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## PEDAGOGICAL-THERAPEUTIC MODEL TO ADDRESS SPECIAL EDUCATION IN GUATEMALA

**Eimy Ann Soto Genovese**

International Iberoamerican University (Mexico)

[sotogenoann@yahoo.com](mailto:sotogenoann@yahoo.com) · <https://orcid.org/0000-0002-5995-3928>

**Abstract.** Throughout history, the population with special educational needs has faced difficulties in social, cultural, and educational inclusion. Guatemala is not the exception for being a developing country and with great deficiencies in the attention of the educational system. Currently, there is a lack of pedagogy and didactics that solve this problem for teachers who work with students with special educational needs, just as educational centers lack training concerning special education together with therapeutic programs that provide results for people. In this investigation, the validity of the pedagogical-therapeutic model "Cetumismo" against the "Aula Recurso" program of the Ministry of Education of Guatemala was analyzed. This was done in a selected sample of teachers who work in educational centers, after answering a standardized Questionnaire to assess the quality of Special Education in educational centers through the statistical process t student according to the DSM model, where the means were compared in the two moments of evaluation, obtaining the variance. The results obtained establish that with a significance level of 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted; the reason why the comparison of the means in the statistical process carried out determines that, between both programs, the program that solves the special educational needs concerning special education is the Therapeutic Pedagogical Model "Cetumismo". The teachers evaluated despite belonging to a school that uses the "Aula Recurso" program imposed by the Guatemalan Ministry of Education, consider that a pedagogical-therapeutic model such as "Cetumismo" would bring greater benefits in the special education needs of people with disability, with specific curricular adaptations for each student, constant and updated training for teachers, a differentiated curriculum, an inclusive educational process after the scope of the competencies proposed per case.

**Keywords:** inclusion, educational psychology, special education, classroom resource,

## Introduction

The educational system in Guatemala suffers from one of the greatest deficiencies in the integral life of the country's citizens.

The General Directorate of Special Education (DIGEESP) from the Ministry of Education (2005), shows that -according to the 2002 Census XI of Population and VI of Housing of the National Statistics Institute (INE) - there are 135,482 households at least one person living with a disability. This is 6.2% of the total of Guatemalan households that make 2,200,608. On households with people with disabilities, 53.8% reside in rural areas. This data establishes the magnitude of such a problem and based on it, alternative solutions are proposed with the participation of various sectors in different fields of action.

According to CONADI in the "II National Disability Survey (ENDIS)" reports in 2006 it was established that coverage was approximately 13.660 to 15.609 special education students throughout the country and regular training for 4,988 teachers. The result shown establishes that more than 1.6 million Guatemalans suffer from some disability, statistically, that is 10.2% of the population. The information is shown in Tables 1 and 2.

Table 1

*Prevalence of disability by age and sex*

Age group	Prevalence			
	2-17 years n=5,469	18-49 years n=5,569	50 years onwards n=2,035	Total Ages n=13,072
Men n=6,033	4.9 (4.09-5.9)	6.9 (5.7-8.3)	21.5 (18.9-24.3)	8.3 (7.4-9.3)
Women n=7,039	5.7 (4.8-6.8)	12.1 (10.7-13.6)*	26.3 (23.4-29.4)*	11.8 (10.7-13.0)
All n=13,072	5.3% (4.5-6.1)	9.9% (8.8-11.1)	24.1% (21.9-26.5)	10.2% (9.3-11.2)

*Note:* retrieved from ENDIS (2016) / \* significant difference in prevalence by sex ( $p < 0.05$ )

While analyzing such results, it was established that 5.3% of children between 2 and 17 years old are suffering from some type of disability; 9.9% of young people and adults between 18 and 49 years old suffer some type of disability and people over 50 years of age, it increases by 24.1%.

Table 2

*Demographic and socioeconomic characteristics of people with or without disabilities*

	People without Disabilities	People with Disabilities	OR adjusted for Age, Sex, Religion, Socioeconomic Status
<b>Age (years)</b>			
2-4	1,038 (9%)	31 (2%)	
5-17	4,142 (35%)	258 (19%)	2.1 (1.4-3.2)
18-49	5,017 (43%)	552 (42%)	3.6 (2.4-5.5)
+ 50 years	1,545 (13%)	490 (37%)	11.3 (7.5-17.2)
<b>Gender</b>			
Men	5,534 (47%)	499 (37%)	
Women	6,207 (53%)	832 (63%)	1.5 (1.3-1.7)
<b>Region</b>			
Central	1,856 (16%)	345 (26%)	
Northeast	2,574 (22%)	166 (13%)	0.3 (0.2-0.4)
Northwest	2,249 (19%)	394 (30%)	0.9 (0.7-1.2)
Southeast	2,685 (23%)	152 (11%)	0.3 (0.2-0.3)
Southwest	2,378 (20%)	274 (21%)	0.6 (0.4-0.7)
<b>Location</b>			
Rural	7,312 (62%)	727 (55%)	1.2 (0.9-1.4)
Urban	4,430 (38%)	604 (45%)	
<b>Ethnicity</b>			
Mayan	5,359 (46%)	628 (47%)	
Latino	5,841 (50%)	662 (49%)	1.2 (1.0-1.4)
Others	136 (1%)	12 (1%)	1.5 (0.8-2.8)
Unspecified	406 (3%)	39 (3%)	1.0 (0.6-1.5)

<b>Socioeconomic status</b>			
1st.	2,587 (22%)	281 (21%)	1.5 (1.2-2.0)
2nd.	2,576 (22%)	279 (21%)	1.4 (1.1-1.7)
3rd.	2,329 (20%)	273 (21%)	1.4 (1.1-1.8)
4th.	2,217 (19%)	262 (20%)	1.2 (1.0-1.6)
5th.	2,033 (17%)	236 (18%)	
<b>Education level</b>			
None	1,330 (20%)	381 (37%)	
Primary	2,725 (42%)	453 (44%)	0.8 (0.7-1.0)
Secondary	2,146 (33%)	179 (17%)	0.5 (0.4-0.7)
University	324 (5%)	21 (2%)	0.3 (0.2-0.5)
<b>Literacy</b>			
Good	3,488 (53%)	472 (45%)	0.8 (0.6-1.0)
Less	1,602 (24%)	276 (26%)	1.0 (0.8-1.2)
None	1,472 (22%)	294 (28%)	
<b>Civil status</b>			
Married/union	4,386 (67%)	647 (62%)	
Divorce	279 (4%)	66 (6%)	1.4 (1.0-1.8)
Widows	281 (4%)	148 (14%)	1.4 (1.0-1.7)
Lived with someone	1,615 (25%)	180 (17%)	1.3 (1.1-1.6)

Note: retrieved at the End (2016) OR: Odds Ratio

According to the National Education Law (1991), in Chapter III article 47, it defines Special Education as “the educational process that involves the application of additional or complementary programs to people who have deficiencies in the development of language, intellectual, physical and sensory and/or that give evidence of superior capacity to the normal”. However, according to López (2013), none of the schools or educational centers for people with or without disabilities in Guatemala have the necessary guidelines for the creation of such programs.

Various programs have been supported by the Ministry of Education in the General Directorate of Special Education in response to the population with special educational needs in inclusive educational centers. According to Búrbano (2005) in the investigation “Current Situation of Special Education in Guatemala” these programs are detailed in Table 3:

Table 3

*Programs in response to the population with Special Educational Needs in Guatemala*

Program	Assistance Percentage
Readiness	69%
Early stimulation	45%
Special education	63%
School integration	42%
Rehabilitation Physician	21%
Language therapy	39%
Lesson Resource	24%
Integrated Classroom	36%
Occupational training	33%
Labor Insertion	24%

*Note:* retrieved from Búrbano (2005)

The percentages of the programs that are implemented in public educational centers indicate that the most common services are: preparation, special education, and early stimulation. Each of these programs is different in each educational center.

Contradictory, the bulletin of the General Directorate of Special Education (2011), indicates that under the guidelines of the Law of Special Education for People with Special Capacities, the coverage of care that the Ministry of Education is carrying out; it is through the “Resource Classroom” program that is providing coverage for approximately 13,660 to 15,609 special education students. These students have mental disabilities, physical disabilities, hearing disabilities, visual disabilities, multiple disabilities, deaf, blindness, giftedness, learning difficulties, language difficulties, and emotional difficulties throughout the country, such as seen in figure 1:

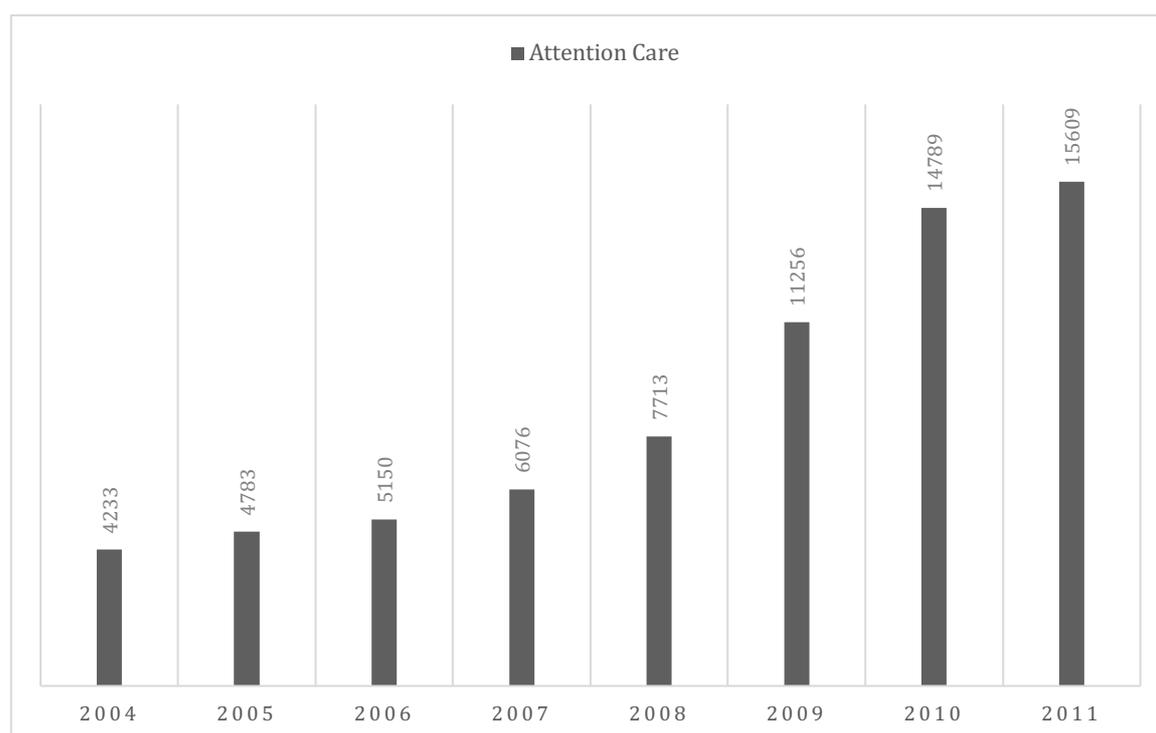


Figure 1. Population served by the Resource Classroom and Special Education Schools program in 2004-2011 (p.2). DIGEESP (2011)

According to the Ministry of Education (2017) in the SITEAL document, it indicates that of the total number of people with disabilities in the country, a 14% attends school, a 20% have attended third grade of primary school, and a 52% do not have any schooling. More than 78% of the population with disabilities receive no support and only 6% of people with disabilities know of a special education service or school.

However, according to Alvizurez (2017) in “Prensa Libre” school directors in Guatemala do not have specialized teachers and classrooms are not suitable for children with special educational needs. Currently, teachers who work with people with special needs do not have manuals or specific methodology for disability or educational need that guidelines what techniques and how to apply them as well as, strategies or pedagogical resources mentioned in the law. They only have the understanding if they have studies or a career in the area of Special Education, Psychology, or Psychopedagogy.

Currently, Guatemala has children with special educational needs, especially in public schools, so it is necessary to expand and strengthen strategies to achieve equity and equal opportunities, as a commitment to educational reform, concerning education and attention to diversity.

One of the strategies that teachers have from the Ministry of Education is the Curricular Adjustments Guide (2009) that presents curricular adjustments formats that do not recognize the special educational needs of all types of disabilities occurring in the country. They hinder school experience for all students.

In the same way, it indicates that there are 4,988 regular teachers trained in the attention of said student population. However, an educational establishment that had the “Resource Classroom” program was selected and an interview was conducted with the

Coordinator of the program. The coordinator indicated that each educational center that has implemented the Mineduc program decides what approach will be given to the cases of admitted students; and depending on the resources and knowledge of the person in charge of the program, this will be the attention that is provided to the student.

In general, the lack of attention in the education of children with disabilities is common in both the public and private sectors in Guatemala. The bulletin of the General Directorate of Special Education (2011), indicates that under the guidelines of the Law of Special Education for People with Special Capacities, the support provided by the Ministry of Education currently in the country is through the program "Resource Classroom", which in the same to "Current Situation of Special Education" report (2005) which is established as a support service that provides care for a minimum of 35 and a maximum of 45 students with special educational needs, served by short periods, in modalities of learning, language, emotional and behavioral problems.

The Ministry of Education in its supporting material for regular teachers for the care of children with special educational needs (2019) defines special educational needs as "a demand for differentiated attention and a variety of teaching-learning strategies, which are they give in the students throughout their schooling, to access learning that is determined in the curriculum corresponding to their age". So, they are an effective alternative for understanding the performance of student learning as well as the offering of educational and therapeutic services complementing the construction of diversity care.

According to the Guatemalan Ministry of Education (2017), as a diagnosis, special education in the country concludes that 89% of school buildings have architectural barriers for the population with disabilities. Also, the special educational needs most attended in the public and private sectors are learning, language, intellectual disability, and multiple disabilities. An important factor mentioned is that 66% of the teaching staff who attend special education in the public sector work with a budgeted position and 34% by annual contract.

Also, 40% of the teachers have a technical level of academic training in special education or career in order and 26% have a bachelor's level training. If the "Resource Classroom" program is a public sector program, said the study indicates that a 54% of the population with access to special education services in the private sector and a 46% the public sector, using the guides in both sectors curricula of the Ministry of Education to impart special education at the pre-primary and primary levels and to adapt them.

Our national educational curriculum is based on the Colombian models from 2005, for this study, it was considered important to include changes that Colombia has created concerning its educational system since it indirectly influences our curriculum design, which is the basis for the creation of Curricular adaptations. According to the National Administrative Department of Colombian Statistics (2005), educational inclusion requires a large number of changes in the system and in society itself. It requires a global understanding of the subject from a biopsychosocial model, in which a work of each of the citizens is proposed to build a democracy within the framework of human rights and within an open and inclusive society. To achieve this and following the ideas of Booth (2000), it is necessary to modify the culture, educational policies, and practices of educational centers and communities, institutes, universities, etc. establishing and organizing all the necessary personal, material and institutional resources in the community contexts in which they live, grow and learn.

The Declaration of Salamanca in Spain (1994), reaffirmed the total and equal right for all people within the educational system, proposing an inclusive and inclusive

perspective, as well as a rejection of educational organizations that in some way segregate and separate students either because of their cognitive conditions or because of their potential. It also established an urgent need to receive a quality education, attend regular educational centers, design and apply educational systems that ensure different characteristics and needs of the individual, and comply with the principles indicated in said declaration by international governments.

In conclusion, with Padilla (2011) teachers feel more prepared to educate students with emotional problems; however, the percentage of those who consider themselves prepared for it only reaches 45.8% and it must be taken into account that emotional problems are not considered a disability. When respondents are questioned about disabilities such as physical, mental, and sensory, less than a third of them generally feel capable of handling these students, and it is the physical disability with which they feel most familiar. When asked about students with sensory or mental disabilities, around 80% of the respondents do not feel prepared for them; and in the case of physical disability, 71.1% have the same opinion.

Therefore, didactic models must be established so that teachers can address special education. According to Mata and Arroyo (1999), through an analysis of didactic models, a global vision of the didactic process is obtained from various conceptual approaches. Specifically, in Special Education, the models derive from approaches to learning problems together with an intervention model.

When we talk about adapting teaching to children according to the Ministry of Education (2011), attending to individual differences is a topic that has always concerned professionals and teachers aware of the needs and shortcomings of the Guatemalan educational system. It is about adapting education to the individual and not the individual to education by subjecting her to a path of segregation, failure, or marginalization. What is intended is to provide the necessary conditions so that all students have a place and can receive an education that is complete and rewarding. To achieve a true adaptation of teaching, it is necessary to have all the elements that make up the subject's educational environment: the study of aptitude, attitude, motivation, social relationships, learning style and context in which the subject operates; still lack of traditional teaching methods in Guatemala.

So the objective of this study is to analyze the validity of the pedagogical-therapeutic model "Cetumismo" against the "Aula Recurso" program by teachers who work in educational centers that serve people with special educational needs in Guatemala.

Also, determine the special educational needs of the "Classroom Resource" program and the "Cetumismo" pedagogical-therapeutic model in educational centers that serve people with disabilities, identify the benefits obtained from a specialized program such as "Cetumismo" in the needs of special education for people with or without disabilities, differentiate the deficiencies of the "Classroom Resource" program that would be solved with a program like "Cetumismo".

As a hypothesis, it is established that teachers who work in educational centers that serve people with special educational needs maintain that the pedagogical-therapeutic model "Cetumismo" responds to a more explicit list of needs of people who are served by the "Resource Classroom" program".

## Method

### **Problem**

Even though Guatemala has created public special education programs and centers for the care of people with disabilities, the data obtained from the care services reflects the precarious situation in terms of care for people with or without disabilities who require special education, the question arises to create an investigation of this nature.

According to the General Directorate of Special Education in Guatemala (2008), it presents the attention provided in the programs in the following Table 4:

Table 4

*Characteristics of Attention Care in Guatemala Special Education Programs*

Integrated Classroom	Lesson Resource	Special education	Language therapy
1,242 students with deafness, mental retardation, and learning disabilities	4,344 students with learning, language, emotional and behavioral problems	1,460 students with intellectual, motor, multiple, and sensory disabilities	667 students with articulation, voice, and comprehension problems

*Note:* recovered from DIGEESP, MINEDUC (2008)

This led to the creation of the "Cetumismo" private center, which is defined as a "personalized center for integral development". This model that includes both pedagogical and therapeutic objectives seeks to centralize the processes of educational and psychological care for people with or without disabilities in Guatemala, focusing on the creation of a methodology that truly responds to the needs of students, both in the educational aspect and in the therapeutic.

### **Research Design**

For this research, an exploratory study will be carried out, which according to Sampieri (2010) aims to increase the degree of familiarity with relatively unknown phenomena, obtain more complete information, investigate problems of human behavior considering a certain area, identify promising variables and establish research priorities.

The research design was carried out evaluating utilizing a survey designed for said research, to establish the knowledge and application of special education in Guatemala and the instrument "Questionnaire to assess the quality of Special Education schools: analysis of the current situation" to the teachers who work in educational centers that serve people with special educational needs in Guatemala, who received instruction regarding the application of the "Resource Classroom" program that responds according to the objects of study of said research.

Due to the type of study, a pedagogical-therapeutic model was designed to respond as multidisciplinary care to the special educational needs of children with

disabilities; This was delivered and explained to the teachers who work in educational centers, who responded to the two different instruments evaluating whether the model meets a more explicit list of people's needs than those that are served by the "Resource Classroom" program.

The present investigation fulfills these characteristics, concerning which the data were obtained when surveying regular teachers at the national level and the programs and methods established by the Guatemalan Ministry of Education as officers for the special education process in the country were studied.

On the other hand, in this research work, a non-experimental research design was used, so it focuses on the analysis of the pedagogical-therapeutic model "Cetumism" against the "Resource Classroom" program by teachers who work in educational centers that they serve people with special educational needs in Guatemala.

The process of said investigation will be when collecting information through the designed survey and then in two variables:

- A survey is designed and 200 teachers are evaluated to know their knowledge regarding special education care in Guatemala according to the educational center where they work.
- Variable 1: the evaluation instrument "Questionnaire to assess the quality of Special Education schools: analysis of the current situation" is delivered to the teachers of the research study, who must evaluate the 200 "Resource Classroom" program.
- Following this, a presentation of the proposal of a pedagogical-therapeutic model "Cetumism" is made to the 200 teachers of the research study.
- Variable 2: the evaluation instrument "Questionnaire to assess the quality of Special Education schools: analysis of the current situation" is delivered to the 200 teachers of the research study, who must evaluate the proposal for a pedagogical-therapeutic model "Cetumism".

### ***Participants***

In this research, we had a sample of participants, which represents the educational field concerning opinions or publications that indicate the need for an educational model focused on the special educational needs of students with disabilities who are included in their classrooms both in the public and private sectors. As inclusion criteria, educational centers were sought at the national level in the capital limits of Guatemala City, which had the "Resource Classroom" program, which enrolled students with special educational needs and who maintained close supervision by the General Directorate. of Special Education of the Ministry of Education of Guatemala.

Table 5 shows information regarding the non-probability sample that was used in the investigation:

Table 5  
*Population Sample*

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Gender	
Men	87
Women	113
Total:	200
Profession / Position	
Regular teacher	122
Teacher with studies in psychology or pedagogy	71
Rotary or practicing teachers	7
Non-teacher	0
Total:	200
Establishment where you work	
Public Educational Center	102
Private Educational Center	89
Center for Cooperative	9
Total:	200
Sector where you work	
Public	111
Private	89
Total:	200

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*Note:* Author's creation

### ***Variables***

For the research process that was carried out, several variables were studied which are defined:

Study:

- Pedagogical-Therapeutic Model "Cetumism" (2014) is designed to work in groups of 5 students diagnosed by a specialized teacher, dividing it into three levels:
  - o Kiddies: students with a diagnosis that implies a greater challenge and have less or no independence
  - o Kido: students with a diagnosis that implies more personalized attention and less dependence of the adult on routines
  - o Kids: diagnosed students who benefit from personalized attention, but work independently
- The Classroom Resource Program (2008) is defined as a support service that serves a minimum of 35 and a maximum of 45 students who present a special educational need, served for short periods, in modalities of learning, language, emotional and language, and conduct problems.

Independents:

- Types of disabilities:

Acera (2015) defines the following types of disability:

- o Physical disability: it is the decrease or absence of motor or physical functions. The causes of physical disability are often congenital or from birth.

- Psychic disability: they are disorders that lead the person to not fully adapt to society.
- Sensory disability: are disorders in the sense organs. Includes vision, hearing, and language disorders.
- Intellectual or mental disability: It is a term used when a person cannot learn at expected levels and function normally in everyday life.
- Educational needs:

According to MINEDUC (2017), educational needs are defined as the demands for differentiated attention and a variety of teaching-learning strategies, which are given to students throughout their schooling, to access the learning that is determined in the curriculum according to their age. To compensate for these needs, curricular adjustments are required in various areas of the curriculum, according to the diagnosis issued by a professional.

Duk (2001) defines them as follows:

- Common or Basic Educational Needs: they refer to the educational needs that all students share and that are based on the basic learning for their personal development and socialization.
- Individual Educational Needs: these are linked to the different capacities, interests, levels, processes, rhythms, and learning styles of each student, which mediate their educational process, making them unique and unrepeatable in each case.
- Special Educational Needs: they refer to those individual educational needs that cannot be solved through the means and methodological resources that the teacher usually uses to respond to the individual differences of their students and that require to be attended to adjustments, resources, or pedagogical measures.
  - Teachers from educational centers currently working in both the public and private sectors. Teachers are divided into teachers of any academic level, whether pre-primary, primary, or diversified, who are qualified as special educators, graduates in clinical psychology, or careers in order.
  - The age of the students who are attended by the teachers cannot be controlled since the term “high and low functioning” is used in disability, which is also used when referring to autism, the following description of Gillberg (2011), indicates that the difference between the terms corresponds to the level of cognitive functioning, motor skills, language development, social skills and social understanding, and repetitive behavior patterns.
  - According to gender, such research will not segregate the study population. However, it is important to mention that the gender prevalence will be known since according to ENDIS (2016), the prevalence of people with disabilities between the ages of 5 to 17 years is 12% women, and 39% in men.
  - Data Collection Instruments are defined according to Fariñas, Gómez, and Rivero (2010), as any resource that the researcher uses to obtain phenomena and extract information. Through this instrument, the research is synthesized, summarizes the contributions of the theoretical framework, and delimits and defines the variables and concepts of study. For this research, the “Questionnaire to assess the quality of Special Education schools: analysis of the current situation” was used. This instrument consists of 40 segmented questions in 6 evaluation dimensions.

Dependents:

- Guatemala officially called the Republic of Guatemala, which is a sovereign state located in Central America with a wide indigenous culture, product of the Mayan heritage, and Castilian influence in colonial times. The current population for 2018 is 17,249,206 inhabitants; of which 2,200,608 suffer from a type of disability.
- The types of disabilities that are regularly attended in educational centers in Guatemala are intellectual, hearing, and visual disabilities, being of higher prevalence in the established order. However, Gómez (2008) presents the percentages of the types of disability seen in the United States and which we will use to compare with the data provided by ENDIS (2016) in Guatemala in Table 20 (annexes).
- Studies or qualifications of the Research teachers will not be controlled for the study, because according to the regulatory body for teachers is the General Directorate of Education (DIGEDUCA), it does not establish a job profile for the teaching position as a requirement to serve students with or without disabilities, leaving it to the discretion of each establishment.

***Research instrument***

The instrument used for this research was the questionnaire for professionals created in the research framework "Services and quality of life for people with intellectual disabilities" funded by the "Spanish Confederation of Organizations in favor of people with intellectual disabilities" (FEAPS) and in charge of the Blanquerna Faculty of Psychology and Education Sciences and Sports, at the Ramón Llull University led by a group of researchers, mainly by Giné et al. (2004) called "Questionnaire to assess the quality of Special Education schools".

The instrument was used in 2004 with the main objective of evaluating, to two educational centers in Spain, the evaluation process of the special education center according to the general model proposed in the research project, as well as the utility, relevance, and relevance of the same instruments applied for said investigation.

This instrument consists of 40 questions segmented into 6 evaluation dimensions, as shown in Table 6.

Table 6

*Dimensions and Sub dimensions of the Questionnaire for professionals*

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Dimensions

Emotional Wellbeing

Personal Development

Self-determination

Interpersonal Relationships

Social Inclusion

Rights

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### Material Prosperity

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*Note:* taken from Font, Alomar, and Mas (2004) (p.39)

According to the instrument, there is a scoring system that establishes the value to assign to each indicator and suggests Table 7:

Table 7

*Scores and response indicators*

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If this is the case, it occurs very sporadically	1 point
Sometimes, although it is not well integrated	4 points
Consistently well implemented and integrated	7 points
Not applicable	0 points

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*Note:* Author's creation

Therefore, said instrument was not adapted in terms of language or application since it fulfilled the objective of reflecting whether or not the quality and evaluation are given within a good service of attention to the population with disabilities that attends special education in Guatemala. The statements will be focused on evaluating how the pedagogical-therapeutic model "Cetumism" caters to these dimensions to the people who are served by the "Classroom Resource" program.

Due to the type of study, a pedagogical-therapeutic model was designed to respond as multidisciplinary care to the special educational needs of children with disabilities; This will be delivered and explained to the teachers of said educational establishment, who through the aforementioned instrument will respond if the model meets a more explicit list of the needs of the people who are served by the "Resource Classroom" program.

The Pedagogical-Therapeutic Model created and based on international systems of care for people with disabilities, such as "Self-contained classroom" applied in the United States, as well as pedagogies and approaches, such as Pestalozzi and Decroly, that respond to these special needs where teachers have a scientific, social, behavioral and educational support base that responds to the special educational needs of the Guatemalan population with or without disabilities.

This model responds to the need to provide both significant and non-significant curricular adaptations to students who have difficulty complying with the normal curriculum due to different situations that interfere with their learning.

The main areas of work in "Cetumism" are the special educational needs and significant curricular adaptations of the regular programs that students need, respecting their individuality. Likewise, support in skills and abilities according to your needs. Basic skills, academic skills, and interpersonal and intrapersonal skills are worked on.

To be accepted into the program, students must have a professional diagnosis related to special educational needs. This is essential since it provides an initial structure

that allows identifying the special needs that it requires to understand the capacities and dysfunctions to carry out the entry and exit profile appropriate to their potential.

### ***Data Analysis***

For this investigation, according to the study variables, and the object of study, the statistical method of student T (t-test) was chosen. Therefore, the student T-test was determined by having two mismatched or independent samples, where the variance was unequal.

For the research, the first sample was the 200 teachers who evaluated the "Classroom Resource" program, and the second sample was the same 200 teachers who evaluated the pedagogical-therapeutic model "Cetumism". It was considered of unequal variance since it is assumed that the two population variances are different, although the sample sizes are the same, so it is estimated separately.

This was graphed utilizing a two-tailed Gauss bell, wherewith a mean t Alpha mean the null hypothesis can be rejected: teachers who work in educational centers that serve people with special educational needs establish that the pedagogical model-Therapeutic "Cetumism" does not respond to a more explicit list of needs of people who are served by the "Resource Classroom" program; and accept the alternative hypothesis: teachers who work in educational centers that serve people with special educational needs establish that the pedagogical-therapeutic model "Cetumism" responds to a more explicit list of needs of the people who are served by the "Classroom" program. Resource".

Therefore, in said investigation, the procedure is as follows:

- The "Questionnaire to assess the quality of Special Education schools is reproduced: analysis of the current situation"
- They are rated and weighted according to the protocol for variable 1 and variable 2.
- The means are obtained due to data from two samples made by the same population.
- Two standard deviations are obtained, one for each mean.
- A hypothesis test is carried out to establish the final result.

### **Results**

According to the results obtained, we will segment them to the two evaluation moments. We will see the results of "Classroom Resource" and "Cetumism" by dimensions in which the questions are divided. If a comparison is made by dimension of the questionnaire, according to the positive responses obtained when evaluating the two programs, we obtain the following graphs of results:

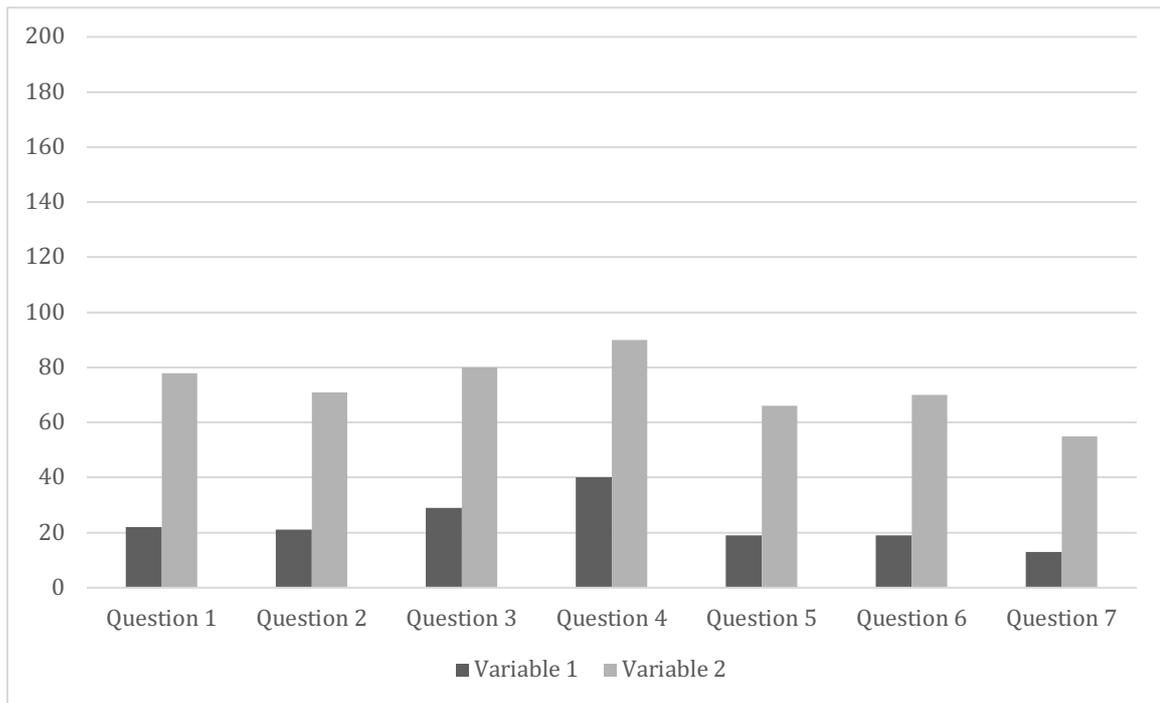


Figure 2. Emotional Wellbeing, variable 1 and variable 2

According to the answers obtained, the question with the greatest number of positive responses was question 4 in "Classroom Resource": Students follow an established and stable daily schedule or program of activities, and they are conveniently informed about it either through oral language or through alternative systems, representing 20%. And the same question for "Cetumism", representing 45%.

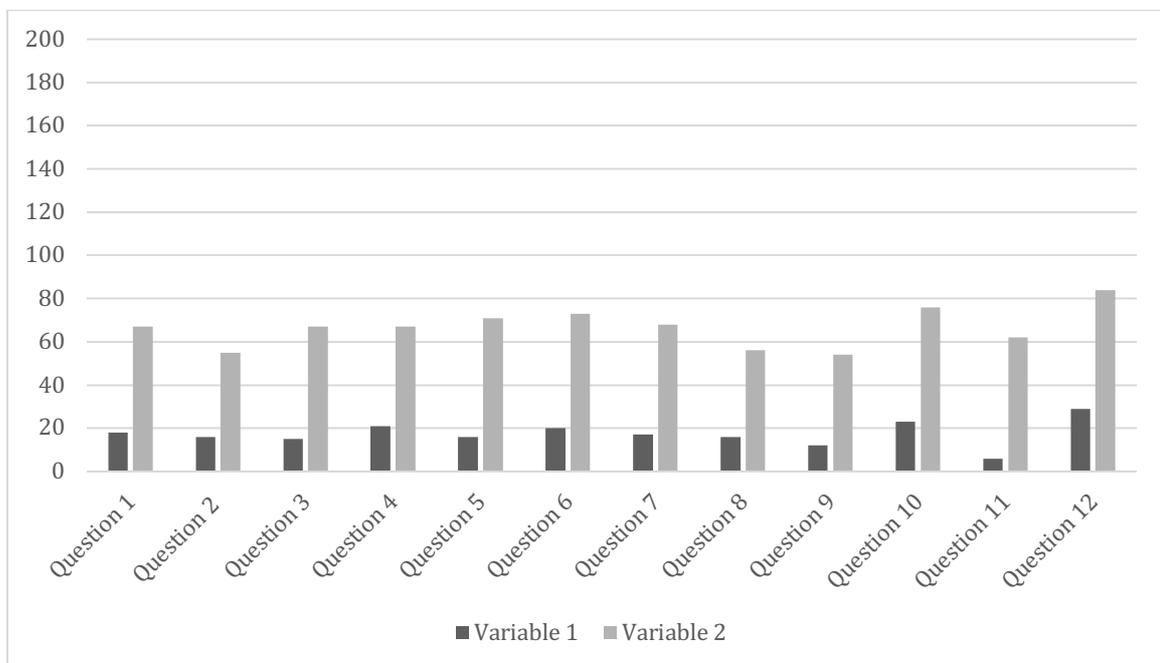
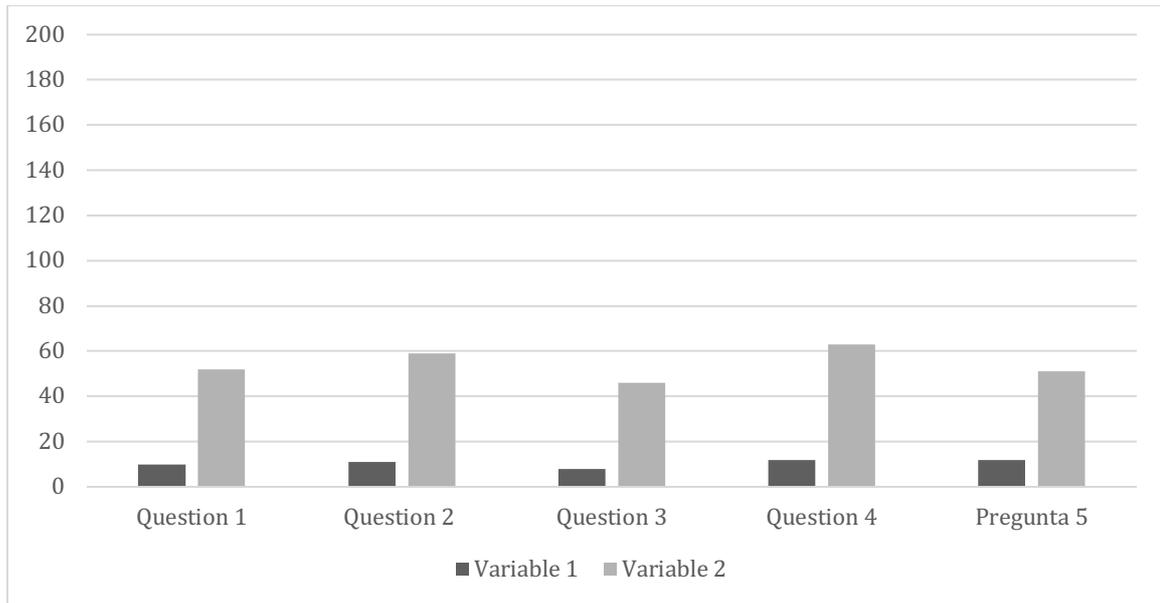


Figure 3. Personal development, variable 1 and variable 2

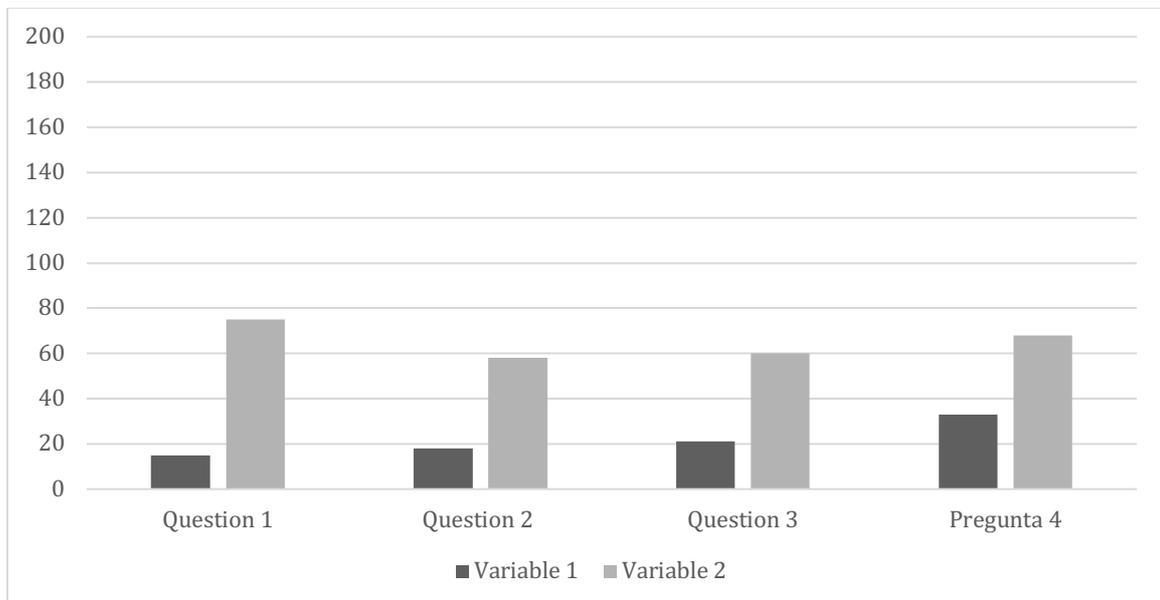
According to the results, the question that had the greatest number of positive responses was question 12 in "Classroom Resource": The center has clearly established

communication channels with parents to give as well as to request information or help or to present any complaint, representing 14.5%. And, the same question for "Cetumism", representing 42%.



*Figure 4. Self-determination, variable 1 and variable 2*

According to the results, the question that obtained the most positive responses was question 4 in “Classroom Resource”: It teaches and provides opportunities for students to make decisions, solve problems and set goals related to school activities and routines. representing 6%. This is the same question for "Cetumism", representing 31.5%.



*Figure 5. Interpersonal relationships, variable 1 and variable 2*

According to the results, the question that obtained the most positive responses was question 4 in “Classroom Resource”: Opportunities are provided for students to interact with peers of their age in their usual environments, representing 16.5%, but

according to the results of "Cetumism", the question that obtained the most positive responses was question 1: The center organizes its school hours and the different activities so that students can relate to very diverse people, that is, different professionals, teachers, support staff, students, etc., representing 37.5%.

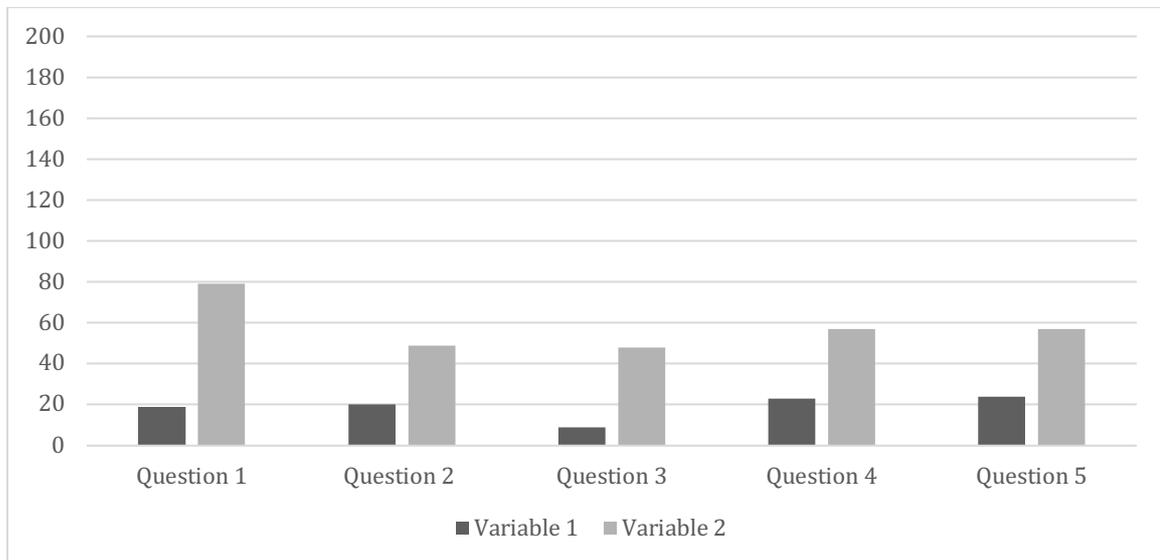


Figure 6. Social inclusion, variable 1 and variable 2

According to the answers, the question that obtained the most positive responses was question 5 in "Classroom Resource": The center promotes the participation of students in extracurricular, leisure, and free-time activities that are organized in their town, neighborhood, or city, representing 12%. And, the same question for "Cetumismo", representing 39.5%.

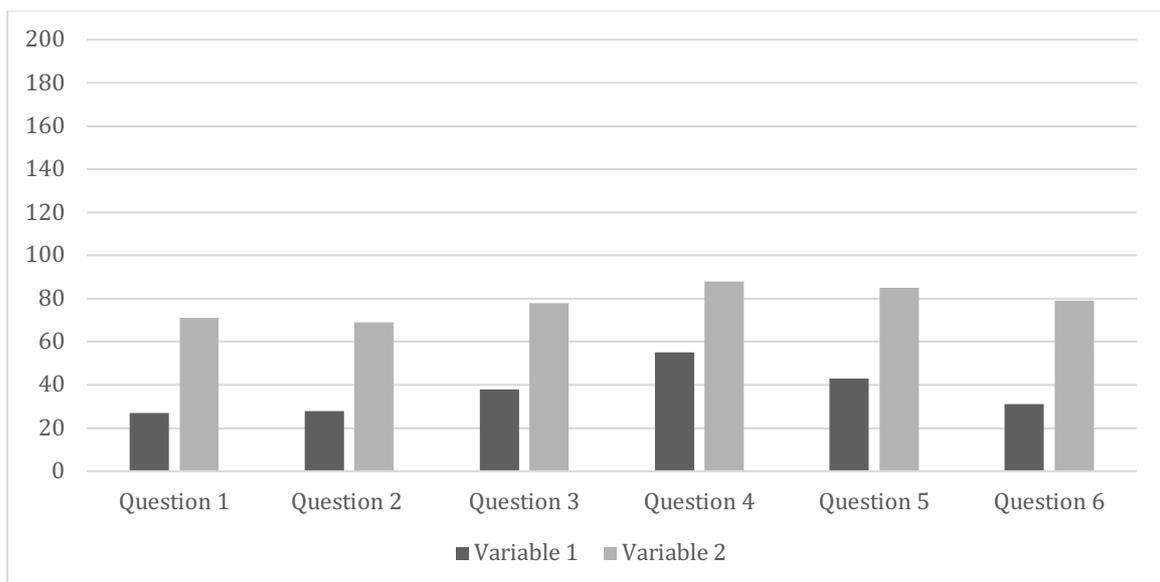


Figure .: Rights, variable 1

According to the results, the question that obtained the most positive responses was question 4 in "Classroom Resource": The school respects personal data protection

and always requests the permission of the parents and the student for the treatment of information or development. of any action that may compromise your privacy, representing 27.5%. And the same question for "Cetumismo", representing 44%.

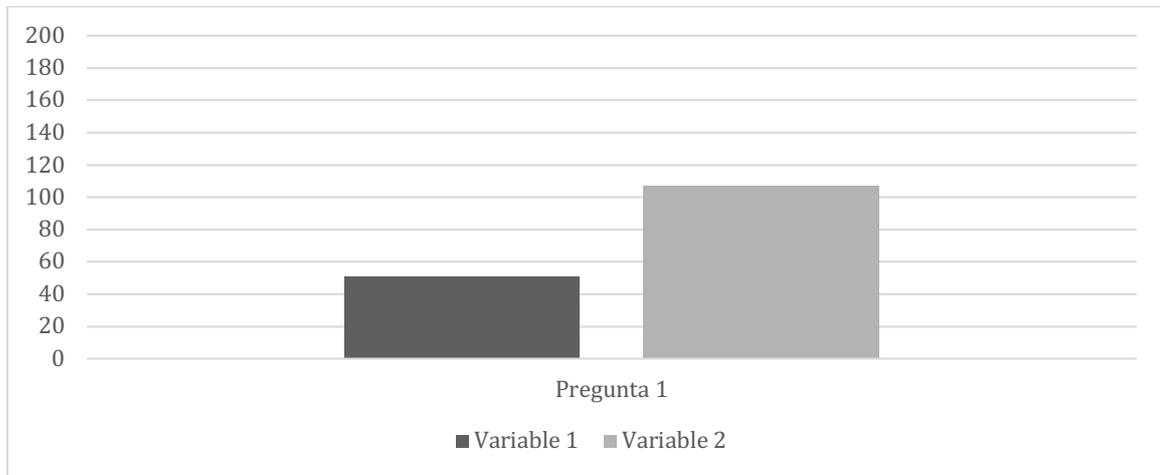


Figure 8. Material Prosperity, variable 1 and variable 2

According to the results, the question obtained 25.5% of results similar to the expected positive answer. And the same question for "Cetumismo", representing 53.5%. When making a comparison by the dimensions evaluated in the instrument for the "Resource Classroom" program and the "Cetumismo" model, the following is evident:

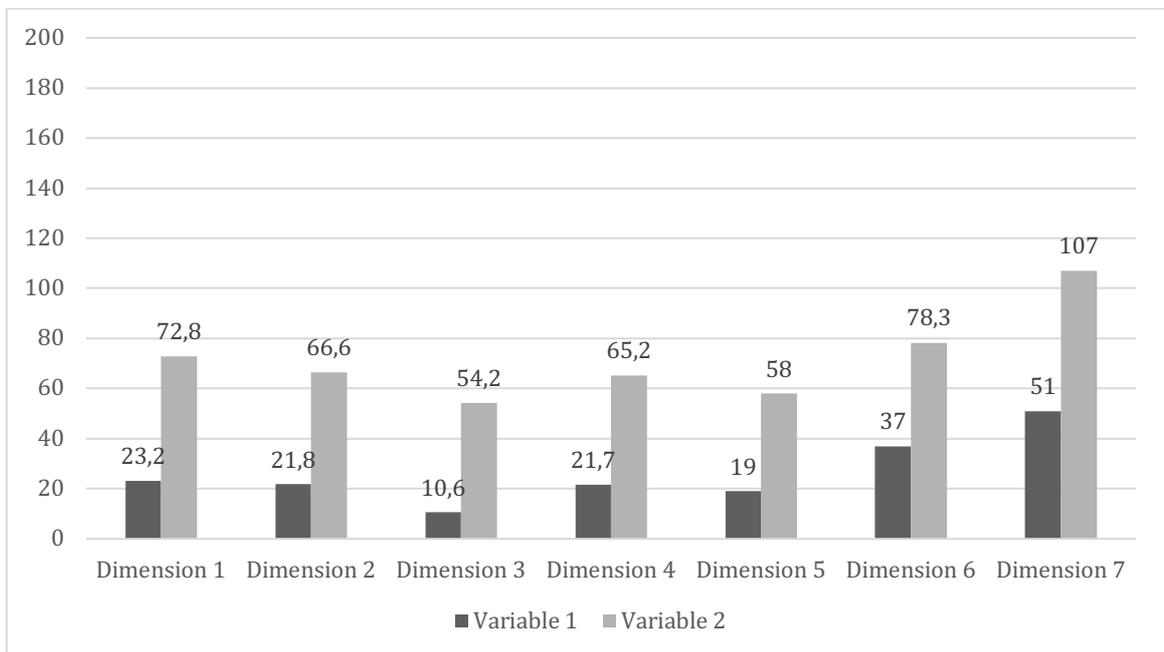


Figure 9. Comparison of dimension, variable 1 and variable 2

**Analysis of Student's t-test**

We can see globally the results obtained in both programs segmented by the sections in which the questions are grouped:

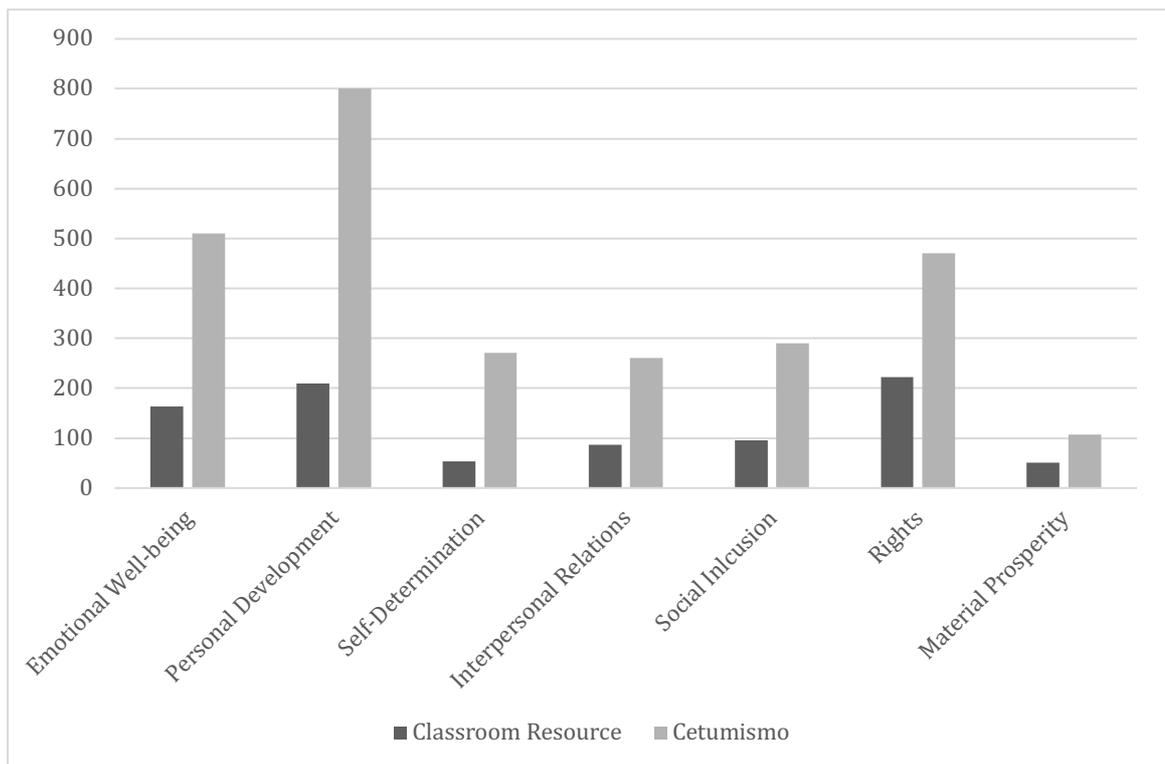


Figure 10. Overall results between both programs

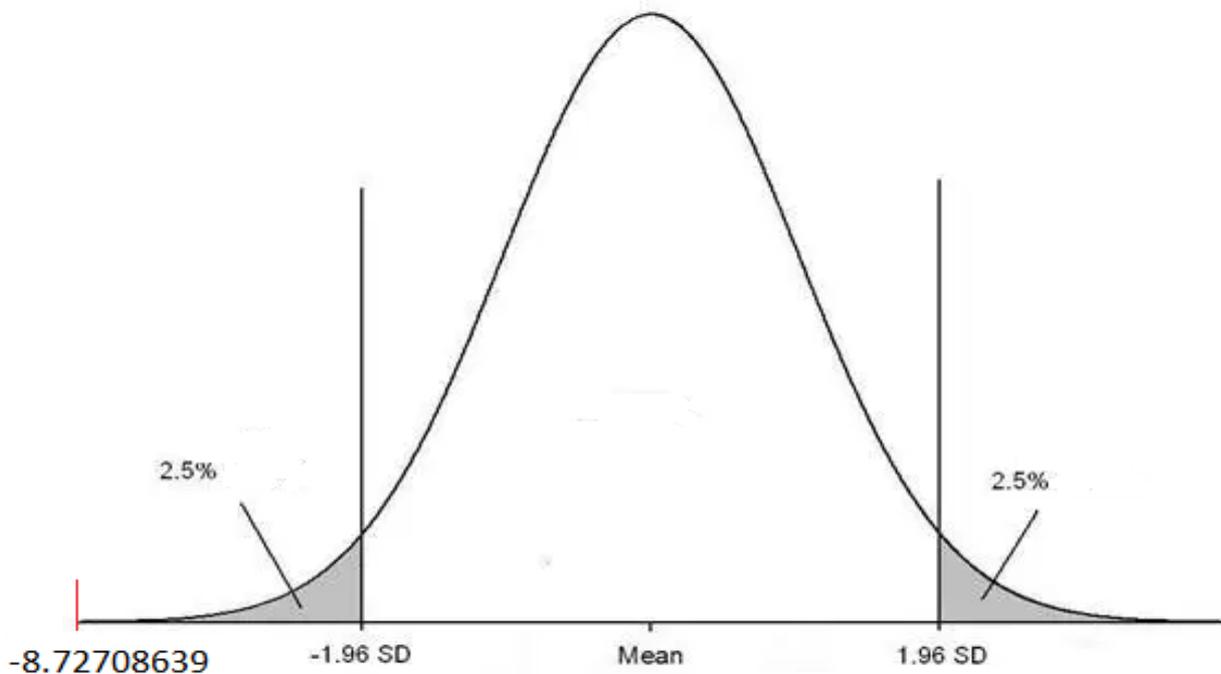
Therefore, if we perform the student's t-test, where we compare the means obtained in the two evaluation moments, we will obtain the variance, from the data in the following table 10:

Table 10  
Student's t-test for two samples of unequal variances

	Variable 1	Variable 2
Average	4.4	13.53
Variable	64.1809045	154.712663
Observations	200	200
Hypothetical difference of the means	0	
Degrees of freedom	340	
Statistical t	-8.72708639	
P(T<=t) a queue	5.9555E-17	
Critical value of t (one queue)	1.64934761	
P(T<=t) two queue	1.1911E-16	
Critical value of t (two queues)	1.96696573	

Note: Author's creation

Therefore, since the critical value at two tails is 1.9669 and a t-statistic of -8.7270, it can be established that with a mean t Alpha significance level of 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted in said investigation.



So, according to the results obtained in the comparison of the means in the statistical process carried out, it can be determined that, between both programs, “Aula Recurso” and “Cetumismo”, the program that solves special educational needs concerning education special is Therapeutic Pedagogical Model "Cetumismo”.

### **Discussion and Conclusions**

1. The general objective of this research has been to analyze the validity of the pedagogical-therapeutic model "Cetumismo" against the "Aula Recurso" program by teachers who work in educational centers that serve people with special educational needs in Guatemala.
2. With what, according to the data obtained and the selected statistical process, t student, we can indicate that the pedagogical-therapeutic model "Cetumismo" is valid against the "Aula Recurso" program of the Ministry of Education of Guatemala. These results were obtained by evaluating in two moments the teachers who work in educational centers that serve people with special educational needs in Guatemala.
3. Part of the research was to determine what special educational needs the “Resource Classroom” program responds to in educational centers that serve people with disabilities in Guatemala and what special educational needs the pedagogical-therapeutic model “Cetumism” responds to when it is designed to serve people with disabilities. disability in Guatemala.

4. Due to the questions and the segmentation by sections of the applied instrument, both programs can evaluate what special educational needs are necessary to attend according to the research variables of the applied instrument. Establishing according to the results that both programs respond to solve the educational needs in question to the Rights and Material Well-being necessary for special education in our country.

5. When establishing that both programs respond to the rights and materials for the educational process of people with disabilities, it was important to identify the benefits obtained from a specialized program such as "Cetumismo" in the special education needs of people with disabilities. According to the results, utilizing a pedagogical-therapeutic model such as "Cetumismo" the scope of care, quality of service, variety of diagnoses attended, and professionals responsible for the process would allow for a diverse and complete program of care in any educational center. Unlike the "Classroom Resource" program.

6. This led to analyze and establish the deficiencies of the "Resource Classroom" program that would be solved with a model like "Cetumism". According to the responses by section of the instrument, it can be seen from the results that the "Resource Classroom" program needs to improve in the "self-determination", "interpersonal relations" sections.

7. Compared to the information provided by the Guatemalan Ministry of Education, it is understood that the lack of methodologies and professional teachers in special education is a latent deficiency in the Guatemalan educational system. It can be considered that the infrastructural failures, lack of furniture, and absence of didactic material add to the deficiency of knowledge and updating of the General Directorate of Special Education in seeking new care strategies for the population with disabilities.

8. The "Cetumism" model, on the other hand, needs better in "Interpersonal Relations". This echoes the attitude and prejudices that the population manifests towards disability in Guatemala. The "Cetumism" model provides a quality special education, with trained and updated teachers, but the manifest difficulty is with parents who have experienced discriminatory situations and rejection of a non-cultural society.

9. As poverty and economic difficulties are one of the main factors why families do not enroll their children with disabilities in educational programs, it was necessary to identify what it implied to implement a pedagogical-therapeutic model such as "Cetumism" in centers where specific care is provided. For students with disabilities in Guatemala.

10. However, the methodology used in the design of the pedagogical-therapeutic model "Cetumismo" is based on methodologies of countries with high educational indexes and with a high level of attention to diversity. Some of them are the "Self-Contained Classroom" that defines the specialized attention service in pedagogical and therapeutic processes for groups of 5 students with special educational needs for each specialized teacher; being a marked difference with the current attention of the "Resource Classroom" program.

11. Due to the type of research study, the personal proposal is a pedagogical-therapeutic model that centralizes the processes of educational care. This model was designed to respond as multidisciplinary care to the special educational needs of

children with disabilities; This allows the contribution of adapting the multidisciplinary care of people with disabilities in Guatemala based on a pedagogical-therapeutic model based on special educational needs.

12. Therefore, for this research, the hypothesis that is fulfilled is the alternative hypothesis, since due to the results obtained, the teachers evaluated despite currently belonging to a school that uses the “Resource Classroom” program implemented by the Ministry of Education of In Guatemala, they consider that a pedagogical-therapeutic model such as “Cetumism” would bring greater benefits in the special education needs of people with disabilities, such as specific curricular adaptations for each student with a diagnosis, constant and updated training for teachers, a differentiated curriculum, process thinking about inclusion after reaching the competencies proposed per case.

13. A special education correctly implemented by the State must work with the different dimensions of students, with or without disabilities, to achieve learning. This type of learning is achieved by innovative strategies such as the “Cetumism” model, in terms of forming special curricular options that aim at adapting the National Base Curriculum as modifiable and differentiating, non-static teaching.

The Pedagogical-Therapeutic Model "Cetumism" is not only a model that responds to the care of people with disabilities and their special educational needs but also as a model of integration and social inclusion of students and the rest of society. In the recognition of diversity is the key to our Guatemalan society to improve and not segregate or classify despite our differences. We are a multilingual and multi-ethnic country that must foster cooperation and understanding, including over our shortcomings as a country.

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