Preliminary Indicators of the Use of Lesson Study as a Teaching Practice Capable of Enabling an Inclusive Perspective in Higher Education[1]

Indicadores Preliminares do Uso da Lesson Study Como Prática de Ensino Capaz de Viabilizar uma Perspectiva Inclusiva na Educação Superior

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ABSTRACT: This study approached the Lesson Study strategy as a support for planning academic activities of teachers who intend to adopt or contribute to the adoption of an inclusive perspective in Higher Education. The general objective of this study was to describe preliminary indicators of the use of the Lesson Study as a teaching practice capable of enabling an inclusive perspective, in the context of Higher Education. Specifically, we aim to: a) identify strategies by student with and without markers (social, linguistic, ethnic, neuromotor, among others) as suggestions for the teaching-learning process with an inclusive perspective, and b) compare these strategies and discuss them from the point of view of the teaching practice aspects tested in this analysis. With a predominantly qualitative approach, this research was characterized as descriptive and the investigation instruments used for data collection consisted of interviews, observation and field notes. Three university professors and a group of twelve students, four of them with markers (social, linguistic, ethnic, neuromotor, among others), and eight of them without any makers participated in this analysis. The results allowed to highlight four specific indicators of the Lesson Study and 26 types of strategies indicated by the students (with and without markers) as suggestions for support during teaching practices. It was observed that those provided by students without markers did not differ much from those presented by the students with markers, except in specific situations, such as those pointed out by the deaf student. The obtained data contributed to the discussions on the existing policies and guidelines generated in the University itself and, in particular, the analysis provided professional improvement of the involved professors, in addition to the indication of possibilities of this improvement in relation to the other professors who are concerned with the adoption of actions with inclusive education perspectives.

KEYWORDS: Special Education. Higher Education. Students. School inclusion. Lesson Study.

RESUMO: Este estudo abordou a estratégia de estudos de aula (*Lesson Study*) como suporte para o planejamento de atividades acadêmicas de professores que pretendem adotar ou contribuir para a adoção de uma perspectiva inclusiva na Educação Superior. O objetivo geral deste estudo foi descrever indicadores preliminares do uso da *Lesson Study* como prática de ensino capaz de viabilizar uma perspectiva inclusiva, no contexto da Educação Superior. De maneira específica, objetivamos: a) identificar estratégias de estudantes com e sem marcadores (sociais, linguísticos, étnicos, neuromotores, dentre outros) como sugestões para o processo de ensino-aprendizagem com perspectiva inclusiva; e b) comparar essas estratégias e discuti-las do ponto de vista de aspectos da prática de ensino testada nessa análise. Com abordagem predominantemente qualitativa, essa pesquisa se caracterizou pelo tipo descritivo e os instrumentos de investigação utilizados para a coleta de dados consistiram em entrevistas, observação e anotações de campo. Participaram dessa análise três professoras universitárias e um grupo de doze estudantes, sendo quatro deles com marcadores (sociais, linguísticos, étnicos, neuromotores, dentre outros) e oito sem. Os resultados permitiram destacar quatro indicadores específicos da *Lesson Study* e 26 tipos de estratégias indicadas pelos alunos (com e sem marcadores) como sugestões para suporte durante as práticas de ensino. Foi possível observar que aquelas fornecidas pelos estudantes sem marcadores não diferiram muito daquelas apresentadas pelos estudantes com marcadores, exceto em situações específicas, tais como as apontadas pelo discente com surdez. Os dados obtidos permitiram fazer alusões às políticas e orientações existentes e geradas na própria Universidade e, de modo particular, a análise proporcionou o aprimoramento profissional das professoras envolvidas, assim como indicou possibilidades desse aprimoramento em relação aos outros docentes que possuem uma preocupação com a adoção de ações com perspectivas de ensino inclusivo.

PALAVRAS-CHAVE: Educação Especial. Ensino Superior. Alunos. Inclusão escolar. *Lesson Study*.

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1 Introduction

The paradigm of Inclusive Education has gained relevance in the last decades in international movements driven by the fundamental right that all have right to Education, in all its schooling levels and stages. Despite the existing difficulties in education systems, in general, this paradigm has provided unquestioned advances for education democratization, as it has allowed to aim, even in a restricted level of public policies, at the minimum conditions required for quality education for all. Undoubtedly, the greatest challenge at the moment is to ensure the right for education for all is respected in everyday practice.

In the context of Special Education, Souza and Pletsch (2017), when analyzing the guidelines of the United Nations System and the implementation of Inclusive Education policies in the Member States, highlight that the fulfillment of this fundamental right is key to a country's development and, above all, to eradication of poverty. Certainly, this idea is what originated the perspective of Inclusive Education in the Brazilian National Plan of Education. Specifically, in Brazil, Inclusive Education is identified in Goal 4 of the National Plan of Education.

> Goal 4: universalize, for the population from four (4) to 17 (seventeen) years old with disabilities, global developmental disorders and high skills or giftedness, access to basic education and to specialized education service, preferably in the regular education system, with the guarantee of an inclusive educational system, with multifunctional resource classrooms, classes, schools or specialized, public or outsourced services. (Law no. 13.005, 2014, p. 11)

In addition, we have observed greater efforts to increase the participation of these subjects in society, in such a way to modify social conceptions and attitudes towards them only from the 2000s (Omote, 2018), although before that, we already counted with a framework of previous public policies aimed at supporting the schooling process of disabled subjects. In this sense, the legislation has advanced greatly, especially due to international demands. On the other hand, we highlight that, even in this scenario, the permanence and the guarantee of an effective learning process for these subjects remain as great challenges in the educational area and several researchers have sought to contribute untiringly (Deliberato, 2013; Deliberato & Nunes, 2015; Fiorini & Manzini, 2018; Mendes, Cia, and D'Affonseca, 2015; Mendes, Cia, and Tannus-Valadão, 2015; Oliveira, Rocha et al., 2017; Oliveira, Rodrigues et al., 2017; Pletsch et al., 2017; among others).

In an attempt to respond to some of these challenges, research efforts have suggested that, by adopting a scientific and principled position of social justice combined with attributes of the Universal Design for Learning, innovative conditions for overcoming negative student outcomes can be generated (Hanesworth et al., 2019). These conditions should involve, fundamentally, the articulation between students and teachers to build trustful relationships that promote the joint creation of knowledge through research partnerships.

Here, we refer to the relation between the principles of Universal Design for Learning (UDL) and the more specific aspects of teaching practice, as discussed, for example, in the study by Prais and Rosa (2017). These authors highlighted the need for more national research to address the didactic contributions of UDL principles aimed at the context of school inclusion. In some research reported by the authors in a literature review, there is also evidence of the

need for teacher training for implementing UDL in teaching planning and the development of pedagogical activities with an inclusive perspective.

On the other hand, in a systematic review of recent literature on this topic, Oliveira et al. (2019) warned that discussions about UDL in Brazil are quite recent, especially those aimed at teacher training and, therefore, which involve aspects of Didactics. The authors pointed out important elements in relation to the scientific production of UDL in an educational context, and in one of them they observed that, although many studies have recommended the use of UDL principles in this context, there is little scientific evidence to prove its effectiveness. However, the authors mention that this occurs in international literature as well.

UDL principles are strongly related to the interaction between teacher and student, as they prioritize three essential elements: student engagement in the proposed activities; different ways of presenting content to these students; and different forms of representation (expression) of learning. The focus on these relationships is particularly important for students preparing to become teachers as the methodologies to which they are exposed in Higher Education should provide teaching, learning and assessment strategies to be used in different classroom contexts. Therefore, the search for effective pedagogical strategies, which allow all students to expose their learning potential, is fundamental.

Considering this context, in this research, we approach the use of Lesson Study as a possibility to understand aspects of professional development in the context of Higher Education. The hypothesis is the following: although the use of Lesson Study occurs predominantly in Basic Education in specific didactic calls, if used in Higher Education, this strategy can provide support for teaching practices with an inclusive perspective.

The possibility of analyzing such strategies with students, in turn, will allow the strengthening and incorporation of existing policies and guidelines generated at the University itself. In particular, it can provide the professional improvement of university professors who are concerned with the adoption of actions with inclusive education perspectives (Cabral, 2018), aligned with the principles of Universal Design for Learning.

Thus, our research questions were: What are the principles, characteristics or indicators of the Lesson Study structure that may be able to enable its use as a teaching practice with an inclusive perspective in Higher Education? Which strategies would be suggested by students when using Lesson Study that could also be configured as indicators? Considering the aspects of diversity in a heterogeneous group participating in this practice, would these strategies be different, in relation to these students' profile?

In general, the teaching practice named Lesson Study is based on the pedagogical theory of learning social constructivism (Rekalidou et al., 2013), with bases focused on reflection and collaboration (Cajkler et al., 2014; Dudley, 2011). It has been predominantly used in levels of education preceding Higher Education, and most authors adopt a social character of knowledge, in which there are reflections and discussions involving all actors in the process (teachers and students) without disregarding, therefore, its interactionist character. In addition, students' prior knowledge serves to build new aspects, based on teachers' guidance and encouragement (Sofos & Darra, 2015).

According to Dudley (2013), this teaching practice was originated in Japan, extended to China and other regions of Asia and the Pacific in the last century, and it is now possible to verify its use, also, in the United States, Canada, Europe, Africa and the Middle East. Currently, Peter Dudley has been one of the main references of this practice, and in his current studies he has emphasized its use to improve aspects of continuing education and professional development of teachers in the United Kingdom. It is also with this focus that the present research intends to contribute, considering especially the innovative character of this practice in Brazil (Richit & Ponte, 2020).

Without disregarding the countless aspects involved in teacher training (Gatti, 2016, Gauthier et al., 2006; Mizukami, 2004, Roldão, 2014; Tardif, 2014; among others), this research turns its view for the more specific ones in planning and assessment of teaching practices that can contribute to the reflection and improvement of these practices (Shulman, 1987).

Lesson Studies are most commonly used in the area of Mathematics didactics and Science didactics (Doig & Groves, 2011). The authors mentioned that the research in these areas points to the potential of this methodology in the promotion of professional teacher knowledge. This is highlighted, especially, due to collaborative actions among the teachers and the better reception of scientific knowledge by the students. Bocala (2015), on the other hand, highlighted that when the teacher is more involved in curricular management and is participating in Lesson Study, he/she becomes an essential element in promoting deeper dialogue, reflection and growth of professional teacher knowledge.

Akiba et al. (2019), in conducting a research using Lesson Study, found three key aspects to success in improving teaching aspects: a) the focus of the facilitators on the student's thinking; b) the quality of the materials and; c) the duration of the lesson study. The authors suggested that a longer period for the lesson study is associated with a more positive result regarding teachers' learning or improvement.

Kanellopoulou and Darra (2018) carried out a compilation of investigations involving Lesson Study. The authors indicated specific aspects of some previous studies, among which we highlight: a) the use of this method in different places is possible, as long cultural differences are respected (Cowen, 2006) and therefore, adapted; b) lesson studies can mean educational innovation in some places, when relations[5] or articulations between other countries are promoted (Phillips, 2006); c) adequate teaching planning and proper implementation should be established, reinforcing the active role of teachers and students (Sofos & Darra, 2014); d) the possibility of lesson studies becoming educational policies; e) egalitarian participation of teachers is considered a necessary condition for the success of lesson studies (Lewis & Hurd, 2011); f) open-ended questions facilitate the free expression of participants' views on teaching, as well as preparatory and reflective meetings (Creswell, 2011); g) lesson studies develop collaboration and communication among teachers (Chong & Kong, 2012) and strengthen friendly interpersonal relationships; among others.

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5 It is noteworthy, at this moment, that this research prioritized this relationship, both in its specific collection and in other aspects throughout its realization, such as the establishment of other partnerships and future projects focusing on Universal Design for the Learning.

Norwich and Jones (2014) also claim the importance of using Lesson Study for teachers professional improvement, both in the initial phase of their training and continuously, as lesson studies allow analyzing the pedagogical actions throughout their implementations. We reiterate that, in most countries that adopt this teaching practice, its use is predominantly in teaching stages that precede Higher Education, although some studies indicate promising and significant potential paths for its application in Higher Education (Perry & Lewis, 2008).

Considering the presented above, the general objective of this study was to describe preliminary indicators of use of the Lesson Study as a teaching practice capable of enabling an inclusive perspective in Higher Education. Specifically, we aim to: a) identify student strategies with and without markers (social, linguistic, ethnic, neuromotor, among others) as suggestions for the teaching-learning process with an inclusive perspective, and b) compare these strategies and discuss them from the point of view of teaching practice aspects tested in this analysis.

2 METHODOLOGICAL ASPECTS

With a predominantly qualitative approach, this is a descriptive investigation (Gil, 2008) and the investigation procedures used for data collection consisted of interviews, observation and field notes (Vianna, 2003). All ethical issues were considered for research purposes, with special attention to the institutional authorization to conduct the research, signing of the Informed Consent Form and approval of the study by the Institutional Ethics Committee.

Three university professors (A, B and C) participated in this stage of data collection, who were responsible for undergraduate and postgraduate courses (*stricto sensu* and *lato sensu*). Most of these subjects were directly related to Special Education and Inclusive Education, such as: Universal Design, Accessibility and Adaptations; Alternative Communication and Public Policies in Special Education and Inclusive Education

The main criteria for selecting this participation were: working in Higher Education, teaching subjects in the area of Special Education, and participating voluntarily in the study, since it required a previous study on Lesson Study. Data on the profile of these professors are presented in Chart 1, below:

Chart 1
Profile of the professors participating in Phase 1 of data collection

Variable	Participating Professor		
	A	B	C
Age	41 years	39 years	52 years
Time working with Special Education	16 years	10 years	29 years
Time working in Higher Education	15 years	4 years	26 years

A group of twelve students, three male and nine female, also participated in this stage. The mean age of this group was 29.09 years, with a standard deviation of 9.02. The main criteria used to form this group were: regular enrollment at the university (undergraduate and/or graduate); enrollment in any discipline taught by the professors participating in the study or participation in a study group in the area of Special Education; and availability for voluntary participation in all stages of the study. This group was formed from an open invitation during the classes of each discipline, this selection based on contact with the professors and, fundamentally, on voluntary participation, as these meetings would take place on different days and times of the classes.

In addition, this group should have students with some type of marker (social, linguistic, ethnic, neuromotor, among others) related to the development or the learning process, reasonably respecting, the proportion of these people in relation to the presence of these markers in the university context. This criterion was intended to enable the formation of a heterogeneous group and to obtain specific data related to these markers, arising from these students or from discussions provided by their presence at this specific stage of the collection. We show these students profile data in Tables 1 and 2.

Table 1

Age of the students participating in data collection Stage 1

Students	Age in years	Mean	Standard Deviation
S1	20		
S2	18		
S3	24		
S4	23		
S5	20		
S6	19	29,09	9,02
S7	31		
S8	36		
S9	38		
S10	34		
S11	46		
S12	31		

Table 2

Presence and characterization of markers in students participating in data collection Stage 1

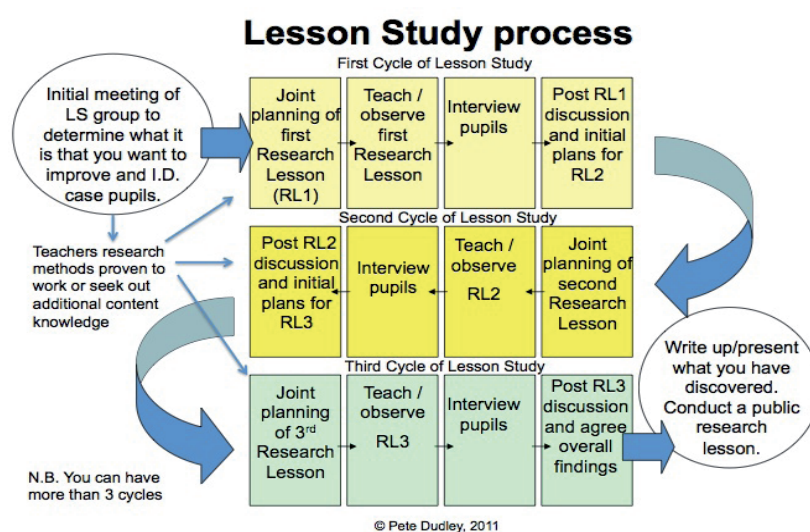| Students	Age in years	Presence of markers	Marker characterization
S1	20	No	-
S2	18	Yes	Socioeconomic[6]
S3	24	Yes	Physical Disability
S4	23	No	-
S5	20	No	-
S6	19	No	Dyslexia
S7	31	No	-
S8	36	Yes	Deafness
S9	38	No	-
S10	34	No	-
S11	46	No	-
S12	31	No	-

With this convenience sample, we meet one of the research objectives with a qualitative approach, following what Minayo (2013) points out when he comments that the sampling in research of this nature has the effort for the choice of aspects such as location and group of observation have a set of experiences that are linked to the research objective as a characteristic. This sample was also part of an adaptation for data collection, conducted from the basic structure of Lesson Study. The adaptation made for this study was exactly that previous selection of the group of students who would participate in Cycle 1.

It is noteworthy that the research included a professional development dimension where experts in the field of Lesson Study shared their research and insights with practitioners and researchers at workshops based in the United Kingdom (UK) and in Brazil. Following this capacity building exercise, the research was carried out in both jurisdictions during the 2018-2019 academic year. For the present article, we focus on part of the data collection from the research carried out in Brazil. The larger research also contemplated the effects of using this strategy compared to its use in the United Kingdom, considering differences in teacher training in Brazil and the UK, in relation to teaching work and professionalism, such as socio-cultural, political, didactic aspects, among others.

This research structure involved aspects of training and structuring a process for applying the Lesson Study methodology, respecting its fundamental steps proposed by Dudley (2011), as shown in Figure 1.

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[6] This marker was considered from the student's entry through the vacancy reservation system. The expression "vacancy reservation" is used in this text, rather than "quota", mainly, due to etymological aspects and, because official documents adopting the expression "vacancy reservation" (Law no. 13.409, 2016).

Figure 1
Lesson Study process

Lesson Study process

First Cycle of Lesson Study

Initial meeting of LS group to determine what it is that you want to improve and I.D. case pupils.

Joint planning of first Research Lesson (RL1) → Teach / observe first Research Lesson → Interview pupils → Post RL1 discussion and initial plans for RL2

Second Cycle of Lesson Study

Teachers research methods proven to work or seek out additional content knowledge

Post RL2 discussion and initial plans for RL3 ← Interview pupils ← Teach / observe RL2 ← Joint planning of second Research Lesson

Third Cycle of Lesson Study

Joint planning of 3rd Research Lesson → Teach / observe RL3 → Interview pupils → Post RL3 discussion and agree overall findings

N.B. You can have more than 3 cycles

Write up/present what you have discovered. Conduct a public research lesson.

© Pete Dudley, 2011

Note. Adapted from "Lesson Study: a handbook", by P. Dudley, 2011, Lesson Study UK, p. 6 (http://lessonstudy.co.uk/wp-content/uploads/2012/03/Lesson_Study_Handbook_-_011011-1.pdf).

As shown in Figure 1, there was an initial collective planning (elaborated by the three participating professors and by the lead researchers both in Brazil and in the United Kingdom). Then, Cycle 1 was put into practice by one of these professors and recorded/observed by another one and, finally, there was a reflection of the strengths and possible improvements for the performed class, considering the point of view of all participants. In the third (reflective) stage, the three participating professors held a meeting (Dudley, 2011) to discuss the observations and records made, and the students were interviewed by one of them, using a semi-structured script, whose purpose was to obtain tips, strategies and other aspects they would find important to improve the discussions of this class with an inclusive perspective, in Cycle 2, and so on, until the end of Cycle 3 of the Lesson Study.

Regarding the construction of the script and the conduct of interviews with students, all the precautions indicated in the literature in the area were taken (Manzini, 2008; Triviños, 1987), especially those focused on the sequence of questions, based on theories and hypotheses, which would converge with the research objectives. In addition, the instruments used throughout the research were reviewed by all researchers involved in the larger research. These interviews were conducted in a classroom, recorded with an audio recorder and lasted approximately 20 minutes.

The theme chosen by the researchers to be developed in these Lesson Study classes was "Teaching and learning methodologies with an inclusive perspective in Higher Education" and for the present analysis, the data from interviews and discussions from the first Cycle of the Lesson Study were considered, conducted by a participating professor.

The material related to the discussions that emerged from Cycle 1, as well as the interviews that occurred at the end of that cycle, were analyzed by the participating professors to extract specific data indicating units or themes that fundamentally contemplated one of the specific objectives of this analysis: obtaining techniques, strategies or resources that could contribute to the improvement of the teaching-learning process in relation to the next cycles (1 and 2), focusing on aspects of planning and evaluation in an inclusive perspective. Two categories of analysis of this content were established: *strategies and resources indicated by the students* and *strategies and resources indicated by the professor (Cycle 1)*. For this article, data from the first category will be presented and discussed.

As an ideal implication of our larger research, it is expected that with the end of Cycle 3, these strategies have reached a pedagogical and methodological level of discussion, which allowed to refer to high and low technology strategies, products and services closely related to the UDL (Waitoller & Thorius, 2016).

3 Results and discussion

Considering our research questions, the first question "What are the principles, characteristics or indicators of the Lesson Study structure that may enable its use as a teaching practice with an inclusive perspective in Higher Education?", it was possible to identify during the planning of this teaching practice, several elements that provide inference about a practice with this perspective, among which we highlight at least four.

One of the first references of the Lesson Study theme in Portuguese language was Cardoso's text (2006), who highlights the innovative character of this methodology and its promising future for schools in Portugal. However, from the study by Ponte et al. (2014) this theme was highlighted and expanded further in this country.

In Brazil, Lesson Study classes were mentioned for the first time in the research by Professor Yuriko Yamamoto Baldin, from the area of Mathematics, with a voluntary link with the Federal University of São Carlos (UFSCar). Baldin has experience with Lesson Study classes in Japan and introduced this teaching practice in Mathematics classes in Brazil. In an interview with the Study and Research Group in Mathematical Education (GEPEM), one of the oldest groups in Brazil in this area, she commented that the importance of the Lesson Study disseminated here is exactly due to the lack of structured models of professional learning that allow the improvement of classroom practices throughout the teaching career.

This is the *first indicator or point* we highlight in relation to the Lesson Study: it is a possibility of teaching practice that allows the improvement of teaching performance, simultaneously with the process of representing curriculum content. For this reason, some authors who use it frequently cite the principles pointed out by Shulman (1987) in relation to the process of teaching formation and/or learning. This author has been one of the greatest influences in the past two decades, regarding the research as a training and professional development policy in the scope of teaching (Mizukami, 2004).

Shulman (1987) points out several curricular and teaching characteristics as essential in the process of teacher education and development, among which, we note, in the context

of this discussion, the pedagogical knowledge of the content and the curricular knowledge. The first is related to specific knowledge to exercise the teaching profession, considering the necessary bases to teach a certain subject, in such a way the student understands this content. In this regard, we can mention, as examples, the students' previous conceptions on this subject and the forms to represent it, such as explanations, illustrations and demonstrations. Regarding representation, it is important to reiterate that this is one of the UDL principles.

And curricular knowledge refers to the knowledge and understanding a professor has about teaching programs, plans, didactic materials to develop these planning, while teaching a certain content, as well as those to be avoided. In this second aspect highlighted here, one must also consider the relationship between the content to be worked with other knowledges, whether or not linked to the curriculum. This is important, as it takes us to other bases and knowledge necessary for teacher training, as pointed out in the literature (Gatti, 2016; Gauthier et al., 2006; Roldão, 2014; Tardif, 2014) and which, although indisputably primordial, will not be the focus of this discussion at this time.

In addition to this aspect related to curricular knowledge, cited by Shulman (1987), it is important to reiterate the care the professor must take in relation to the students' profile, when choosing didactic materials or teaching strategies. And here, we refer specifically to students with markers, such as those highlighted in our group. This choice must consider, fundamentally, aspects of equity during the teaching-learning process.

A *second indicator* the Lesson Study provides to enable teaching practices with an inclusive perspective in Higher Education is collaboration, during its planning, execution and evaluation. This has been emphasized in several studies reporting this practice (Cajkler et al., 2014; Dudley, 2013; Richit & Ponte, 2019), and many of them have emphasized the need for school management involvement so that the school, in fact, appropriate this practice in such a way it is not only linked to the classroom. The need to adopt collaborative practices has long been emphasized in research in the area of Special Education in Brazil (Calheiros et al., 2019; Capellini & Mendes, 2007; Fiorini & Manzini, 2018; Vilaronga et al., 2016), and these studies have stressed to collaboration as a fundamental if not essential element for school planning that respects students' differences (Mendes et al., 2011).

This indication allows inferring that this teaching strategy provides the analysis of the variables linked to the teacher and students during the teaching-learning situation, in a way it is possible to explain and understand fundamental elements of the functioning of teaching practice from interaction (Gauthier et al., 2006), which does not reduce this practice simply to a planning and evaluation process. Thus, this strategy meets another didactic principle: *respect for differences*, not standardizing or unifying the activity, especially because it is taught by at least three professors, after discussions and evaluations. We believe this is one of the most important and differential indicators in relation to the way to approach its use in the context of Higher Education.

This was one of the strengthening points of this research network between Brazil and the United Kingdom, especially considering the range of possibilities for analysis in relation to teacher training policies in these two places, as well as policies for access and stay of students with markers in Higher Education.

A *third indicator* to be highlighted in relation to the Lesson Study is the importance given to the student, during the planning of the cycles. Their needs and, particularly, the needs of students participating in the Lesson Study are highlighted by themselves. These needs are not only curricular but, fundamentally, the ways in which they learn best, the way they will feel more motivated to learn, as well as the types of feedback they should have, which in their perception, would be most useful.

This planning, action, reflection and dialogic nature of the research raised awareness among all the key stakeholders about how individual students responded to potential gaps in the ways knowledge was generated and disseminated within and beyond real and virtual learning environments. It was also from this planning, that the students indicated strategies for and to favor an inclusive perspective in Higher Education.

Finally, a *fourth indicator* refers to the investigative character of the teaching practice of all the involved professors. The possibility of analyzing this process while it is occurring and, therefore, of adapting it in real time, considering the various perceptions about it, is undoubtedly a unique opportunity to improve teaching practice. We may point to some elements that allow this analysis: greater collaboration among professors during the cycles; development of knowledge, practice and professionalism of each professor; higher teaching quality in the classroom from the perception of students and professors; better understanding of each student's learning behaviors; the entire involved group is responsible and takes risks, especially in relation to the possibility for professors to learn in collaborative groups from the analysis of their own class; there is a greater concern with the most appropriate pedagogical approaches for teaching the selected content; and classroom interaction is more valued. Some of these advantages are highlighted by Dudley (2013) and are part of fundamental bases the professor must acquire throughout his/her education and professional development, and which are mentioned by several cited authors here.

To answer the other research questions: "What strategies would be suggested by students during the use of the Lesson Study, which could also be configured as indicators?" and "Considering the aspects of diversity in a heterogeneous group participating in this practice, would these strategies be different, in relation to these students' profile?", we present below, two data systematizations that reveal the strategies indicated by students with and without markers. Then, these systematizations are discussed from the point of view of the literature and aspects of teaching practice tested in this analysis.

Box 1

Excerpts of tips and strategies provided by the students (without markers) from the class the Lesson Studies were conducted

a) *Written content schemes*

b) *Written notes*

c) *Record lessons to listen at home*

d) *Search for additional videos on the internet*

e) *Write and read the written notes*

f) *Re-write notes*

g) *Group discussion with written notes*

h) *Use of visual resources*

i) *Written notes from the professors' PPT slides*

j) *Listen to someone explaining the content and make written notes to review afterwards*

k) *Shared reading and group discussion*

l) *Assign keywords for the content*

m) *Explain the content to another student or to someone*

n) *Visual resources with simultaneous explanation*

o) *Video classes on the internet*

p) *Summaries of the lessons*

q) *Use examples to explain the content*

r) *Real-life situations to generate discussions about the content*

s) *Have a constant instrument for taking notes*

Box 2

Excerpts of tips and strategies provided by the target students (with markers) of the class the Lesson Studies were conducted

> a)   *In the absence of a sign language translator (current situation) make more written materials available on the subject*
>
> b)   *Try to make some kind of material available in sign language*
>
> c)   *Provide at least one type of assessment in sign language*
>
> d)   *Written content schemes*
>
> e)   *Written notes*
>
> f)   *Record the lessons to listen at home*
>
> g)   *Write and read written content*
>
> h)   *Group discussion with written notes*
>
> i)   *Use of visual aids*
>
> j)   *Shared reading and group discussion*
>
> k)   *Visual resources with simultaneous explanation*
>
> l)   *Use of examples to explain content*
>
> m)   *Search for real-life situations that may generate discussion about the content*
>
> n)   *Make the adapted material available in advance*

The data allow us to highlight that the strategies and tips provided by students can also be configured as indicators capable of enabling the use of the Lesson Study as a teaching practice with an inclusive perspective in Higher Education, due to the specific character present in these strategies. It is interesting to note, however, that the specifics are not linked only to students with markers, which means that their presence in the classroom enables such concern from the others and, therefore, generates a concern and consequently a perspective of inclusion during the evaluation of the classes.

In general, it is possible to notice that the indicated strategies differ slightly in relation to specific situations, such as those pointed out by the deaf student and the student who has learning difficulties. This separation of data was intended to allow for exploration in this direction. The data indicated some linguistic specificities that need to be considered, either in relation to the presence of an interpreter in the classroom, or in relation to the availability of materials prior to the classes. These aspects will be explored in the discussion below.

Discussions regarding the linguistic challenges faced by these subjects throughout their schooling process are numerous, and all of them involve a large cultural problem: Brazilian Sign Language (*Libras*) is not respected as a mother tongue throughout this process and, therefore, causes difficulties for these subjects in relation to their language acquisition and development, in addition to important difficulties in relation to the initial schooling process, such as literacy issues (Rocha et al., 2016). These are serious obstacles, responsible for damages throughout these subjects' development.

In Higher Education, difficulties remain as we are faced with a situation in which the presence of an interpreter is not enough to help this student in the process of acquiring specific concepts discussed and worked on in a specific theme to the course, undergraduate and postgraduate studies. The interpreter's training is not always consistent with the area this person is majoring or specializing, and therefore it is more difficult to promote an interpretation that contemplates specific concepts. These are only some of the difficulties revealed in studies of the area (Menezes & Lacerda, 2017).

In relation to the other strategies indicated by the students, they are characterized by practices that help them and place them in the center of their learning process, focus given to most of the discussion, during the application of Cycle 1. We highlight some of them, so that they are linked to the tested teaching practice (Lesson Study) and the principles of the UDL.

The references: *Search for real-life situations that can lead to discussions about the content*, the *Presentation of situations that can lead to discussions about the content* and the *Use of examples to explain content* refer to situations that resemble practical experiences of learning content. As most of the students who participated in the Lesson Study were part of a Bachelor's degree (Pedagogy), these references also recall situations from internships. Even though in a classroom environment, the professor must try to make these bridges with real-life situations, during his/her explanations.

This is a constant demand from undergraduate students in their initial years. The idea of having a basic theoretical period does not always guarantee the acquisition of the more practical contents demanded in the later years. Students always request examples and "case studies" so they can visualize (in their words) the concepts they have been working on. In this sense, we refer to Shulman (1987), as the "teaching cases", as mentioned by Mizukami (2004, p. 43) when talking about the contributions of this author to the process of teacher education, exposes this possibility as one of his theoretical models, among the knowledge bases of this profession. The author comments that for the theorist, the use of this model resumes activities of collaboration and reflection among the group solving the case and, therefore, contributes to the systematization of a body of knowledge that should be prioritized in the teacher training, understood as profession.

Regarding the reference to *Shared reading and group discussion*, these suggestions resemble the teaching strategies that value groups, which are extremely important and emphasized in contemporary methodologies. They place more value on student activities, rather than transmissive methodologies, in which they have a passive role (Anastasiou, 2014). In the active methodologies, something fundamental is the use of different strategies, so that the most distinct opportunities and/or possibilities are given to the student to reach the proposed objective in relation to the curricular activity. The use of these different strategies is also a way of facilitating the articulation between the areas of knowledge being worked on and, therefore, a way of approximating theory and practice. However, the professor needs to be careful in relation to prioritizing mediation, equally active, when choosing to use these strategies.

This also meets the need to diversify work in the classroom, in the context of Higher Education, a challenge for many teachers, since this differentiation, according to Heacox (2006), has to do with the concern the teacher has in the face of each student's learning needs.

And this concern that respects these differences, requires understanding and knowledge of the heterogeneity present in the classroom.

All this valuation focused on students, present in most of the strategies suggested by them, also recalls the aspects prioritized in relation to the teaching resource *Colega Tutor*, which is also a known collaborative work proposal in the area of Special Education. In this case, a classmate from the same class, a volunteer, is assigned to benefit the student with disabilities with their tutor (Orlando, 2010). It is reiterated that, here again, the emphasis on collaboration, so highlighted in the Lesson Study, in addition to valuing respect for differences, through relationships among classmates. The use of this didactic resource has been popularized in the area of Physical Education (Lieberman et al., 2000) for some time and has shown effectiveness in this area (Souza et al., 2017).

Lastly, the types of records they use to study or to assist in the process of knowledge acquisition are also highlighted. Rewriting, recording, searching for complementary materials (on specific sites), and notes that resemble the organization of mental maps seem quite commonplace in the day-to-day of these students. This reinforces the importance of the quality mediation performed by the professors in the proposed activities and especially, the flexibility, as it allows promoting accessibility to students, especially in relation to curricular conditions.

4 Final considerations

When outlining this research, we hypothesized that, although the Lesson Study is used predominantly in Basic Education in specific didactic calls, if used in Higher Education, this strategy would provide support for teaching practices, with an inclusive perspective. The collected and discussed data allow us to consider that this hypothesis has been confirmed.

The results also led to the conclusion that the objectives aimed for this analysis were achieved and reinforced three important aspects: a) the use of the Lesson Study in this research allowed to consider the specificities of the students, such as the addressed linguistic aspects and the need to use diversified teaching strategies and teaching resources; b) most of the indicators obtained in relation to the structure and use of the Lesson Study contemplated principles of the Universal Design for Learning, especially aimed at different forms of representation and expression, and related to the ways of dealing and constructing knowledge; and c) the use of the Lesson Study allowed to allude to important issues involved in the process of formation and development of the teaching profession, among which we highlight interaction and collaboration.

In addition, the possibility of testing the use of the Lesson Study in Higher Education allowed, in turn, the strengthening of a research network between Brazil and the United Kingdom whose focus has been the allusion to existing policies and guidelines, or what can be generated in the university context with a view to access and stay for all students. Especially, this analysis can provide the professional improvement of university professors who are concerned with the adoption of actions with perspectives of inclusive education (Cabral, 2018).

Finally, we were struck by the fact that no student mentioned high-technological resources. We infer that this may be intricately linked to the teaching conditions and also to

the socioeconomic conditions, which may be an important aspect to be investigated in future research. Finally, it is suggested, for further investigations, to expand the use of the Lesson Study not only in the context of Higher Education, but also in other teaching stages that aim to favor and/or improve the school inclusion process.

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