

SOCIAL ATTITUDES AND INITIAL TEACHER EDUCATION FOR SPECIAL EDUCATION¹

ATTITUDES SOCIAIS E FORMAÇÃO INICIAL DE PROFESSORES PARA A EDUCAÇÃO ESPECIAL²

Josiane Pereira TORRES³
Enicéia Gonçalves MENDES⁴

ABSTRACT: This research aimed to verify if, among three themes, commonly used in teacher Education for Special Education, any would present greater potential to promote changes in social attitudes in undergraduate students. It was developed and implemented a teacher-preparation program in order to test this effect of the following themes: History, Policies and Pedagogical Practices. The training program was developed in Moodle and was divided into three units, each addressing one of the topics. Eighty-eight undergraduate students participated in the study, distributed in three Moodle rooms. The course environment was composed of three main tabs concentrating the three themes to be tested, and three separate virtual rooms were created. Each room started the course with a theme, which were addressed simultaneously and interspersed. Before and after the participation of the undergraduate students in the first unit of the course, their social attitudes were measured by Likert Scale of Social Attitudes in relation to inclusion (ELASI). By means of statistical tests, it was verified that there was no statistically significant difference in the attitudes of the students for each one of the subjects tested among the rooms, as well as intra-rooms. However, it should be considered that the majority of the students have already started the course with attitudes close to the extreme maximum of ELASI. The results suggest that the topics covered in undergraduate courses present some potential to promote changes in attitudes among undergraduates, but perhaps it is time to rethink the approach and significance given to these disciplines.

KEYWORDS: Special education. Teacher education. Social attitudes.

RESUMO: Esta pesquisa propôs-se a verificar se, dentre três temáticas, comumente usadas em formações de professores para a Educação Especial, alguma apresentaria maior potencial para promover mudanças de atitudes sociais em estudantes de licenciaturas. Foi desenvolvido e implementado um programa de formação de professores com vistas a testar esse efeito nas seguintes temáticas: História, Políticas e Práticas Pedagógicas. O programa de formação foi desenvolvido no *Moodle* e dividido em três unidades, cada uma abordando uma das temáticas. Participaram do estudo 88 estudantes de licenciaturas distribuídos em três salas do *Moodle*. O ambiente do curso foi composto por três abas principais, concentrando as três temáticas a serem testadas, e foram criadas três salas virtuais separadas. Cada sala iniciou o curso por uma temática, as quais foram abordadas simultaneamente e intercaladas. Antes e após a participação dos cursistas na primeira unidade do curso, suas atitudes sociais foram mensuradas via Escala Likert de Atitudes Sociais em relação à inclusão (ELASI). Por meio de testes estatísticos, constatou-se que não houve diferença estatisticamente significativa nas atitudes dos estudantes para cada uma das temáticas testadas entre as salas, bem como intrassalas. No entanto, há de considerar-se que a maioria dos cursistas já iniciou o curso com atitudes próximas ao extremo máximo da ELASI. Os resultados colocam para refletir que as temáticas abordadas em cursos de licenciatura apresentam certo potencial para promover mudanças de atitudes nos licenciandos, mas talvez seja o momento de repensar a abordagem e a significância dadas a essas disciplinas.

PALAVRAS-CHAVE: Educação Especial. Formação de professores. Atitudes sociais.

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³ Associate Professor at the Department of School Administration - Faculty of Education - Federal University of Minas Gerais (UFMG). jtfisica@gmail.com. Belo Horizonte/Minas Gerais/Brazil. ORCID: <https://orcid.org/0000-0002-1452-8223>

⁴ Professor at the Department of Psychology - Federal University of São Carlos (UFSCar). enicéia.mendes@gmail.com. São Carlos/São Paulo/Brazil. ORCID: <https://orcid.org/0000-0003-3673-0681>

1 INTRODUCTION

The precarious initial education of teachers to work with students of the *Target Population of Special Education* (TPSE) in regular education is a fact listed for some time by the literature of the area (Pletsch, 2009); however, it is still a current issue (Manzini, 2018). The Special Education policy has been effective from the point of view of guaranteeing TPSE students access to regular education; however, in this scenario of school inclusion, offering subsidies that strengthen the teacher's work still lacks effective results.

Only the insertion of disciplines that discuss Special Education in undergraduate programs proves to be insufficient practice, since "it may result in practices that are exactly contrary to the foundations of inclusive education: the abstract distinction between children who are able to fit into regular education and those who do not have it" (Bueno, 1998, p. 11). In addition, the literature shows that newly graduated teachers who experienced this type of discipline during graduation reveal that they feel unprepared to deal with TPSE students (Silva, Miranda, & Bordas, 2017). The issue is that

every year our universities graduate teachers who are often unaware of the fact that they will surely have TPSE students in their classes. Those teachers who are unaware of the laws and rights of these students may continue to question the presence of TPSE students at school or to make them unable to access the curriculum. They kept complaining, and rightly so, because they were not prepared to teach such students and will not be able to contribute to building a more inclusive, fairer and less unequal school. (Torres & Mendes, 2018, p. 18).

Souza (2013) found, from a careful analysis of undergraduate curricula, that the inclusion of subjects related to Special Education and/or Inclusive Education focuses preferentially on Pedagogy courses. He also noted the lack of harmony between the undergraduate curricula, since sometimes a broader general education about Special Education was prioritized, sometimes there was a priority to discuss the specificities of disabilities, characterizing it more as a technical education (Souza, 2013). This finding reveals the lack of a policy with more systematized and defined guidelines on initial teacher education for Special Education. As Miranda (2011) points out, "the implementation of an inclusive policy to ensure quality education and learning for all students implies a commitment to the training of teachers focused on this principle" (p. 137).

In addition to teacher training programs structured in the description and understanding of characteristics arising from TPSE disabilities, approaches that prioritize other strands as relevant to a formative process, such as the construction of social attitudes towards inclusion, should be considered (Omote, Oliveira, Baleotti, & Martins, 2005). This fact stands out, given that research shows that teachers who have more positive attitudes toward inclusion use more inclusive teaching strategies in their classes (Bender, Vail, & Scott, 1995). In this sense, exploring strategies whose purpose is to investigate possible interventions with the potential for change or the construction of attitudes favorable to inclusion may prove to be valid for the current scenario of teacher education (Vieira & Omote, 2017).

Social attitudes are a predisposition to action (Freedman, Carlsmith, & Sears, 1970; Rodrigues, Assmar, & Jablonski, 2010), so this justifies the fact that teachers with pro-inclusion attitudes use inclusive resources more often than those with less favorable attitudes.

National legislation provides for access to regular education by TPSE students; however, favorable attitudes towards this policy by teachers, such as acceptance and adoption of inclusive practices that effect their permanence and academic success, cannot be guaranteed either. Research has pointed towards teachers' attitudes as strong predictors of part of the successful inclusion of TPSE students (Lambe & Bones, 2006). Attitudes can be attributed as indicative of actions and behaviors, so that positive actions and behaviors will be the result of also positive attitudes. Thus, teachers' attitudes toward school inclusion can be a key factor in determining the success or failure of inclusive education.

In this context, this study aimed to: a) verify in isolation the effect of the themes History, Policies and Pedagogical Practices on the social attitudes of undergraduates in Exact Sciences through a distance education teacher training program; and b) to analyze if, among the three themes, any of them would present greater effect among the students, regarding the biggest change of social attitude.

2 METHODOLOGY

This was an experimental research with a pretest-intervention-posttest design (Campbell & Stanley, 1979). The data collection took place at the Virtual Learning Environment (VLE) through the tools and teaching methods offered by the Modular Object Oriented Dynamic Learning Environment (Moodle), which allowed the students to concentrate with the established criteria for the research. The research was approved by the Human Research Ethics Committee (CAAE 54283416.7.0000.5504, Opinion 1.540.469) and complied with the requirements of Resolution no. 466/2012 of the National Health Council.

2.1 PARTICIPANTS

Eighty-eight undergraduate students participated in the research, divided into teaching courses of Physics, Chemistry and Mathematics. The participants were selected through applications to participate in the course offered. As criteria for the selection, it was considered: teaching undergraduate students of one of the three areas of knowledge and being enrolled in the last year of the course. Table 1 shows the characterization of the participants.

Course	Sex		Average age	Other occupation		Other graduation		TPSE experience		Special Education in the Teaching degree	
	F	M		S	N	S	N	S	N	S	N
Physics (<i>n</i> =24)	16	8	27.5	13	11	2	22	6	18	18	6
Chemistry (<i>n</i> =28)	22	6	25.86	16	12	2	26	12	16	22	6
Mathematics (<i>n</i> =36)	18	18	31.36	25	11	10	26	17	19	24	12
Total (<i>n</i>=88)	56	32		54	34	14	74	35	53	64	24

Table 1. Description of the participants.

Source: The authors.

Regarding the location of participants, the highest concentration was in the state of São Paulo with 39, followed by Bahia (10), Minas Gerais (9), Mato Grosso do Sul (6), Pará (6), Rio de Janeiro (6), Espírito Santo (5), Paraná (2), Amazonas (1), Piauí (1), Goiás (1), Rio Grande do Sul (1) and Santa Catarina (1).

2.2 DATA COLLECTION INSTRUMENTS

A teacher education program was the resource used to collect data in order to achieve the purposes of the study. For that, the following instruments used were:

- *Participant characterization form*: Responsible for collecting information relevant to the characterization of the participants' profile. It was an instrument developed by the researchers and made available to participants via Google Forms.
- *Likert Scale of Social Attitudes Towards Inclusion (ELASI)*: it was an instrument for measuring social attitudes towards inclusion (Omote, 2005). It was elaborated by the research group Difference, Deviation and Stigma, of the Paulista State University "Júlio de Mesquita Filho" (UNESP), Campus Marília. ELASI is organized by two equivalent forms (Form A and Form B), each consisting of 35 items, 30 of which are responsible for measuring attitudes, and the other five make up the lie scale that acts as an indicator of reliability of the respondents' answers, as their answers are completely predictable. Among the 30 items responsible for measuring social attitudes, 15 are positive items, which indicate agreement with the statement; and the other 15 are negative items, indicating unfavorable attitudes towards inclusion. Each of the items is made up of a particular statement for which one of the answers is expected: *entirely agree*, *partially agree*, *neither agree nor disagree*, *partially disagree* and *entirely disagree*. ELASI was the instrument responsible for the measurement in this study and was sent to participants via Google Forms.
- *Questionnaire of Course Social Validation*: it was a script of questions adapted from studies already developed in the research group and was responsible for allowing an evaluation of the training process offered to participants from their perspectives. It consists of two parts, the first with 19 topics to be evaluated whose responses were Likert type with five possibilities of answers ranging from Unsatisfactory to Very satisfactory. And the second part consists of open questions for collecting feedback from the students.

2.3 INTERVENTION

To carry out the expected intervention, a full distance teacher training program was designed by Moodle, called Inclusive Exact Science Teaching. The program had a total workload of 30 hours and was composed of three modules, each with a different theme: *History*, *Policies* and *Pedagogical Practices*. Each of the topics/modules of the course contained three texts or a study guide and three activities, being a discussion forum with a guiding question/situation accompanied by a problematization that guided the discussions, as well as two other activities to be carried out according to previous guidelines defined by the researcher/teacher.

All modules were structured with materials (texts and activities) equivalent in quantity and level of difficulty, so that none stood out or interfered with the measurement performed.

Participants were divided into three groups and each enrolled in a room in which the course took place. The distribution of students in the classrooms occurred by random drawing. The objectives of the training program were:

- Lead the student to understand, debate and be aware of the history of the exclusion of differences in school.
- Provide the student with knowledge of the legal foundations of Special Education from the perspective of school inclusion in Brazil.
- Give the opportunity to develop skills and knowledge of strategies that favor participation and learning from an inclusive perspective.

The aim of the research was to verify if, in particular, any of the three themes mentioned above would be responsible for promoting greater change in social attitudes in the students. Thus, to accomplish these purposes, the experimental arrangement comprised the construction of three rooms in Moodle, all identical in content. However, they presented alternation between modules, so that each group of students could start the course by a different theme. Thus, it was possible to measure attitudes separately by theme. Table 2 shows the adopted dynamics.

	ELASI		
Room 1	Theme A	Theme B	Theme C
	ELASI		
	ELASI		
Room 2	Theme C	Theme A	Theme B
	ELASI		
	ELASI		
Room 3	Theme B	Theme C	Theme A
	ELASI		

Data collection
(three rooms simultaneously)...the course continued

Table 2. Design of the systematization of the rooms - Theme A: Policies; Theme B: History and Theme C: Pedagogical Practices.

Source: The authors.

Each tab of the course, as well as all content contained therein, was made available for access for certain periods and closed for the next tab opening. Students had free access

throughout and participated according to their own organization. All discussion forums were mediated to raise and maintain discussions among participants. After the data collection period, participants were given access to other themes.

2.4 DATA TREATMENT

The first stage of ELASI's quantitative analysis process included the assignment of numerical values to participants' responses to scale alternatives. According to the alternative selected by the participant, values were assigned: for positive items, 5 for the alternative *entirely agree*; 4 for alternative *partially agree*; 3 for alternative *neither agree nor disagree*; 2 for *partially disagree*; and 1 to *entirely disagree*. For negative items, the sense of value assignment was reversed. Excluding the lie scale scores and summing the values obtained in the positive and negative items, it was possible to obtain the total scores for each participant, which may vary in the ranges from 30 to 150. The lie scale received a specific score, being 0 for the expected answers and the value 1 otherwise. Thus, the closer to 0 the value obtained, the greater the reliability of the data for the measurement. Microsoft Office Excel programs and IBM SPSS Statistics 21 software were used for data processing and analysis, respectively. For comparative analyzes of the effect of the intervention, the so-called hypothesis tests were used (Dancey & Reidy, 2006) and the statistically significant effect was considered when $p < 0.05$.

For all data sets, the Shapiro-Wilk normality test was initially performed, in which the result directed the use of the appropriate test. For intra-room comparative analyzes, the nonparametric Wilcoxon test was used; and for the analysis between rooms, the Analysis of Variance (ANOVA), because the p value indicated that the data set presented the normal behavior. The analysis of variance made it possible to perform comparative analyzes of the performances of the three rooms and to reach the conclusion that was sought, that is, if any of the three themes tested had greater potential to promote changes in attitudes. The results obtained are presented below.

3 RESULTS AND DISCUSSIONS

In this section, we present the results and discussions obtained in the research regarding measured social attitudes and participants' performance during the intervention.

3.1 INTRA-ROOM PERFORMANCE ANALYSIS

Initially, we present the results regarding the intra-room performance analysis. The lie scale scores for the three rooms ranged from 0 to 1. Thus, this result indicated reliability in the participants' responses, since "the lower the final score, the greater the reliability of the answers given by the participant, ensuring that the task was performed with care and reliability" (Baleotti, 2006, p. 64).

Table 3 presents the descriptive results regarding the pretest and posttest participants' scores for each of the three rooms, with the last column referring to the test result comparing the pretest and posttest measures for each of the rooms.

Room - Theme	Measure	Variation (Min. – Max.)	Median	Dispersion (Q1 – Q3)	Wilcoxon test
1 – Policies (<i>n</i> =22)	Pretest	114 – 149	138	135 – 141	<i>p</i> = 0,210
	Posttest	121 – 148	140	134,5 – 143	
2 – Practices (<i>n</i> =33)	Pretest	120 – 146	137	132 – 141	<i>p</i> = 0,626
	Posttest	113 – 150	137	132 – 142	
3 – History (<i>n</i> =33)	Pretest	113 – 149	136	131 – 141	<i>p</i> = 0,322
	Posttest	107 – 150	139	133 – 144	

Table 3. Results of the pretest and posttest measurements for the three rooms and the comparative test.

Source: The authors.

Legend: Min: Minimum score; Max: Maximum score; Q1: First quartile; Q3: Third quartile.

Considering that the score of each participant could vary between 30 and 150, it can be considered that all participants already started the intervention with high scores, since it was observed that the minimum values measured were already close to the maximum possible score value for ELASI. This data indicated that the participants already had favorable social attitudes towards inclusion even before starting the training program.

A quick examination of the data in Table 2 indicated fluctuations between the score values, considering both the pretest and posttest measurements for both rooms, both positive and negative. In room 1, for example, it was noted that the minimum value of the posttest was higher than the minimum value measured in the pretest. For the posttest of this same room, a decrease of one score unit was noted.

Regarding the effect of the isolated themes (1st module of the course), although it could be noted small fluctuations in the scores measured in the posttest compared to the pretest, it was found that none of the three rooms showed statistically significant changes in the attitudes of the students, given that in all the *p* values remained greater than 0.05, considering 95% of significance. This result showed that there was no significant difference between the pretest and posttest measures for any of the rooms.

Analyzing the participants' scores individually (Figure 1), three situations were present: i) score values that were higher in the posttest compared to the pretest; ii) cases of decreased scores; and iii) cases in which there was no change in the value measured between the two tests.

Room 1 was the one with the highest number of dropouts of participants right in the first phase of the course, which comprised the period of data collection. However, it was noted that this group of participants concentrated a greater amount of increase in scores than decreases in the posttest compared to the pretest, as can be seen in Figure 1; thus, there was a higher amount of higher posttest score compared to the pretest for this room. It is worth noting that, for the most part, by qualitatively analyzing the performance of these participants, it was noted that they were people with good dedication to the course. In the total of 22 students, six had lower posttest scores compared to the pretest (decrease) and two had the same measure in both tests.

Among the students who showed a decrease in attitudes, the participant identified by number 2, who only performed one activity of the unit, corresponded to a discussion forum in which the student inserted only one post. Thus, their insufficient participation could be a justification for the considerable decrease in scores.

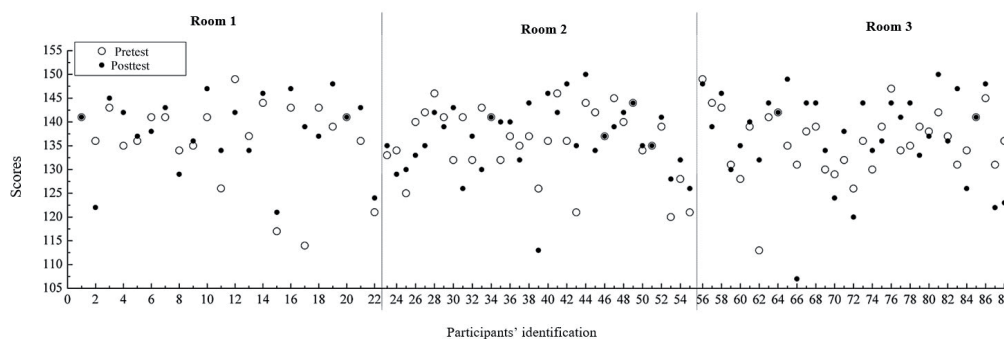


Figure 1. List of the students of the three rooms with their respective scores measured in the pretest and posttest.

Source: The authors based on research data.

Regarding the two other students who did not show changes in the score values (identified by numbers 1 and 20), it was noted that both already showed values close to the upper limit of ELASI. It is also worth mentioning that, among them, participant 1 performed well in the course, with interaction and attendance in the discussion forums and quality in the activities delivered.

In Figure 1, it was also possible to follow the distribution of the 33 participants who were enrolled in room 2 of the course, represented by their scores measured according to their identification codes. Of the 33 participants, 12 of them had a decrease in score, with the most intense cases of participant 31, with a decrease of 15 points, followed by participants 33 and 39, which presented a decrease of 13 points.

In addition to these cases of higher values of decrease, four course participants were identified who did not show changes in both measures, remaining with the same posttest score. It should be considered that such students already had scores very close to or higher than the average score for this room. Inserted in these cases, participant 49 stands out, who had an excellent performance throughout the course, always presenting reflection on the activities, punctuality and amount of participation. There are also cases of students who presented a considerable increase in score, highlighting participant 43 who had excellent interaction in the discussion forums, presenting attendance and content in the posts.

Regarding room 3, when analyzing the individual performance of the students, it was noted that 14 of them had a decrease in the values of measured scores, comparing the posttest with the pretest, consisting of almost half of the participants in the room. Among these decreases, we highlight participant 88 who presented a considerable decrease of 13 points.

This was a student who presented participation in only one activity (a discussion forum) and dropped out of the course after the first unit.

3.2 PERFORMANCE ANALYSIS BETWEEN ROOMS

Although statistical tests did not report significant intra-room difference, fluctuations in score values between rooms were noticeable. Thus, we questioned whether such fluctuations would represent significant differences in order to assert that some theme had considerable influence on the measure of participants' scores compared to another. Thus, we present next the results elaborated based on the restlessness: Did the thematic variable influence the specific performance of any room?

For these analyzes, gross scores were no longer considered, but rather the performance of each participant by their respective room. In this way, the variable went from two measures (pretest and posttest) by the difference between them, in order to provide the performance of each participant. Under this data set, normality was tested by the Shapiro-Wilk test, reporting a p value of 0.260, therefore >0.05 . The result indicated the normality behavior of the data and, thus, we proceed with the Analysis of Variance (ANOVA), whose result can be followed in Table 4.

Variation source	Sum of squares	Degrees of freedom	Medium square	F statistics	p value
Between Groups	26.212	2	13.106	0.215	0.807
In groups	5176.652	85	60.902		
Total	5202.864	87			

Table 4. Result of analysis of variance ANOVA.

Source: The authors based on research data.

The result ($F = 0.215$; $p = 0.807$) of this analysis indicated that the thematic variable did not influence the participants' performance in relation to the ELASI score, that is, there was no statistically significant difference between the performance of the three rooms. It is emphasized the need to consider that the initial values of pretest scores, that is, all were already close to the maximum possible for ELASI, so the research sample already showed indications of attitudes favorable to school inclusion.

The result presented in Table 4 made it possible to understand that, considering the context in which the research was developed (participants, strategy used, course content, etc.), the three themes tested were equivalent to each other regarding change to social attitudes. Considering that the themes tested in this study are common to be present in teacher training programs, it can be said that we are on the right track on "what to teach?". In Souza's research (2013), the themes tested are among those present in the undergraduate curricula investigated by the author, which indicated exactly this trend of the path taken to train teachers for Special Education, taking as reference "principles, concepts and conceptions of the field of special education; education policy and legal guidelines; characterization of disabilities; teacher training and practice; specialized educational service and care programs" (Souza, 2013, p. 138).

However, the issue is that, even if these themes are equivalent in the measures of social attitudes, there is still the problem of teachers who feel unprepared to work with TPSE, in addition to many classes in regular education without the adoption of inclusive practices by part of the teachers.

The results of this research corroborate the findings of Woodcock, Hemmings and Kay (2012) who, through a five-month inclusive education discipline, sought to explore the concerns and beliefs of teachers in training and how they could change through exposure to practical experiences and content related to inclusive education. The authors concluded that the results of the measurements before and after the intervention indicated that they were not significant in changing the participants' scores.

Given the duration of the training program used as an intervention, a total of 30 hours, it could be inferred that it was insufficient to bring about significant change, although it would be complex to determine what would be a more complete and considerable duration. The study by Woodcock, Hemmings and Kay (2012), for example, had a longer course than offered in this research; however, it showed similar results.

The findings of Wilkins and Nietfeld (2004) also corroborate the results of this research. The authors agree that "attitudes towards inclusion are probably quite stable beliefs that are built on numerous previous experiences rather than driven by situational factors" (p. 119) – although, among participants, most already had favorable attitudes with values close to the maximum of the scale.

Tait and Purdie (2000) also presented a study with the same purpose and with a considerable sample of 1,626 students from a university in Australia. In the study, the participants' social attitudes change was measured, whose intervention consisted of a one-year training course. According to the authors, the scores measured at the beginning of the course, when compared to those at the end of the course, were "unsuccessful in inducing desirable attitude changes" (p. 36). The authors questioned whether a longer course, for example four years, would be more successful in promoting these changes and listed "the need for researchers to assess the desirability of building into teacher training courses greater opportunity for contact between student teachers and people with disabilities" (p. 37).

With similar results, Hastings, Hewes, Lock and Witting (1996) indicated that they did not achieve attitudinal changes because the course used as an intervention did not offer participants contact with students with disabilities. In this sense, in Santana's (2013) research, among the groups of study participants, there was one in which was composed of university students whose classrooms had students with disabilities enrolled. The results showed that, in these classrooms, where students with disabilities were enrolled, the peers showed social attitudes more favorable to inclusion. Would this be an alternative for teacher training courses: to make it possible for future teachers to live with students with disabilities?

3.3 FINAL COURSE EVALUATION

The complete training program was concluded with 49 students, considering at least 75% participation in the activities. There were 16 students from class 1, 19 from class 2 and

14 from class 3. Considering the dropout rate of distance courses offered (about 50%), it was considered that there was a dropout consistent with the expected.

Graduating participants were asked to fill in a questionnaire to collect their feedback regarding the course. The following items were evaluated: i) course structure (virtual environment, duration, workload, workload and duration relationship); ii) class structure (order of activities and themes); iii) supporting material (reading time and quantity relationship, quality of information covered and clarity of content); iv) trainer (clarity in subjects, didactics and mastery in the subject); v) participation as a student (activities and study of the material); vi) relationship of the course with future teaching practice (use of activities for reflection and preparation for practice with TPSE); and vii) satisfaction with the themes and activities (topics, discussion forum and assignment).

Quantitative analysis of these items varied on a Likert scale from Very Satisfactory to *Unsatisfactory*. Overall, for all items, participants kept their ratings on the *Very Satisfactory* and *Satisfactory* items. They were critical when evaluating their participation as students and some reports indicated this dissatisfaction:

[...] I think I could have paid more attention to the course, but this semester was very busy. (Student 46, research data).

[...] I feel sorry I couldn't dedicate myself as much as I would like. (Student 54, research data).

At the end of the semester it was a little difficult to dedicate myself to the course the way I wanted. (Student 58, research data).

Regarding the evaluation of the three themes approached, it was noted a good reception of all, as in the feedback of the student 3 when referring to the theme of pedagogical practices: *The practice. As, for me, it was the last theme to be studied, I had already studied the two previous ones, the Practice happened more clearly* (Student 3, research data).

It was noticed that, individually, the themes could fulfill their goals set in the planning, as the discussion about the laws: *"The legislation allowed us to understand which way we are going"* (Student 45, research data). This was a purpose for the discussion of this theme, to show the students the path from the legal point of view that the education of TSPE students has been following.

The theme of history for which it was intended to show the historical path of exclusion until sensitizing to guarantee the right of all was corroborated by the speech of the students:

The topic on which the evolution of social perceptions about people with disabilities was worked, as I believe that history can help us understand the present day, and information about it is essential to propose actions to combat prejudice and intolerance (barriers for the maintenance of an inclusive society). (Student 47, research data).

In general, it can be verified the potentiality of these themes for the development and maintenance of training programs.

4 FINAL CONSIDERATIONS

To achieve the objectives of the research in question, a teacher training program was designed and developed in Moodle, consisting of three units, each with a theme, namely: History, Policies, Pedagogical Practices. In an attempt to analyze the effects of the themes in isolation on social attitudes, the same course was built in three Moodle classrooms with the scrambled themes and each with a group of students. Each group of students started the course with a theme and their attitudes were measured through ELASI, before and after attending this first unit.

In intra-room analyzes, the Wilcoxon test was applied to verify if there was a statistically significant difference between the pretest and posttest measurements for each room. Although fluctuations in the score could be noticed, the test showed that none of the three rooms presented statistically significant changes in the attitudes of the students.

The second analysis presented concerns the comparison of performance between the three rooms in order to verify if any, in particular, presented more significant changes. By means of ANOVA, it was reported that this statistically significant difference could not be claimed either. Therefore, for the research context, the three themes were equivalent.

Although no specific theme had a greater effect on participants' attitudes, qualitatively there was one theme that showed the potential to motivate the students more: pedagogical practices. Positive feedback from students revealed that the activities included in this theme were the most interesting of the course. In this context, it is assumed that this is a theme with greater potential for engagement and motivation, as long as it is thought of as the ideal design to promote changes in attitude through this type of content. In this sense, although there is a recurring demand from teachers for specific practices directed to the determined types of students, it is recommended that the contents of the training courses avoid addressing, in a light and stereotyped way, studies of the categories and how to teach these individuals with certain disabilities, since generalizations from labels may be inadequate to think about individuality and diversity of students at the same time.

In general, there has been resistance to inserting in the teacher training recipe proposals on how to teach or to give training only the instrumentalization from the perspective of the so-called technical rationality, but would prioritizing only the theory or the foundations of inclusive education in fact be the best way? Would it not be possible to approach, in a training, the pedagogical aspects involved in inclusive education critically? How to bring this approach to teaching undergraduate degrees while avoiding the view that there are recipes for inclusive education?

Annually, teachers graduate in the various areas of knowledge who, when in service, encounter students of TPSE and soon arise complaints about the lack of preparation to deal with these students. It turns out that teacher education courses have not provided the understanding that "working with diversity is intrinsic to the nature of teaching performance and that it makes no sense to think of it as an exceptional condition" (Freitas, 2006, p. 170).

Any teaching degree, whether in Exact Sciences or any other Science, that commits itself to training teachers with the least preparation to work from an inclusive perspective needs

to include in its course design elements that support this purpose. Principles which should be contemplated from the objectives that outline the purposes of the course and not only in offering isolated subjects just to comply with laws, reinforcing the idea that Special Education is a separate field from the others. It is worth adding that the university has a fundamental role in the education of subjects with attitudes and practices that respect and value the diversity posed by contemporaneity (Glat & Pletsch, 2004) and who have skills to “build teaching strategies and adapt activities and content that enable all students to learn and develop” (Glat & Pletsch, 2004, p. 349).

It is understood that “training should provide content related to the characterization of learning conditions rather than disability conditions” (Rodrigues, 2014, p. 16), so that the skills of the TSPE student are more considered in their process than their limitations.

The National Policy provides for the training of teachers who will act in common classes that include special education content appropriate to the development of skills and values to:

I – realize the special educational needs of students and value inclusive education; II - make the pedagogical action in the different areas of knowledge more flexible, in a way that suits the special learning needs; III - continually evaluate the effectiveness of the educational process in meeting special educational needs; IV - act as a team, including teachers specializing in special education. (Resolution no. 2, February 11, 2001, p. 5).

However, in addition to not yet being shown effective, there is no clarity as to what this training should be about in relation to content and approaches. Finally, as the problems seem not to be exhausted when it comes to education, a prior and significantly relevant problem of teacher education to be considered is the precariousness of national basic education. The offer of more physical and human support services may contribute to the teacher’s work at school, as mentioned by Avramidis and Norwich (2002), as one variable that significantly affects teachers’ attitudes is the precariousness of the school environment, regarding support for work from an inclusive perspective. Thus, there is a need to, in addition to investigating appropriate teacher training, ensure that the necessary support, whether human or material, will be present at school.

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