify new hobbies through listening activities.

- **Unit:** Hobbies

- **Content:** I like / I don’t like

4.4.1 First Class without UDL (First recording)

- Student M has difficulties to work with a couple.

- He does not follow instructions by the teacher.

- He does not stay in his table.

- Student M is altered since his partner does not do things as he wants.

- He starts screaming and he stands up from his seat.

- He stands up and stays at the teacher side.

- He does not work because he does not like to work with others.

- He stands up and starts bother his classmate.

- He remains stands.

- He does a tantrum and talks with the teacher.

- He remains bothered because he does not like to work with others.

- Student M starts to cross out his worksheet because he does not understand how to share his duties with others.
4.5 Class objective with UDL

To express and interact orally in simple and common situations (speaking)

To Identifying hobbies by watching a video

- **Unit**: Hobbies

- **Content**: I like / I don’t like

PRINCIPLE 1 UDL

1.3 OFFER ALTERNATIVES FOR VISUAL INFORMATION.

PRINCIPLE 2 UDL

4.1 VARY THE METHODS FOR RESPONSE AND NAVIGATION

PRINCIPLE 3 UDL

7.3 MINIMIZE INSECURITY SENSATION AND DISTRACTIONS

4.5.1 First class with UDL (Second recording)

- Student M watch the video about hobbies in his chair without noise.

- Student M decides with who he is going to work with.

- He learns and apply picts taught by the teachers.

- He keeps applying the correct use of the picts.

- He approaches to one of teachers to say that he already understood the content of the unit, and gives an example about how he likes to prepare cookies with his mother. He shares the explanation with his classmates using mimics.

- Student M follow the instructions using picts. He understand two of them that mean “silence and hear”
He stands up and goes to help one of his classmates who does not understand the use of picts.

- When teachers explain the activity about drawing themselves on a paper, they also highlight three picts which represent the order in which each one should speak. "first" "second" last. Student M follow the instructions and he is able to work in couples, maintaining good interaction with his classmate.

- Classmate draws Student M running.

**4.6 Class objective of second class with UDL**

To apply the content of the unit by using their preferences related to hobbies.

**PRINCIPLE 1**

1.3 OFFER ALTERNATIVES FOR VISUAL INFORMATION.

**PRINCIPLE 2**

4.1 VARY THE METHODS FOR RESPONSE AND NAVIGATION

**PRINCIPLE 3**

7.3 MINIMIZE INSECURITY SENSATION AND DISTRACTIONS

**4.6.1 Second class with UDL**

- He works in calm and greeting the teacher at the beginning of the class.

- He works in a correct form in the English class, watching another video related to the Unit.

- Student gives an opinion about the video saying “She likes playing football because she likes Gary Medel”

- Student M stands up and ask to the teacher if it is right or not the use of one specific pict.
- He jumps for at least a minute and then he goes to accomplish his work.

- Student M answers when the teacher asks him “for what do we use this pict?”

- He decides to help his classmates with the use of pict.

- Students M stands in front of the class with other 4 students in order they can mimic about some hobbies, he can accomplish his duty.

- Student M writes the sentences “I like running” and paste pics above the drawing while the other students is painting.

- He presents with his partner their work in front of the class.

- He looks his classmates while he is presenting and run around the class as an explanation of the task.

- He respect turns and explain what he is doing in that painting.

- Student M hear his partner while this last, reads and explains the pict.

- Classmate of student M interrupt him, but Student M says to him “It is my turn to speak, we have to follow the images”

4.7 Results

Researchers decided to apply a specific strategy directly related to UDL and its principles. According to the national curriculum, the unit that corresponds to this period is unit 2, which is related to hobbies and likes and dislikes.

The principles used to decided the strategy were three.

Principle one: Offer alternatives for visual information. Teachers relate this principle to their class by applying different videos and presenting the pict by images on the whiteboard.

Principle two: Vary the methods for response and navigation. Teachers decided to use this principle because they will ask all of their students to work in couples in order
they can work faster and present in front of the class, something that for ASD learners it is not usual.

Principle three: Minimize insecurity sensation and distraction. This principle was chosen by teachers, because once they have to do their activity where they will marked each other student M will be marked by his classmate, so from this manner learner M will not feel exposed and will be sheltered.

Based on the theory of Multiple intelligence of Gardner and the results of the test made by the SIP of the school, researchers could notice that student M has a 60% of visual intelligence, 22.5% of auditory intelligence and a 17.5% of kinesthetic intelligence, gives the teachers the main reason to do the following activities: the use of different videos that cover auditory and visual intelligence, on the other activity, where he was marked by his partner covers all the main intelligences that learner M has.

On the other hand, based on what Kanner states on his theory of “Autistic Disturbances” (1943), ASD children are excellent at memorizing names, objects or pictures, they also suffer from different kind of obsessions from all types of patterns such as routines. (Autistic Disturbances of Affective Contact” (1943), by Leo Kanner”. Embryo Project Encyclopedia (2014-05-23))

For this reason, researchers decided to apply six picts in order to improve the behaviour of the student. Due to the fact of the obsession that this ASD learner possesses, the application of picts and activities with UDL, based on the analysis of the recordings, were helpful for this learner to repeat the instructions given by the teacher in every class that UDL was used. In contrast of a class without UDL, in which the learner suffered constant decompensations due to the lack of appropriate methodologies by teachers, along with the little respect he had when the learner was working with his classmate during the task.
CHAPTER 5: CONCLUSION

According to the previous chapter of this investigation, it can be inferred that the assumption of the research has been proven since the chosen strategy worked on a learner with ASD.

The main question of the present research was: Is it useful for teachers to apply the Universal Design for Learning proposed by the Ministry of Education of Chile in EFL classes to integrate children with Autism Spectrum Disorder?

The answer to our research question is that UDL helps teachers to innovate in a didactic way and, at the same time, integrate each learner of the classroom since this design takes into consideration the Multiple Intelligences (MI) of students.

Based on the analysis and results of the present research, we could conclude that UDL is an excellent model and tool that educators should take into consideration during their teaching process because it allows us to create new strategies such us, visual aids, kinesthetic activities or listenings exercises. Moreover, since ASD learners stand out of having some obsessions, this design is considered practical as it helps to decrease tantrums and decompensation of the learner.

Based on the comments of another English teacher who observed the three lessons, after the application of the strategy, UDL works in a positive manner and made him participate in a very active way.

Finally, general objective of this study was completely achieved by the authors, because we could implement a strategy in EFL classes based on the Universal Design for Learning that could help teachers and student with Autism Spectrum Disorder (ASD).
5.2. Discussion and limitations

Considering that researchers of this investigation applied a strategy to only one ASD learner with a severity three. A further study may be developed in a large number of students but with different types of severities (two or one) because teachers are dealing with more than four students with this disorder in the same classroom.

Also, we must take into account that each one has different characteristics and ways of learning, so the future investigation will prove the effectiveness of the Universal Design for Learning in another type of ASD.

Another topic that could be interesting to study in the future is what would happen if researchers of further investigations applied strategies based on UDL but at a higher school level? Would it be efficient to work with UDL on teenagers?

Our greatest limitations on this research were mainly the time to apply more strategies. At the beginning of this investigation, the plan was to implement more than one strategy, based on the UDL, on six students with ASD, but for reasons of national contingency and problems that Chile is experiencing, we had to apply only one strategy for one ASD learner. These situations transform our research from exploratory to be a case study.

Another limitation was the time and the same reason mentioned before, we could not apply and analyse three assessments of the unit that were planned at the beginning of this study.
References:


Hasan Al-Onizat1, S. (2016). Measurement of Multiple Intelligences among Sample of Students with Autism, and Intellectual Disability Using Teacher Estimation and Its Relationship with the Variables: The Type and Severity of Disability, Gender, Age, Type of Center. Retrieved August 24, 2019 From:  
https://pdfs.semanticscholar.org/f9ca/ce2366620f6665e0f9505c20c45ad0c98982.pdf


Appendix A: Pictures that were used in class when researchers applied the strategies with UDL.

Author: Clelia Reboredo. ASD practical guides for parents, professionals and educators.

→ This pict means that he has a doubt or that he does not understand the topic. In the class, he will need to raise his hand and point directly to the pict.

→ This pict means that the student must hear the instructions given by the teacher.
These pict were used when the ASD learner needs to work in couples.

This pict is referring to the moment when he must need to keep in silence while the teacher is explaining.
This pict is used when the learner must keep in their chairs.

APPENDIX B: Lesson plan without UDL

<table>
<thead>
<tr>
<th>Stage</th>
<th>Teacher</th>
<th>Activities</th>
<th>Ss</th>
<th>Materials</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>A.</td>
<td>The teacher will put the hello song of the unit and they will sing together. And will do a review of their previous knowledge.</td>
<td>Students will listen to the hello song of the unit and will sing along with the teacher. Later on they will listen to the teacher's review</td>
<td>Flashcards</td>
<td>10 minutes</td>
</tr>
<tr>
<td></td>
<td>B.-Body</td>
<td>The teacher will hand in the worksheet with which the Ss will identify vocabulary and content of the unit.</td>
<td>Students will receive a test in which they will be measured knowledge and their work with others.</td>
<td></td>
<td>25 minutes</td>
</tr>
<tr>
<td>B1.</td>
<td>B1.</td>
<td>The teacher will tell the Ss to open their books on page 30, where they will be asked what can they see? The teacher will encourage them to name the 4 activities they know. The teacher will let the Ss tell the new hobbies in LL. The teacher will point to the different pictures in the first activity. The teacher is going to repeat the four hobbies that they already know and the four new hobbies, and they must point to them in their Class Book. She will slowly increase the speed until they have to point very quickly. Then the procedure will change the order in which she says the hobbies.</td>
<td>Students will open their books on page 30 then they will be asked what can they see? They will be asked. They will have the possibility to answer using LL to name the new hobbies. Afterwards, they will repeat after the teacher 4 hobbies that they already know and the four new hobbies. Finally, they will hear the audio with a different speed.</td>
<td>Big Surprise 2 Page 30</td>
<td>15 minutes</td>
</tr>
<tr>
<td>B2.</td>
<td>B2.</td>
<td>The teacher will play an audio where</td>
<td>Students will hear on audio</td>
<td></td>
<td>15 minutes</td>
</tr>
</tbody>
</table>
APPENDIX C: Lesson plan with UDL

<table>
<thead>
<tr>
<th>GRADE:</th>
<th>2 BÁSICO</th>
<th>SUBJECT</th>
<th>ENGLISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACHERS</td>
<td>Valentina Soto Verdugo-Lorena Escobar Garcés</td>
<td>DIFFERENTIAL EDUCATOR</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT</th>
<th>WHAT A MESS</th>
<th>CONTENT</th>
<th>HOBBIES</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PRINCIPLES OF THE UNIVERSAL DESIGN FOR LEARNING</th>
<th>FUNDAMENTAL UNIT SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINCIPLE 1</td>
<td>Offer different options to present any type of auditory and visual information</td>
</tr>
<tr>
<td>PRINCIPLE 2</td>
<td>Provide different methods to navigate through the information and to interact with the content (search, answer, select, write)</td>
</tr>
<tr>
<td>PRINCIPLE 3</td>
<td>Create a climate of support and acceptance in the classroom, offering options that reduce levels of uncertainty and the feeling of insecurity (feedback and negative experiences), the perception of threats and distractions, and that offer different levels of sensory stimulation</td>
</tr>
</tbody>
</table>

| LEARNING OBJECTIVES | DATE | Diversified Methodological Strategies- (UDL) |
| Evaluation Indicators | | |
1) **Visual Descriptions:**

Teachers will show to students a video about a boy speaking about what does he like doing in the day. Ex: I like running

The teacher will show pics that students must follow. For example, in pics will appear a boy with his hands in his mouth, this means that students must be in silence without talking.

2) **Provide alternatives for physical interactions with materials:**

Students will work in pairs and one of them has to draw himself in a big paper and write what is she/he doing in his/her draw. Picts must be above the drawing because they are instructions for students to work in pairs and respect each other.

This last activity will be connected with the routine of each class, because next class they must remember each pics and follow them as a instruction.
1) Descriptions visuales:

Five students will go in front of the class and mimic a hobby that he or she likes doing. The rest of their classmates should guess the hobby.

2) Provide alternatives for physical interactions with materials:

Students will present the work in pairs in which one of them has to draw himself in a big paper and write what is she/he doing in his/her draw. They must present in front of the class.

3) Class routine

Variety in the pace of work, duration of sessions, breaks, etc.

Students must follow the instruction using pics as a reference.
APPENDIX D:

This is the result of the application of pictos on student M who has Autistic Spectrum Disorder (ASD).