

The place of educational assessment in IFSP Chemistry degree pedagogical projects

ARTICLE

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1

Abstract

Studies indicate that in teacher training, educational assessment has limited space and contributes to the reproduction of classificatory practices. This article is intended to analyze the place of educational assessment in the Projetos Pedagógicos dos Cursos (PPC) of the Chemistry degrees at the Instituto Federal de Educação, Ciência e Tecnologia of São Paulo. The PPCs were analyzed using the content analysis technique. The data indicate that these PPCs allocate little space to evaluation at its three levels, namely: assessment of classroom learning, large-scale external assessment and institutional assessment. For the most part, it is addressed as a topic of curricular components, with the assessment of learning in the classroom being the most reported level to the detriment of the others. Throughout the PPC, standardization is observed in the writing and characterization of the evaluation, which provides little evidence of the context in which the evaluation processes were developed.

Keywords: Assessment. Projeto Político-pedagógico. Teacher Training. Graduation.

O lugar da avaliação educacional nos projetos pedagógicos de licenciatura em Química do IFSP

Resumo

Estudos indicam que, na formação de professores e professoras, a avaliação educacional tem espaço reduzido e contribui para a reprodução de práticas classificatórias. Este artigo destina-se à análise do lugar da avaliação educacional nos Projetos Pedagógicos dos Cursos (PPC) das licenciaturas em Química do Instituto Federal de Educação, Ciência e Tecnologia de São Paulo. Foram analisados os PPCs a partir da técnica de análise de conteúdo. Os dados indicam que esses PPCs destinam pouco espaço à avaliação em

seus três níveis, a saber: a avaliação da aprendizagem em sala de aula, a avaliação externa em larga escala e a avaliação institucional. Em sua maioria, ela é abordada como tópico de componentes curriculares, sendo a avaliação da aprendizagem em sala de aula o nível mais citado em detrimento dos demais. Ao longo dos PPCs, observa-se padronização na escrita e na caracterização da avaliação, que pouco evidencia o contexto de desenvolvimento dos processos avaliativos.

Palavras-chave: Avaliação. Projeto Político-pedagógico. Formação de Professores. Licenciatura.

1 Introduction

Educational assessment carries potentialities of different natures that are present in the pedagogical process. Connected to contradictory social relations, assessment can either play a leading role in student education, from the perspective of forming a historical subject, or it can reproduce exclusion and subordinate individuals to certain societal projects (Freitas, 2010).

Based on the assumption that educational assessment is a central category in the organization of pedagogical work and can determine the trajectory of students (Freitas, 1995), it is important for future teachers to understand its nature and form. However, research indicates (Villas Boas; Soares, 2016; Sada, 2017; Ferrarotto; Garcia, 2024) that the discussion of the field of assessment in many curricular components of degree courses is superficial and disjointed, preventing the appropriation of innovative concepts and practices.

This fragility is related to the complex factors involved in the initial training of teachers (Gatti; Barreto, 2009), including the Projeto Pedagógico dos Cursos (PPC). The PPC is a synthesis of pedagogical concepts and reflects the objectives, intentions and ideals that will guide the initial training of teachers (Libâneo; Oliveira; Toschi, 2012).

According to Bernadete Gatti (2014), it is common to find disarticulation between the curricular structure of courses and their pedagogical projects, which

results in the absence of an integrated process in the training of future basic education teachers. In general, there is a lack of a broad, systemic policy that integrates initial teacher training and the conditions for it to take place (Gatti, 2014), in order to include content and methods that enable emancipatory pedagogical and evaluative perspectives and practices.

With the purpose of problematizing the relationship between educational evaluation and initial teacher training, this article analyzes the place that educational evaluation occupies in the PPCs of the Chemistry degrees at the Instituto Federal de Educação, Ciência e Tecnologia de São Paulo (IFSP). To this end, the study relied on the initiative of the research group Avaliação e Relações Escolares (Ares), which has been dedicated to investigating all of the IFSP's degree courses.

The article is organized into six sections, this being the first. The second section presents the theoretical background on the levels of educational assessment in initial teacher training. This is followed by a description of the methodological approach to analyzing the documents. The fourth and fifth sections present and analyze the data found. Finally, some reflections are made in the conclusions.

2 Understanding the complexity of educational assessment

The analysis of processes involving educational evaluation does not distance itself from the arena of social relations. Understanding it requires going beyond its appearance, situating it within the disputes and contradictions of capitalist society. In this sense, the school embodies social functions and assigns to evaluation the control of the execution of these purposes, which refer to exclusion and subordination (Freitas *et al.*, 2009).

The exclusion of students from the education system occurs when they do not appropriate the values compatible with their future subordinate role in society (Freitas *et al.*, 2009). Thus, the school ends up favoring the favored, since they possess the culture it demands (Bourdieu, 1998). In this process, exams act in the intrinsic

relationship between society, reproduction and education, leading to the “[...] legitimacy of school verdicts and the social hierarchies they legitimize” (Bourdieu; Passeron, 1975, p. 171).

However, this is not the only role that assessment plays. As Freitas *et al.* (2009) state, assessment is a controversial and contradictory category in the pedagogical process, since it can open or close doors, subject or develop training. For this reason, it is essential to understand its complexity.

Educational assessment is made up of three interrelated levels: assessment of learning in the classroom; large-scale external assessment¹; and institutional assessment (Freitas *et al.*, 2009). The assessment of learning in the classroom involves teachers and students. It is usually reduced to the application of an exam at the end of the study period. However, there is a difference between an exam and an assessment. Assessment can be understood as part of the teaching and learning process, in order to understand students' difficulties and potential so that teachers can make decisions about their teaching practice. The exam, on the other hand, is administered at the end of the teaching-learning process and is aimed at grading students (Luckesi, 2005).

In addition to its formal side – consisting of tests, assignments and other instruments – assessment also has an informal side. Informal assessment is assessment that takes place on a daily basis, based on the teacher's value judgments about the student. It can be loaded with the teacher's beliefs and ideologies and influence formal assessment. It is in this way that evaluation becomes decisive in the student's life, since it can promote (or not) access to knowledge, as well as (dis)continuity of the school trajectory (Freitas *et al.*, 2009).

Another level of educational assessment is large-scale external assessment. Conducted by the federal government, states and cities, this assessment is carried out

¹ In campus G's PPC, assessment is only included as a topic in Didactics, and there are no elements to indicate which level of assessment will be covered. Considering that learning assessment is the most well-known level (Freitas *et al.*, 2009), it was inferred that the document refers to it.

via standardized tests that monitor educational systems and gather data for the (re)planning of public policies (Freitas *et al.*, 2009). According to José Dias Sobrinho (2010, p. 195), “[...] evaluation is the main tool for organizing and implementing educational reforms [...]”, as it has an impact on management, curricula, methodologies, training practices, in other words, on relationships directly or indirectly connected to the organization of pedagogical work (Menegão, 2016; Rodrigues, 2020).

Institutional assessment completes the three levels of educational assessment. It transcends the assessment of learning that takes place in the classroom and seeks to “[...] recover the collective dimension of the Projeto Político Pedagógico [...]” (Freitas *et al.*, 2009, p. 35). Thus, if learning assessment is internal to the classroom, and external assessment is external to the school, institutional assessment seeks to promote the school's social commitment to the community through ownership of the school by its actors. In this movement, by reflecting on its reality, the school is able to demand from the state the necessary conditions for its operation and share responsibility for promoting the social quality of public schools (Silva, 2009).

In view of the aforementioned, it is understood that in initial teacher training the discussion of the three levels of educational assessment cannot fail to take place. Studies on educational assessment in degree courses indicate that the debate still takes place superficially (Villas Boas; Soares, 2016). Since the complexity of assessment is not discussed during teacher training, teachers tend to reproduce the assessment practices they have encountered throughout their school career and adopt assessments that can be classificatory rather than formative (Villas Boas, 2011).

When Claires Marcele Sada (2017) surveyed mathematics degree courses at federal universities in five regions of Brazil, she found that the field of assessment is not covered in depth, and learning assessment is the level of educational assessment that receives the most attention in course pedagogical projects. Along the same lines, Luana Ferrarotto and Marta Fernandes Garcia (2024, p. 16) point out that the PPCs of

the degree courses they investigated “[...] do not reserve a prominent place for educational assessment”. The authors also point out that:

[...] classroom assessment is the level that appears as content in all the PPCs, especially in Didactics, with no mention of its informal side. With the consolidation of large-scale external assessments in recent decades, we must also address their repercussions on the organization of pedagogical work and training processes. To this end, we see it as imperative that institutional evaluation also gains prominence in discussions on educational evaluation, becoming a possibility for mediation, so as to encourage the collective construction of uses for the data obtained at the various levels of assessment (Ferrarotto; Garcia, 2024, p. 17).

Considering the information given, it is essential that assessment is widely discussed during initial teacher training, since students arrive at degree courses carrying various conceptions about the processes they have already experienced in the classroom.

3 The methodological path

The product of the collective research was drawn up based on the analysis of nine pedagogical projects for IFSP Chemistry degree courses. It's worth saying that pedagogical projects are central documents for the organization of degree courses, as they synthesize the set of concepts and guidelines that will be adopted, as well as presenting the educational objectives, curricular organization, methodological guidelines, the evaluation process and the organizational and administrative structure (Libâneo; Oliveira; Toschi, 2012).

To develop the methodological path, we opted for the techniques of document analysis (Cellard, 2012) and content analysis (Bardin, 1977). Documentary analysis makes it possible to identify the characteristics of a given document and to establish relationships between the object of research and the information provided. Content analysis, in turn, comprises a set of techniques whose process involves “breaking down” the text according to the objective, hypothesis and theoretical framework. The

analysis is divided into three stages: pre-analysis, exploration of the material and treatment of the results (inference and interpretation) (Bardin, 1977).

Pre-analysis begins with the definition of the documentary corpus, followed by floating reading, i.e. a look that seeks to capture the general characteristics of the text (Bardin, 1977). Exploring the material makes it possible to select sections according to the research objectives. In this sense, the process of categorizing the elements suggests observing their characteristics, allowing them to be grouped together (Bardin, 1977). According to Bardin (1977), there are two categorization processes: the first starts with the construction of a posteriori categories; the second provides a priori categories, i.e. the elements of the text are classified according to an existing system of categories.

The second option was adopted in this research since, in previous research (Ferrarotto; Garcia, 2024), a grid was drawn up from the process of exploring the documents. This grid guided the search for the data in this research. Bardin (1977) explains that this method of content analysis breaks down the elements as they are found in the text. Considering that the hypothesis, objectives and documents of the current research are similar to those of the previous research, it is understood that the procedure of using the grid already drawn up fits as a methodological resource in this research.

Processing the results is the final stage of content analysis. After systematizing the inferences, the grid was organized with the information identified in the PPCs, as can be seen in the following fragment.

Table 1 – Campus A grid items

Analysis grid items	Campus A (2022)
Are there any suggestions for assessment instruments in the PPC? If so, what are they?	“[...] at least two different instruments, such as: exercises, research, activities, individual and/or collective work, observation sheets, reports, self-assessment, written tests, practical tests, oral tests, seminars, interdisciplinary projects, among others” (PPC A, 2022, p. 48).

Is there guidance to explain the evaluation process to the student?	Yes. “The evaluation processes, instruments, criteria and values adopted by the teacher will be explained to the students at the beginning of the school term, when the Teaching Plan for the curricular component is presented” (PPC A, 2022, p. 48).
Do they have a specific Evaluation subject? If so, please specify the name.	Yes. Assessment Processes and Instruments.
Does the course work on the 3 levels of assessment?	No. Learning assessment and institutional assessment.

Source: Authors (2023).

The grid contained information that identified both the literal data of each curricular component that dealt with educational assessment at any of its levels and the data related to educational assessment that was not manifested in the curricular components of the course, but was present in the various sections of the document. This organization makes it easier to see the characteristics of each document and facilitates reflection on the place occupied by educational assessment in the PPCs analyzed, as will be shown in the next section.

4 Educational assessment in the IFSP Chemistry degree programs: what can be found in the curricular components?

The initial data found is organized into three categories: provision of specific curricular components on educational assessment; components that articulate assessment with other areas of knowledge; and components that address educational assessment only as a topic. To preserve the confidentiality of the information, the IFSP campuses surveyed have been named A to I.

Only one of the PPCs has a curricular component specifically focused on educational assessment. This is campus A, with the curricular component Assessment Processes and Instruments, which, according to the contents, seeks to address “[...] assessment modalities, assessment instruments in the collective and individual construction of knowledge in Middle and High School and the theoretical perspectives of learning assessment [...]”. (PPC A, 2022, p. 195).

The contents of this curricular component include: planning and assessment; assessment modalities and their assessment instruments; assessment in official documents, such as the Parâmetros Curriculares Nacionais (PCN) for Middle School and High School; theoretical perspectives on learning assessment; types of assessment: diagnostic, mediating, formative and regulatory; assessment criteria; institutional assessment: assessment concepts and functions; assessing, not punishing: rethinking the use of assessment instruments (PPC A, 2022).

In this document, assessment also appears as a topic in three other curricular components: i) Curricula and Methodologies, with the contents “Curriculum and assessment processes; Organization of teaching work: planning and assessment and Assessment of the Natural Sciences educational process” (PPC A, 2022, p. 181-182); ii) Pedagogical Practice 1, which includes assessment processes in its content; iii) Integrative Projects 1, the aim of which is to develop “[...] the skills and abilities needed to design, implement and assess interdisciplinary and transdisciplinary projects” (PPC A, 2022, p. 195).

It can be seen that campus A includes two levels of educational assessment in the curricular component specifically dedicated to assessment: learning assessment and institutional assessment. However, no large-scale external assessment was identified as an object of study in the teaching plans of PPC A. This is a necessary discussion in the teacher training process, since there are repercussions of this level of educational assessment on the organization of pedagogical work, as well as on the training process of students (Menegão, 2016; Rodrigues, 2020).

On the other campuses, educational assessment only appears as a topic in some curricular component. Table 2 shows which components include assessment as a topic, and what is mentioned about it.

Table 2 – Curricular components in which evaluation appears only as a topic

Campus	Curricular component	Excerpts from the teaching plans
Campus B (2019)	Didactics	Objective: To build theoretical and methodological references relating to the organization of pedagogical work in order to enable future teachers to exercise their role in planning, evaluating and monitoring their students' learning processes. Content: Unit III: On evaluation.
	Instrumentation for Teaching Chemistry I	Objective: To reflect on [...] each teaching method and strategy, always considering the relationship between teaching objectives/methodology/forms of assessment. Content: Assessment in school practice.
	Chemistry Teaching Practice I	Objective: To consider the stages of planning, carrying out and assessing experimental activities. Content: Assessment of experimental activities.
Campus C (2019)	General Didactics	Syllabus: [...] teaching and learning process, planning, teaching methodologies, assessment [...]. Objective: To discuss the planning-teaching-assessment triad [...]. Content: Assessment of school learning; Assessment as an instrument of power; New meanings of assessment; Assessment criteria and instruments.
Campus D (2019)	Educational Psychology	Objective: [...] aspects involved in the teaching-learning process, and in its assessment, in order to provide subsidies for the improvement of pedagogical practice.
	Chemistry Teaching Practice I	Objective: [...] axes of the tasks of planning, directing the teaching-learning process and assessment.
	Chemistry Teaching Practice II	Objective: [...] steps for planning, carrying out and assessing experimental activities [...]. Content: 7. Assessment of experimental activities.
	Instrumentation for Teaching Chemistry I	Objective: [...] relationship between teaching objectives/methodology/forms of assessment. Content: [...] assessment in school practice.
	Politics and Organization of Brazilian Education	Syllabus: [...] ways of organizing teaching work, planning, assessment, teaching methods and strategies. Content: [...] planning, assessment, teaching methods and strategies.
	Didactics	Syllabus: Also addresses the organization of pedagogical work from the perspective of planning and assessment [...]. Objective: [...] to establish the most appropriate methodologies for reaching them and the forms of assessment. Content: Elements of planning: objectives, content, methodologies, resources and assessment; Assessment: different perspectives; Procedural and diagnostic assessment; Assessment and school exclusion.
Campus E (2019)	Educational Psychology	Objective: [...] aspects involved in the teaching-learning process and its assessment [...].

	Chemistry Teaching Practice II	Syllabus: Problem solving and learning assessment.
	Didactics II	Objective: [...] the importance of the assessment process for students' learning [...] Content: Assessment of the teaching-learning process.
Campus F (2018)	Education Policy, Organization and Management	Contents: Large-scale assessment systems.
	Didactics	Objective: To understand the structuring elements of pedagogical practice [...] planning, course plans, lesson plans, assessment methods. Content: Dimensions of the teaching process and its guiding principles: [...] School assessment. Types of assessment and their uses/contributions in the educational process.
	Instrumentation for Science Teaching	Syllabus: Also involves the different types of assessment [...]. Objective: To analyze school assessment practices in order to strengthen critical thinking about assessment in the teaching-learning process. To develop a concept of learning assessment from the following perspectives: diagnostic, mediating, formative, regulatory, permanent and participatory. Content: Theoretical perspectives on learning assessment; Diagnostic assessment; Mediating assessment; Formative assessment and Regulatory assessment; Large-scale assessment – The Exame Nacional do Ensino Médio: Development of items.
Campus G (2018)	Didactics	Content: 6. Assessment.
Campus H (2017)	Didactics	Objective: To understand, analyze and demystify conceptions and practices of school learning assessment. Content: School planning: [...] lesson plans (educational objectives, selection of content, teaching methods and procedures, assessment of the teaching-learning process, teacher-student relationship); Assessment: different perspectives; Procedural and diagnostic assessment; Assessment and school exclusion; [...].
	Practical Chemistry Teaching	Content: School planning: [...] assessment of the teaching-learning process, teacher-student relations.
Campus I (2017)	Politics, Organization of Brazilian Education	Syllabus: [...] ways of organizing teaching work, planning, assessment, teaching methods and strategies.
	Educational Psychology	Objective: To analyze and reflect on the interactions between teacher and student and the aspects involved in the teaching-learning process and its assessment. [...].
	Didactics	Syllabus: Also addresses the organization of pedagogical work from the perspective of planning and evaluation. Objectives: To identify and analyze [...] forms of assessment. Contents: 7. Assessment: different perspectives; 8. Procedural and diagnostic assessment; 9. Assessment and school exclusion.

Methodology in Science Teaching	Objective: To recognize the influences of science teaching methodologies [...] on the assessment of science teaching.
Chemistry Teaching Practices 2	Objective: To discuss the theoretical aspects related to the planning, organization, development and assessment of the Chemistry teaching and learning process. Content: 3. Assessment of school performance in the Chemistry teaching and learning process;
Chemistry Teaching Laboratory	Syllabus: The subject covers [...] aspects of planning, executing and assessment of experimental lessons. Contents: d. Assessment in practical classes in the Chemistry laboratory.
Educational Management	Syllabus: Deals with the organization of school work considering elements such as planning, assessment of pedagogical work [...].

Source: Authors (2023).

The data indicates that assessment is covered especially in Didactics. In all the PPCs analyzed, assessment appears in the syllabus or as content of this curricular component. It is also worth noting that most PPCs have other components that address assessment as one of their topics. However, in PPCs C and G, this is not the case, i.e. it is only in Didactics that assessment is addressed. The data therefore suggests that the teaching and learning of this content is summarized exclusively in this component². In the PPCs, assessment is also frequently mentioned in the curricular components focused on teaching practice. In five of them, assessment appears as a topic in these components.

We need to look at what has been covered in educational assessment in the different curricular components. With regard to content, there is an emphasis on assessing learning in the classroom. This is the level of educational assessment that is present in the curricular components of all the PPCs. For the most part, the conceptions that will be addressed are not specified, only the mention of assessment in school practice, in the teaching-learning process, in planning or in relation to objectives, content and methodology.

² In PPC E, self-evaluation is also mentioned in Practice as a curricular component.

Only four PPCs specify this. PPC D, in Didactics, contains procedural and diagnostic assessment. In PPC F, in Instrumentation for Science Teaching, the syllabus contains the concepts of diagnostic, mediating, formative, regulatory, permanent and participatory; the contents mention theoretical perspectives on learning assessment and diagnostic, mediating, formative and regulatory assessment. And finally, PPCs H and I, in Didactics, mention procedural and diagnostic assessment in the content.

At this point, we believe it is necessary to discuss the different conceptions of assessment. In this direction, Luckesi (2005) and Villas Boas (2011) argue that assessment should be inclusive, provide elements for (re)conducting the work to be carried out by teachers and students and promote the learning of both. If assessment is conceived separately from learning, as something that takes place at the end of the process, it will be difficult to contribute to the student's development, allowing them access to new knowledge (Freitas *et al.*, 2009). On the contrary, this approach is closer to classificatory conceptions, which tend to lead to exclusion.

Still on the subject of exclusion, it is related to assessment in the Didactics component in three PPCs – D, H and I – but there is no explanation for this relationship in the teaching plans. These documents mention the procedural and diagnostic conceptions of assessment, which leads us to infer that there may be a counterpoint to the exclusionary perspective. One gets the impression that there is an intention to deconstruct this conception, making new practices possible by citing new meanings of assessment.

As the courses are Chemistry degrees, some of them include the assessment of experimental and/or practical activities. This occurs in PPCs B, D and I, with the respective curricular components: Chemistry Teaching Practice I, Chemistry Teaching Practice II and Chemistry Teaching Laboratory. According to Elias Vinícius Ferreira do Amaral (2016), practical lessons focus on visual experiments, such as changes in color and temperature and the release of gases, seeking to stimulate curiosity or confirm a theory. However, according to the author, learning assessments in Chemistry have

little to do with laboratory practices, since most of them consist of reproducing conceptual content and memorizing formulas. It is therefore important for teachers in training to be taught how to evaluate experimental lessons, encouraging reflection on their importance in future professional practice (Sales, 2017).

Another point in the analysis of the PPCs concerns the other levels of assessment, i.e. large-scale external assessment and institutional assessment. As for the first, it appears in PPC E, in the contents of the Education Policy, Organization and Management curricular component, as the Large-Scale Assessment System and, in PPC F, in the contents of Instrumentation for Science Teaching, referring to the Exame Nacional do Ensino Médio (Enem) and the preparation of items. Studies indicate that large-scale external assessments and their results can induce pedagogical work and demarcate what should be valued, leading to a narrowing of the curriculum (Menegão, 2016). Therefore, this level of educational assessment should be problematized in degree courses, beyond the analysis of which assessments exist and the construction of items.

As the three levels of educational evaluation tend to be increasingly interrelated (Freitas *et al.*, 2009), addressing them favors a broader analysis of the organization of the school's pedagogical work. To this end, the level of institutional assessment must not be forgotten, as it is an instrument of mediation between the assessments carried out in the classroom and the data obtained from external assessments (Freitas *et al.*, 2009). Institutional assessment makes it possible to contextualize the results of large-scale external assessment, bringing other elements to the analysis of quantitative indices. However, as can be seen in the tables provided previously, institutional assessment is not included in the syllabuses, objectives or contents of the different curricular components of the PPCs analyzed, with the exception, as we have seen, of PPC A.

5 Educational assessment in the IFSP Chemistry PPCs: beyond the curricular components

Several authors have stated that if there is no movement towards reflection on assessment practices in training courses, the tendency is for graduates, when they become teachers, to reproduce what they experienced as students when they were assessed (Villas Boas; Soares, 2016; Sada, 2017; Sales, 2017). Thus, in order to break the cycle of reproducing classificatory and exclusionary assessment practices, it is necessary to learn how to assess, based on new theoretical and practical learning (Luckesi, 2005).

The various experiences offered by teacher training courses in educational assessment can contribute to this learning. For this reason, in addition to the curricular components, we analyzed what is said about the different assessment processes described in the PPCs with which undergraduates may come into contact during the course. Considering how the PPCs address evaluation in their sections also helps to understand the conceptions that permeate the course and that can have repercussions on the actions taken.

One item present in all the PPCs is the assessment of learning. It describes how this level of educational assessment should take place in the course. This description is based on the Diretrizes e Bases da Educação Nacional (LDBEN) (Law No. 9.394 of 1996), as well as the IFSP Organização Didática (IFSP, 2016). Thus, there is a great deal of similarity (and in some cases identity) in the writing of the section, which can be illustrated by the following fragment.

As stated in the LDB – Law 9.394/96 – assessment of the student learning process must be continuous and cumulative, with qualitative aspects prevailing over quantitative ones [...]. Likewise, the IFSP's "Organização Didática" stipulates that assessment should be guided by a formative, procedural and continuous concept, presupposing the contextualization of the knowledge and activities developed, in order to provide a diagnosis of the teaching and learning process that enables the teacher to analyze their practice and the student to commit to their intellectual development and autonomy (PPC B, 2019, p. 154-155).

Still on the learning assessment processes developed in the IFSP's Chemistry degree courses, evidence was found in other sections of the PPCs, such as in the description of the methodology and/or student support. As for methodology, PPCs A, D, E and G relate learning assessment to methodological accessibility, i.e. they state that the course seeks to diversify the use of assessment strategies, resources and instruments.

The concern with eliminating barriers and promoting inclusion, considering assessment among other aspects, is even more pronounced in PPC A. In this way, the assessment of learning is taken up in the items on student support and inclusive actions.

[Student support]: Actions for permanence and success, leveling and pedagogical support. Item 4 – Strengthen the practice of diagnostic assessment and develop Pedagogical Support actions (“Leveling”) at the beginning of school terms. Description: Carrying out “Diagnostic Assessments” at the beginning of each semester (PPC A, 2022, p. 57).

[Inclusive Actions]: [...] we can mention the adaptation of the assessments made for students with anxiety disorders, increasing the test time and not exposing the student to public presentation work (PPC A, 2022, p. 60).

It is precisely in PPC A that there is a curricular component devoted exclusively to debates about assessment. There are also other components that deal with educational assessment. These data lead us to infer that, on this campus, there is a certain concern with learning assessment, both in the curricular components and in relation to the practices developed. In this PPC, there are elements that indicate a concern to put assessment at the service of students, contributing to their education.

However, there was a certain standardization in the writing of the PPCs with regard to educational assessment, especially at the level of classroom learning assessment. One of the characteristics of standardized writing is the use of numerous concepts or assessment instruments throughout the PPCs without explaining how they will be developed and systematized throughout the course. One example is the

constant mention of self-assessment processes. In all PPCs³, self-assessment is presented in the Learning Assessment sections, however, there is no information on its development or on which conceptions underpin it. As Marlene Corroero Grillo and Ana Lúcia Souza de Freitas (2010, p. 45-46) state, self-assessment is part of the formative assessment proposal, and “[...] presupposes a relationship based on reciprocity and sharing; therefore, it is not reduced to an instrument nor does it take place in a single moment: it is procedural”. However, from reading the PPC, it is not possible to identify whether this is the concept that guides the self-assessments carried out by the IFSP's Chemistry degree courses.

Although the standardized mention is understandable, since the LDBEN and the institution's Organização Didática must be followed, it is understood that the PPC must include the specificities of the courses on its campuses. As Ilma Passos Alencastro Veiga (1998) points out, the pedagogical project is an intentional initiative, and therefore a political action, which requires it to be understood as a constant reflection on day-to-day life. In this sense, although they are courses from the same institution, the IFSP, its campuses and contexts are different, as is its community, which leads us to understand that the projects need to have their own identity.

The same can be said about the description of institutional assessment processes in the documents analyzed. Since 2004, higher education courses have been assessed by the Sistema Nacional de Avaliação da Educação Superior (Sinaes). Law No. 10.861, which establishes Sinaes, states in its article 11 that “[...] each higher education institution, public or private, will set up its own Comissão Própria de Avaliação – CPA”, which is responsible for “[...] conducting the institution's internal assessment processes, systematizing and providing the information requested by INEP [Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira]”. In this vein, when analyzing the PPCs, the section on course assessment describes that the campuses have a CPA, which is responsible for the institution's self-assessment.

³ As an example, we can mention the approach to evaluation in the Instrumentation for Science Teaching or Didactic Laboratory in Chemistry components.

Most of them also mention the Exame Nacional de Desempenho dos Estudantes (Enade), which is also part of Sinaes.

The planning and implementation of the course project, [...] will be evaluated on campus, with the aim of analyzing the teaching and learning conditions of the students [...]. To this end, the participation of the student body, teaching staff and administrative technicians, as well as other possible representations, will be ensured. [...] To this end, the IFSP and the campus, specifically, also have the CPA – Comissão Própria de Avaliação, which acts autonomously and is responsible for conducting the institution's internal assessment processes. [...]. In addition, external assessments will be taken into account, as well as the results obtained by students on the course in the Exame Nacional de Desempenho de Estudantes (Enade) and the data presented by the Sistema Nacional de Avaliação da Educação Superior (Sinaes). [...] According to the results obtained by the course in each of the evaluation processes, improvement action plans are drawn up [...] (PPC C, 2019, p. 53).

Once again, we found a text that appeared to be prefabricated and standardized by legislation, with little information about the real movements being developed. Although the participation of undergraduates, civil servants and teachers in institutional evaluation processes is mentioned, it was not possible to identify how the different voices are taken into account in the construction of alternatives for improving the courses. Does this assessment consist of (or is it reduced to?) filling in the questionnaires drawn up by the CPA? The question remains.

Still on the subject of institutional assessment, there were indications in the description of course management in five PPCs (A, E, C, G and H), which basically deal with the preparation of reports and information-gathering instruments that support self-assessment and generate inputs for updating teaching-learning processes and academic management. They mention the participation of collegiate bodies, teachers and students, but again, there is no clarity about this process, which leads to the inference that it involves filling in questionnaires.

It should be noted, however, that experiencing institutional evaluation can contribute to learning about this level of educational assessment. It is a question of broadening the analysis by looking at the institution as a whole, taking into account internal and external factors in the search to (re)build its social quality (Silva, 2009).

Although it is necessary to collect data for the development of the institution's self-assessment, which can take place via questionnaires, this isolated initiative cannot be understood as institutional assessment. For this to happen, it is essential to debate, qualify data, share responsibilities and negotiate actions. In this way, the data is recognized by its community, which gives it meaning. It is also in this way that data from external assessments, in this case Enade, can be articulated with data from classroom assessments. However, this movement between external assessment data and teacher assessments is not described in the PPCs analyzed. It is worth mentioning that one of the PPCs even highlighted the results of large-scale external assessments. In the course history of PPC B, the concept obtained in the Ministry of Education's assessments is mentioned as a distinction associated with its quality. In this direction, in the section on justification and market demand, a comparison is made with graduates from other institutions, as can be seen in the following fragment:

The Relatório de Curso do Sistema Nacional de Avaliação da Educação Superior, based on data from ENADE 2017, records that the graduates in Chemistry from campus B achieved averages higher than the state, regional and national averages [...] (PPC B, 2019, p. 23).

In the same section, external assessment is mentioned once again. A reference is made to the Programa Internacional de Avaliação de Alunos (Pisa), and it is said that, according to experts, “[...] the poor training of teachers, combined with the lack of infrastructure for practical classes and experimentation in schools, are the main causes of the poor performance of Brazilian students” (PPC B, 2019, p. 23). In addition to the course's strong concern with the quantitative indexes obtained through external evaluations, the document did not include an analysis that considered the various aspects of the institution and its community. We can therefore see the importance given to the relationship between quality and external assessment indices, which shows an approximation with an economic perspective of education, i.e. one that subordinates human formation to the logic of production and reproduction of

market relations, sidelining the knowledge built by the school and its values (Silva, 2009, p. 221).

It is important to note that the institutional evaluation takes the pedagogical project as a reference for analysis, as it is a document that reflects the institution's public commitment to its community (Freitas *et al.*, 2009), and is therefore not based solely on quantitative indices. For this reason, the PPC needs to be “[...] built and experienced at all times, by everyone involved in the educational process [...]” (Veiga, 1998, p. 1), which also concerns the assessment for its reconstruction.

Still based on Ilma Passos Alencastro Veiga (1998, p. 1), it is emphasized that the pedagogical project “[...] is not something that is built and then filed or sent to the educational authorities as proof of the fulfillment of bureaucratic tasks”. Thus, more than just a document for the existence of a course, it is necessary for the PPCs to be conceived collectively and collaboratively by its community, describing what they believe in, what training projects they defend, how they develop them and how they intend to assess them.

6 Conclusions

Understanding the place of educational assessment in teacher training programs presupposes problematizing the initial training of teachers, the teaching-learning process of educational assessment, the challenges they will face in their careers and how their practices can have repercussions on the school lives of many students.

Understanding educational assessment as a central category in the organization of pedagogical work is essential, since the nature of its process can determine the school's trajectory. As such, it must have its place in the training projects of future teachers, expressed in the *Projetos Pedagógicos dos Cursos*.

The documentary and content analyses enabled a set of data to be extracted which, although specific to the structure of the Chemistry degree curriculum, in general

are not far removed from research in the area, i.e. the finding that the teaching and learning of educational assessment in degree courses is relegated to a secondary level. In this sense, the analysis of the curricular components indicates that, of the nine PPCs analyzed, eight address assessment from topics within other curricular components. The dilution of assessment over several topics reveals that the content is presented in a fragmented and disjointed way in most PPCs. This prevents students from understanding the object of knowledge from a perspective of totality within social relations and the educational process itself.

The Didactics components, followed by Teaching Practices, are the privileged spaces for approaching assessment. However, only the level of classroom learning assessment predominates in the syllabus and objectives, to the detriment of the levels of large-scale external and institutional assessment. To disregard these levels is to prevent the conceptual and political instrumentalization of future teachers, especially in a period of systematized advancement of accountability policies whose main tool is large-scale external assessment.

When we analyzed the PPCs beyond the curricular components, we saw a movement towards normative standardization of writing. Despite the need to follow the legislation and guidelines of LDBEN (Brasil, 1996) and the IFSP Organização Didática (IFSP, 2016), what emerged were indications of positions that do not reveal the dynamics and local challenges faced by the course community. We observed a distancing from the history, culture and traits that characterize and give identity to undergraduate teaching courses. This is revealing, because when the local reality is ignored or sidelined, there are few elements left for reflection and possible changes to the PPCs in the face of everyday challenges. In this sense, in the sections of the PPCs that do not deal directly with the curricular components, it is common to mention institutional assessment and even self-assessment. These approaches highlight the participation of staff and students in decision-making, but these actions are not detailed. In this way, it can be said that, to a large extent, the positions described about

institutional assessment and self-assessment processes are restricted to the documents.

In view of the aforementioned, both the characterizations of the curricular components and the analysis of the other sections indicate that educational assessment in the IFSP's Chemistry degree PPCs is presented in a superficial, diluted and disjointed manner. The content covered focuses predominantly on learning assessment, to the detriment of the other levels. Finally, the arrangement of the various topics in the document does not suggest a systematic dialog that makes it possible to understand the reality of the course and the assessment actions undertaken.

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