INTEGRATING PROJECTS AS A MANDATORY CURRICULAR UNIT IN VOCATIONAL EDUCATION COURSES: ADHERENCE OF THE EDUCATIONAL PRACTICES TO THE SENAC PEDAGOGICAL MODEL[1]

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Abstract

The article presents the results of a quantitative-qualitative research with 2.221 teachers who act on the implementation of the new Senac Pedagogical Model throughout Brazil. With a national average of 8.33 points of adherence of the pedagogical practices by the Integrating Project Curricular Units of the courses, the study concluded that the Integrating Projects have been implemented successfully in the Regional Departments. The continued training actions should be expanded, and national strategies should be developed to encourage innovation through projects.

Keywords: Integrating Project. Active methodologies. Vocational education.

1. Introduction

In 2013, the National Department of Senac, together with the Regional Departments, started an important nationwide action to offer vocational education for Learning Courses, Professional Qualification and High-School Level Technical Qualification, called Senac Pedagogical Model (SPM) (SENAC, 2015c). The SPM presents a set of guiding concepts regarding the educational practices carried out at Senac, aligned with the institutional mission of educating for work in trade, services and tourism activities.

Some of the central aspects of the Model are the organization of courses into curricular structures defined as Curricular Units (CU), expressed in National Course Plans; the Senac Formative Marks[2]; the references for assessment and, particularly, the insertion of Integrating Projects (IP) as compulsory CUs of the courses. The IP refers to an educational practice based on active learning methodologies, whose principle is the articulation of competences, through social interactions and sharing of experiences, in the search for solutions to challenges generated in the context of occupation, the object of the vocational training.

In 2017, there were more than 250 thousand enrollments in courses aligned to the Pedagogical Model, filling approximately 70% of the spots offered[3]. Although this percentage indicates that the expansion of the Pedagogical Model is growing throughout the country, there is a need to understand how the educational practices are carried out, within the framework of the principles and guidelines of the Model, and how much they adhere to its premises.

The objective of this research, therefore, was to understand, from the perspective of the teachers, how the Curricular Unit Integrating Project (CUIP), strategic for the articulation of competences that integrate the professional profile and the development of the Senac Formative Marks, has been carried out throughout Senac. Above all, it sought to quantify, using a synthetic indicator, to what level teachers' perception and teaching practices adhere to the developmental assumptions of the Integrating Projects in the courses aligned to the SPM.

There is a need to understand how the educational practices are carried out

Guided by this goal, this article presents the results of the research in six parts. The first one presents the Integrating Project Differentiated Nature Curricular Unit as an integral aspect of the curricular organization of the SPM courses. The next section describes the methodological course of the research. The following items discuss the results, and, lastly, the final discussions and recommendations are presented.

2. The Integrating Project Differentiated Nature Curricular Unit

The SPM, with the aim of providing meaningful learning experiences based on "learning by doing" and on the dialogue between the classroom and the working world, sought references in Active Learning Methodologies, especially in Project-Based Learning (PBL), for the articulation of the competencies of the professional profiles of the courses, and to develop the Senac Formative Marks.

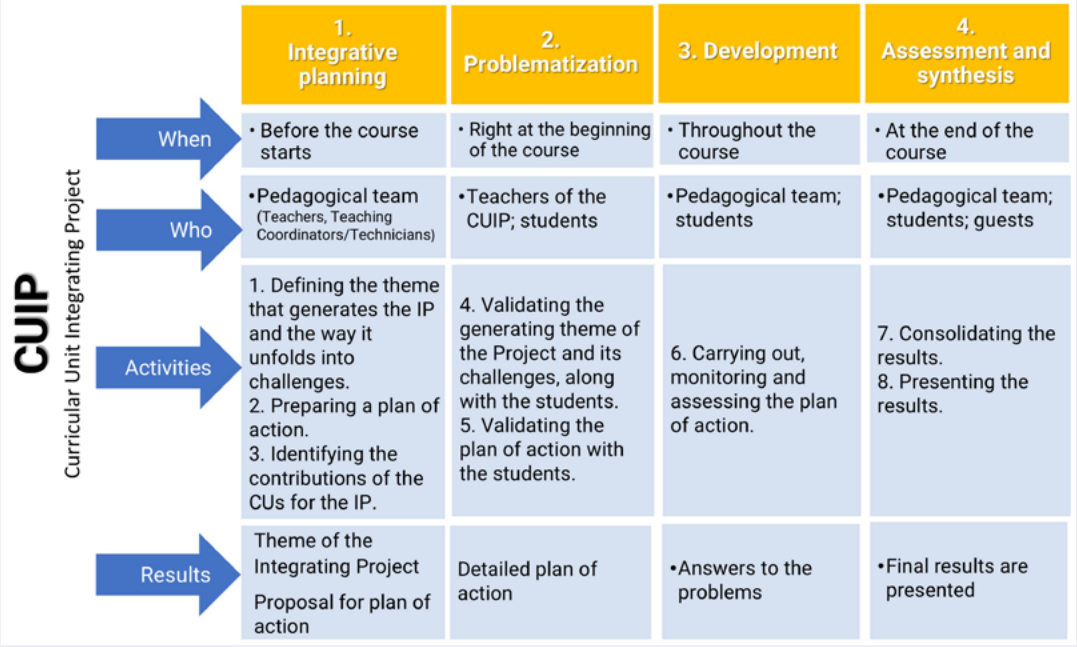
The PBL, whose origin dates back to the New School movement, which emerged between the end of the nineteenth century and the beginning of the next one, in the context of industrialization in Europe and North America, is an active and participatory pedagogical approach, focused on challenges involving the development of all stages of a project – planning, execution, monitoring, evaluation and delivery. Therefore, the experiment begins with the formulation of a challenging problem, which has no easy answer and stimulates imagination and creativity. Different types of knowledge, skills, attitudes and values, as well as teamwork, leadership and critical thinking are articulated and mobilized in the search for answers.

The literature on the subject identifies several researchers whose works contributed to the advancement of pedagogical proposals based on educational projects. Among them are the French scholars Ovide Decroly and Celestin Freinet, as well as Maria Montessori in Italy, and, especially, John Dewey, an important New School name in the United States, and William Kilpatrick, his disciple (SENAC, 2015e). The last two were particularly innovative, assigning to educational projects the characteristic of

pedagogical instruments organized to provide a meaningful experience, based on the assumptions of collective participation, and stimulus to autonomy and decision-making of the students (KILPATRICK, 1967).

In this sense, given the potential of PBL to articulate competencies from situations involving research, hypothesis testing, decision-making and teamwork to achieve the proposed objectives, this approach was brought to the curricular organization of the courses of the SPM. Thus, the CUIP became mandatory for the courses of Trade Quality Apprenticeship, Professional Qualification, High-School Level Professional Technical Qualification and their respective intermediate certifications. The following steps, presented in Figure 1, are foreseen for the development of the CUIP, according to the *Integrating Project Technical Document*[4] (SENAC, 2015c):

Figure 1 - Developmental steps for the CUIPs, according to the Technical Document



Source: Vocational Education Office, Senac, National Department.

Regarding the organizational aspect, the CUIP has a specific timetable (up to 10% of the total course time), a teacher in charge and its own Work Plan for Teachers (WPT), in which the activities to be carried out are detailed, as well as indicators and mentions for student evaluation, both from the perspective of the SPM[5]. Its execution occurs throughout the entire training process, which makes it a co-requisite for the other Curricular Units of the Professional Profile, and imposes a necessity of articulation among teachers, resulting in the integrated planning of a course in which learning situations[6] are presented in each CU, contributing to the completion of the IP. The National Course Plans present suggestions for generating

themes for the IPs, which does not rule out regional adaptations or new formulations that meet the motivations of students and teachers. These characteristics make the accomplishment of the IPs more complex, and its effectiveness will be linked directly to the effective collective and articulated participation between pedagogical team and students.

Aware of this issue, and in accordance with institutional policies for the continuing training of teachers, Senac National Department, together with the Regional Departments, has been investing in teacher training for the subjects of the Model, since the implementation of the Pedagogical Model, with special orientation towards the realization of IPs. The dissemination of the *Collection of Technical Documents of the Senac Pedagogical Model*[7], the implementation of courses, workshops and the on-site orientation of supervisors and pedagogical guides for the development of IPs are strategies implemented in this direction. If, on the one hand, actions of this nature are part of Senac's day-to-day life, on the other hand, there was until now a hiatus of information about how teachers were perceiving and implementing IPs throughout the national territory. The methodological course and the results of the research, topics presented below, seek to contribute to this discussion.

3. Methodology

The study used quantitative research as the main method for collecting and analyzing data, from online questionnaires applied to CUIP teachers (ALVES-MAZZOTTI; GEWANDSZNAJDER, 2004). This methodological option is justified by the need to construct indicative measures for the completion of the IPs in the Regional Departments, in order to obtain qualified information for the management strategies of the implementation of the Pedagogical Model. This characterizes the design of this work as applied research[8].

From the respondents' previous bases, forwarded by the Regional Departments, a sample survey plan was designed to obtain results with a sampling error[9] of 2.5% at the national level and up to 5.0% per Corporate Development Nucleus (North and Midwest, South-Southeast, and Northeast).

Three steps were necessary for the elaboration of the online questionnaires: I) studying the bibliography and elaborating of the item matrix; II) applying the pre-test to teachers of three Regional Departments, analyzing the results and adjusting the instruments; and III) developing the online versions of the questionnaires using the Sphinx software[10].

The items of the questionnaire were written based on the institutional guidelines for the realization of IPs, expressed in the *Integrating Project Technical Document* (SENAC, 2015e). For each item, therefore, there was an expected response consistent with its proper guideline, expressed in the Technical Document. Thus, zero value was attributed to responses that were not in agreement with the parameters and value 1

was given when the answer was in agreement. Since the statements were measured on a scale of agreement with 5 levels (totally disagree, partially disagree, do not agree or disagree, partially agree, totally agree), correct answers were considered to be those in which the teachers agreed partially or totally[11].

This measure intended to verify the degree of conformity between the pedagogical practices

Therefore, the more the pedagogical practice pointed out in the questionnaire by the teacher approached the expected response, the greater the probability that the CUIP provided by the teacher was developed in a manner aligned with the SPM assumptions. This structural logic was the basis for the construction of the CUIP adherence indicator. The calculation of this indicator (I_{adher}) considered the average of the individual indicators of adherence to the CUIPs reached by teachers, expressed in the formula:

$$I_{adher} = avr\ (II_{adher});\ II_{adher} = \frac{(\sum_{i=1}^{17} x_i)}{17}$$

Where: II_{ader} is the individual indicator of adherence to the methodology of the Integrating Project; x_i represents the score in statement.

This measure intended to verify the degree of conformity between the pedagogical practices carried out in the CUIPs and the methodological recommendations for the development of IPs in the Pedagogical Model, referenced in the Integrating Project Technical Document. After the application, validation methods and internal consistency of the information collected in the questionnaires were used to survey the descriptive statistics and analysis procedures (LAROS; PUENTE-PALACIOS, 2004; URBINA, 2007). However, part of the data obtained also underwent qualitative analysis, since the answers were categorized, interpreted and discussed according to their semantic nature (BARDIN, 2009; BOGDAN; BIKLEN, 1994; TUCKMAN, 2005). The analyses presented below were constructed from this methodological path.

4. Profile of the CUIP teachers

The questionnaires were e-mailed to 2,779 CUIP teachers from the Regional Departments from July 19 to August 20, 2017. In total, the National Department received 2,221 responses, reaching a percentage of 83%. According to respondents, Senac's CUIP teachers were predominantly female (63.4%), in the age group between 30 and 39 years old (42.8%), with graduate degrees (70.6%) and with an average of 5 years working with Senac.

Considering that, in the national average, teachers have five years of employment with Senac, and that the implementation of the Pedagogical Model began in 2015, that is, three years ago, it is possible to affirm that most respondents followed this

process since its inception. This is an important finding, because it reinforces the degree of consistency of the answers, since most of the teachers have experienced the implementation actions that have been carried out in the Regional Departments.

It should be noted that the questionnaire was also sent to CUIP teachers who at the time of the research no longer worked with Senac, but who, in the time prior to data collection, developed Integrating Projects in the Institution and, therefore, were on the Regional Departments databases. In total, 76 teachers disconnected from Senac answered the questionnaire, representing 3.4% of the total of respondents.

5. Continued training for working with the CUIP

Senac National and Regional Departments carry out permanent continuing education actions for teachers in order to sponsor the technical development and improvement of pedagogical practices.

Thus, this investigation focused on the teacher's participation in the continued training offered by the National Department, more specifically in the Teacher Training – a Distance Education extension course, offered between 2014 and 2017. In addition, in the Specialization in Teaching for Vocational Education – a Distance Education graduate course, which started in 2010 and whose content was updated after the start of the SPM implementation, and finalized in 2017.

As to the Regional Departments, the study investigated teachers' participation in workshops, study groups, courses, lectures and other strategies carried out by the Regional Department in order to address topics related to the SPM, mainly related to the development of Integrating Projects.

In the national total of the continued training actions offered by the National Department (Teacher Training and Specialization in Teaching for Vocational Education), 16.9% participated in both, 54% of respondents participated partially, i.e. in only one of them, and 29.1% did not participate in any of the training actions offered by the National Department.

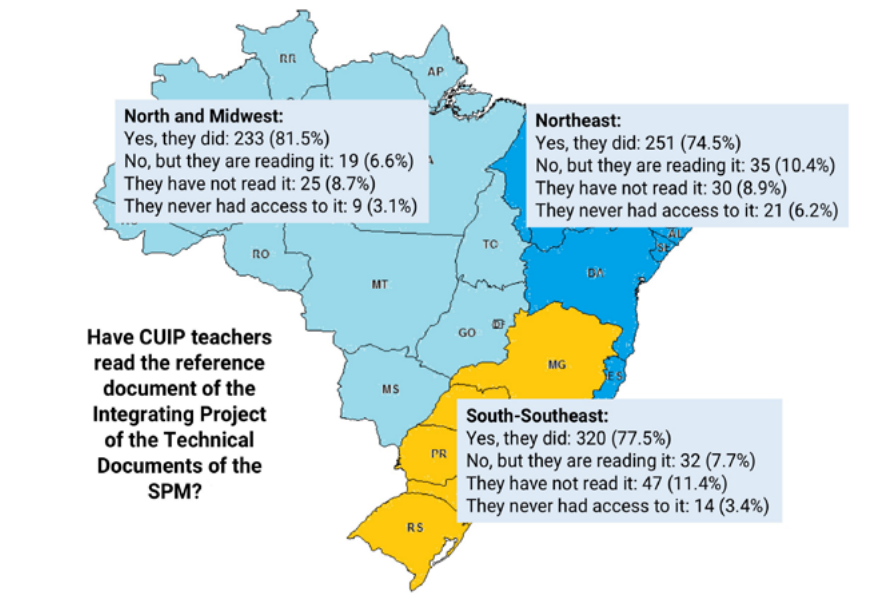
Of the continuing education actions offered by the Regional Departments, 56.9% of the teachers stated their participation. Of these, 18.3% indicated that they also participated in all training courses and 38.6%, up to two continued training courses offered by the Regional Department.

In addition to the training offered by the National Department and by the Regional Departments, the teachers also answered questions specifically about reading and studying of the *Collection of Technical Documents of the Senac Pedagogical Model*. This item was considered crucial for the analysis of the results, since the Collection is the main reference to support teaching practices on the Pedagogical Model. The study identified, specifically, the degree of knowledge of the teachers about the Collection of Technical Documents, since this material has been available since 2015 and has been continuously recommended as fundamental for the practice

of teaching at Senac. Thus, given the importance of the Technical Documents for the teaching practice within the SPM, a hypothesis was elaborated that the greater the teacher's contact with the Technical Documents, the greater the adherence of the pedagogical practices carried out in the CUIP to the premises of the Pedagogical Model. Of the total number of respondents, 73.4% reported having read the *Collection of Technical Documents of the Senac Pedagogical Model*.

Figure 2, below, shows the distribution of the teachers' answers regarding the reading of the *Integrating Project Technical Document*, divided by the Corporate Development Nucleus:

Figure 2 - Reading of the *Integrating Project Technical Document* by Nucleus



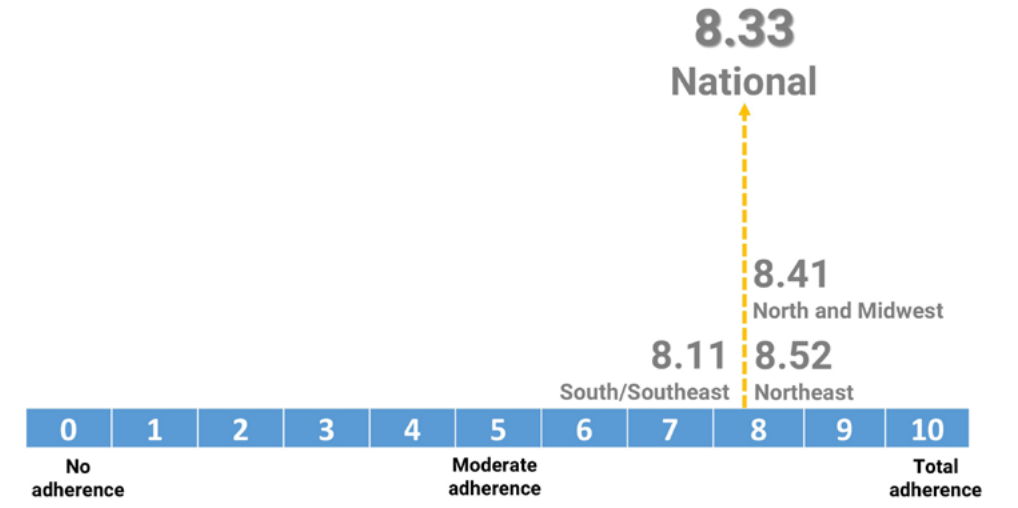
Source: Vocational Education Office, Senac, National Department.

Most teachers participated in some continued training action and read the *Integrating Project Technical Document*. This finding is an important indication that the continued training efforts, with the purpose of enabling teachers to work in the CUIP, have had enough capillarity in the Regional Departments.

6. Level of adherence of the CUIP to the SPM

Graph 1, below, presents the results for the adherence indicator to pedagogical practices carried out at the CUIP at the national level and by the Corporate Development Nucleus, using a scale ranging from no adherence – represented by zero –, to total adherence to the SPM – represented by 10.

Graph 1 – Adherence of the pedagogical practices of the CUIP to the SPM



Source: Vocational Education Office, Senac, National Department.

The result of 8.33 points presented by the adherence indicator of pedagogical practices carried out at the CUIP at the national level can be interpreted as positive for the third year of the implementation of the SPM. It allows understanding that the CUIP has been developed with a high degree of adherence to the expected parameters and in a very similar way among the Corporate Development Nucleus. Therefore, the hypothesis is confirmed that the actions of continued training and study of the Technical Document are producing positive results in classroom. Probably, the pedagogical orientation conducted by the technical teams in the Regional Departments is another variable that may have contributed to the fact that the practices of development of Integrating Projects, reported by most teachers, follow the assumptions of the SPM.

Other qualitative aspects should also be considered for the analysis of this indicator. The first is the fact, already widely debated in the literature on the Theory of Change[12], that in institutions undergoing processes of change there may be forces of resistance and cession, advancement and retreat, proper to the period in which new manners of doing are introduced in the daily work of institutions, representing a breakdown of institutional paradigms. It is worth considering, at this point, that the implementation of the SPM is still in progress, due to finish in 2019, which means that Senac is in the process of changing its pedagogical practices, and so those forces may exist, and even interfere with the operation of the Model.

Second, considering the pedagogical sophistication of the Integrating Projects, which presuppose integrated teacher planning, broad collective participation and development in all other Curricular Units composed of activities focused on the IP issues, without this representing a formal increase in the CUIP, it was to be expected that the faculty needed time for the actions of continued formation and effective practice to present sufficient maturity for the consolidation of a pedagogical routine.

These combined aspects further reinforce the perception that, in reaching the adherence observed in this indicator, the pedagogical practice of developing Integrating Projects in the scope of the Pedagogical Model is, in fact, an important qualitative leap in increasing the offer of vocational education at Senac. It is important to emphasize that the indicator presents a panoramic view of the pedagogical phenomenon, since, when analyzed in detail, it reveals points that require attention from the Regional Departments. This detailed analysis, focusing on the development dynamics of CUIPs, is presented below.

7. Development dynamics of CUIPs

The development dynamics of CUIPs refers to the report of the teachers' practice in each of the development stages of the IPs, as well as to their perception about the participation of the students and other CUs for the realization of the IP.

7.1 Integrated Planning

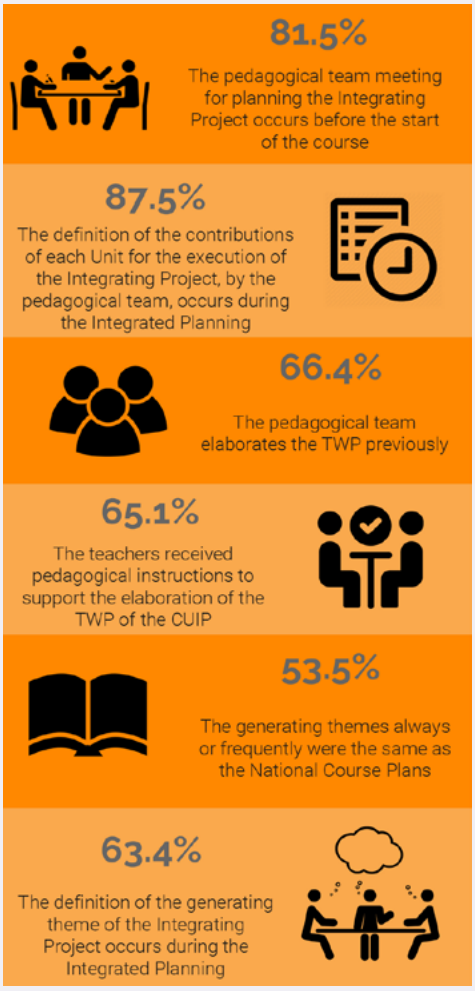
Integrated planning must take place before the beginning of classes

According to the *Integrating Project Technical Document*, integrated planning must take place before the beginning of classes, with the objective of "organizing, in a collaborative manner, the pedagogical actions of the course and the training objectives to be achieved" (SENAC, 2015e, p. 14).

The results show that this practice is actually taking place, as indicated by most respondents (81.5%). According to 63.4% of teachers, the generating theme was defined at this stage, and 87.5% of teachers stated that each CU contributed during integrated planning. These are positive aspects that reinforce the relevance of integrated planning as a decision-making and internal organization step for IP.

The preliminary elaboration of the TWP by the pedagogical team is a strategic choice of the Regional Department. For 66.4% of teachers, their TWPs were, in fact, previously elaborated by the pedagogical team. It should be clarified that, although

Figure 3 - Integrated planning according to the teachers inquired



Source: Vocational Education Office, Senac, National Department.

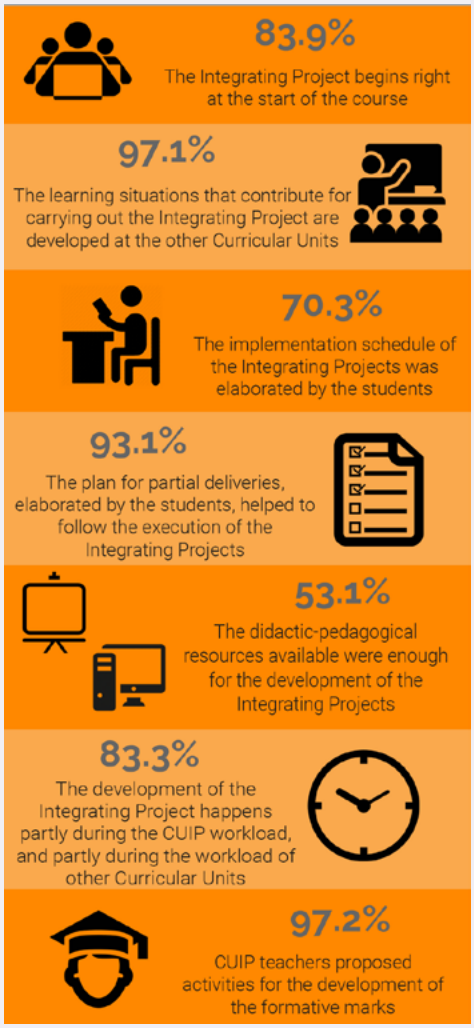
the TWP can be previously prepared by the pedagogical team to establish a quality standard of the practices to be carried out, the teacher is instructed so that the learning situations are re-planned according to the needs and characteristics of the class. This presupposes support and pedagogical guidance by the technical teams of the Regional Department.

7.2 Development of the IP

As a co-requisite of the other CUs, the IP should begin right when the course starts, and the problematization stage – carried out with the students – is the starting point for its development. At this stage, the IP theme and its challenges must be debated, organized and validated. A proposal of a schedule of activities to be carried out by the students is also elaborated at that moment. For most respondents (83.9%), in line with the guidelines, the development of the IP occurs effectively at the beginning of the course and, for 70.3%, the schedule was really made by the students.

A large part of the respondents, 93.1%, agreed that the partial delivery plans helped to monitor the execution of the IPs, and 97.2% said they had proposed activities for the development of Formative Marks, indicating that these points are being carried out successfully by CUIP teachers. However, when questioned about the adequacy of available didactic-pedagogical resources, just over half (53.1%) said they were enough, which points to something that could be improved.

Figure 4 - Development according to the teachers inquired



Source: Vocational Education Office, Senac, National Department.

7.3 Synthesis and assessment

According to the *Integrating Project Technical Document*, the synthesis is the moment when the students reflect on the route taken to solve the problems and challenges presented during the Project; the assessment happens through specific indicators throughout the CUIP.

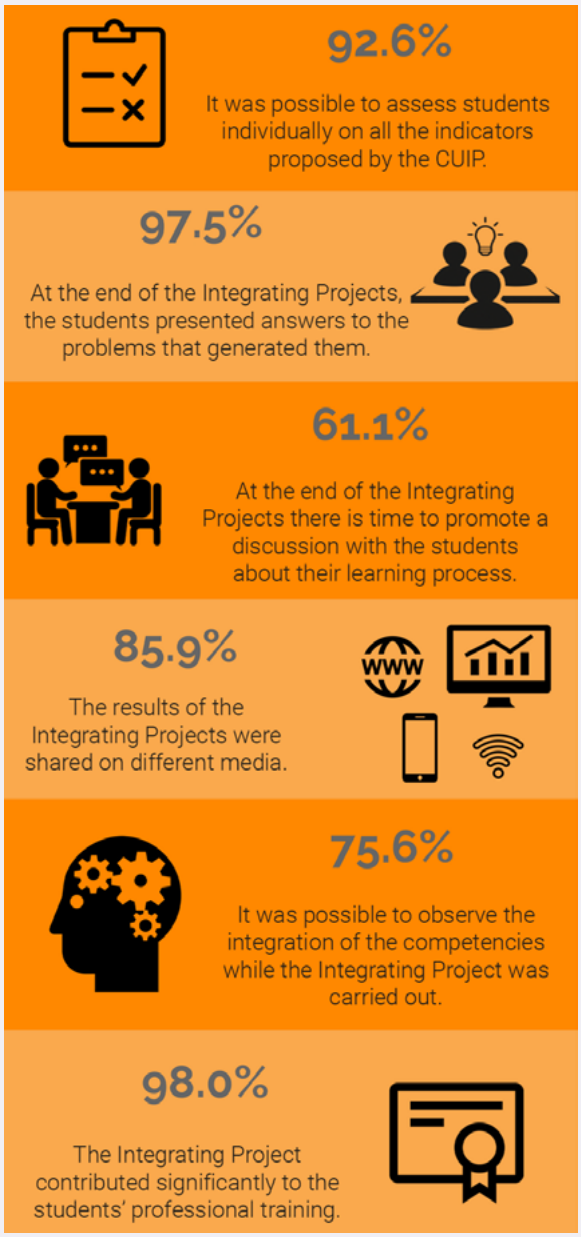
In addition to assessing students based on the indicators, teachers should also identify: evidence of the Senac Formative Marks in solving the challenges presented; the articulation of the course competences in the development of the IP; the elaboration and synthesis of the IP, responding to the specifications of the generating theme; and the presentation of the results of the IP with coherence and creativity, proposing innovative solutions based on the critical view of professionals from the segment (SENAC, 2015e , p. 21).

The results point that almost all teachers stated that it is possible to evaluate individual students using the proposed indicators (92.6%). According to 97.5% of the teachers, the students presented adequate answers to the problems and challenges; 85.9% stated that the students shared the results found on different media.

For 98% of the respondents, this pedagogical experience contributes to the students' professional training. These are important indications that the IPs were finalized and evaluated with enough quality for most teachers. However, 38.9% of them indicated that they had not promoted a discussion with the students at the end of the CUIP due to lack of time, and almost a quarter of teachers said that the integration of competencies could not be observed. These findings allow some reflections.

First, although almost all teachers stated that it was possible to carry out the evaluation following the premises of the Pedagogical Model, by not returning the evaluations and talking to the class about the development process of the IP, hearing the students'

Figure 5 - Synthesis and assessment



Source: Vocational Education Office, Senac, National Department.

considerations, the evaluation seems to have followed the more traditional route for this practice, at least for part of the teachers[13]. That is, probably, for almost 40% of teachers, the formal aspects of the evaluation practices had more weight thank the dialogue and the promotion of reflection by the students, hence the tendency of teachers to prioritize other actions and, at the end of the IP, there is no time left for the necessary analysis of the whole process.

Secondly, it is worth mentioning the percentage of teachers (24.4%) who stated that the integration of Professional Profile competencies could not be observed. Considering that integration is the major purpose of the CUIP, it is possible that interesting and satisfactory results have been achieved without the necessary articulation between the Curricular Units, when prioritizing one competency or another.

It should be pointed out that the Technical Document states that the learning experience and the articulation of the competences lived throughout the process are more important than the results themselves, with the moment of synthesis, in which students and teachers discuss the process of realization of the project, having great pedagogical importance. These possible mismatches between the pedagogical objectives and the practical results of the Integrating Project are a phenomenon that should be considered in the pedagogical guidance strategies of the Regional Departments.

7.4 Student participation

Student participation is essential for the development of Integrating Projects. Although the Technical Document instructs the pedagogical team to carry out a previous survey of generating themes, to develop a proposal for a plan of action, and to define the contributions of each CU, these aspects must be validated by the students.

Student participation is essential for the development of Integrating Projects

For 87.4% of the teachers, the validation of the generating theme of the Integrating Project occurred early in the CUIP. For 92.9%, the activities and responsibilities related to the plan of action were defined together with the students, and the same percentage of teachers stated that in each CU the students performed activities related to the IP. These numbers indicate that teachers have provided enough pedagogical conditions for student participation, with the autonomy and leadership necessary for the accomplishment of the IPs, as instructed by the Technical Document.

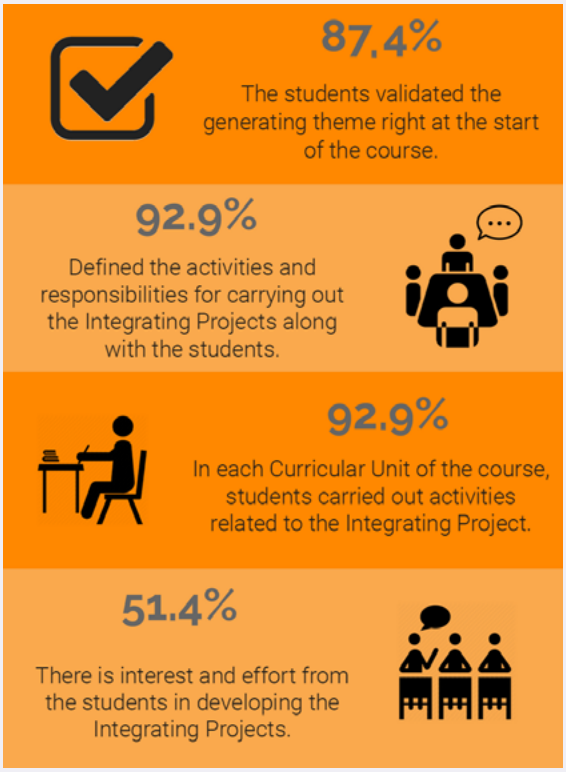
One point that deserves attention is that, when they argue about the interest and commitment of students in the development of IPs, almost half of the respondents stated that they perceived low interest and lack of commitment on the part of students in the development of this action.

The apparent mismatch between the results of the IPs and the motivation of the students can be explained by the teacher's perception regarding aspects associated to the classroom dynamics, such as behavior, discipline and interest of the students, which can affect perception on this topic. On this aspect, it is important to highlight that the Pedagogical Model, by proposing the national alignment of the curricula of

the Technical Vocational Qualification, Professional Qualification and Trade Quality Apprenticeship courses and orienting the pedagogical practice carried out in the classroom, leads to substantial changes in the way vocational education happens at Senac. It is possible that by bringing the student to the center of the pedagogical scene, the teaching action focused on the development of skills and the requirement of the collective work inherent to the realization of the Integrator Project are contributing to overcoming rooted pedagogical practices, which is probably not happening without conflict.

Still in the field of hypotheses, it is possible that this phenomenon is perceived, both by teachers and students, as an "way out of the comfort zone", considering that both subjects, to a lesser or greater degree, come from regular education systems in which educational practices with predominantly traditional characteristics still prevail[14]. This element, however, needs a comprehensive approach to be better clarified.

Figure 6 - Student participation



Source: Vocational Education Office, Senac, National Department.

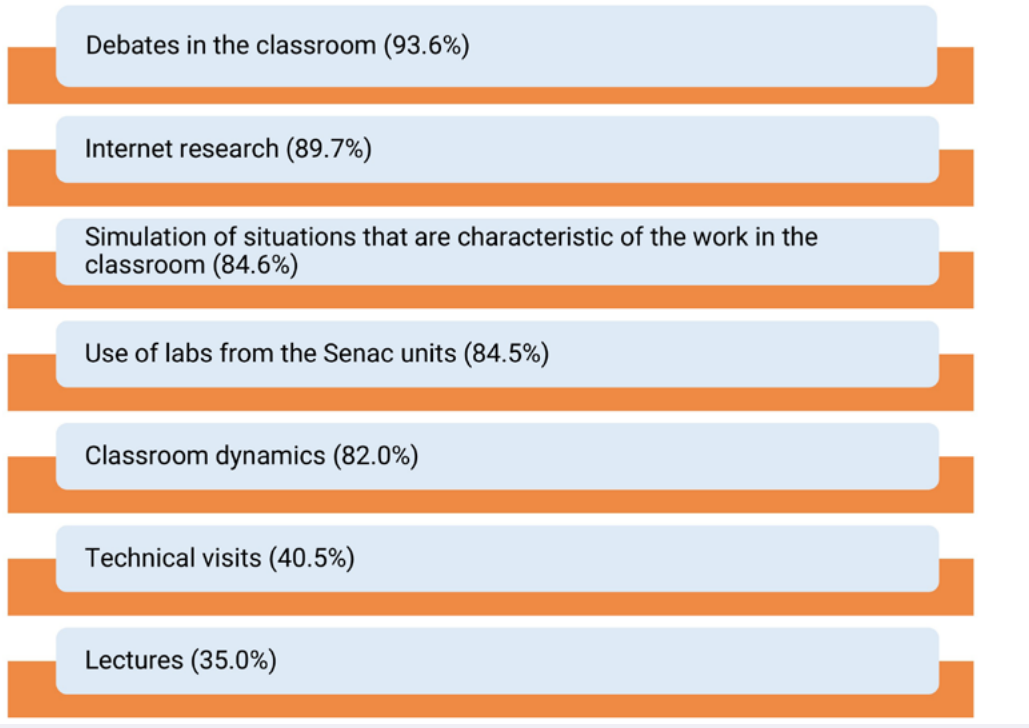
7.5 Participation of the other CUs for the IP

The participation of other CUs to carry out the IP is an explicit guideline of the *Teaching Plan Technical Document* (SENAC, 2015e). This document also states that the TWP of the CUs of a given course must contain clearly the connection between the competencies of the professional profile, its indicators, the learning situations

described and the evaluation elements and strategies, in addition to how the Curricular Unit has to contribute to the IP. This is, therefore, essential for the observance of the Regional Departments implementation teams, especially regarding the technical capacity to evaluate the quality of the activities of inputs for the realization of IP.

In this sense, 84.2% of the respondents evaluated the participation of the other CUs for the resolution of the IP as good; 14.5% as a regular; and 1.3% rated it as bad. When asked about the type of pedagogical activity most commonly used by teachers of other CUs as a contribution to the development of the CUIP, the following answers were given, shown in the following table:

Chart 1 - Main input-production activities for accomplishing the Integrating Project



Source: Vocational Education Office, Senac, National Department.

Teachers also mentioned, with less occurrence: brainstorming; dramatizations/ theater; games; mental maps; field research, and interviews.

7.6 Development of the Senac Formative Marks

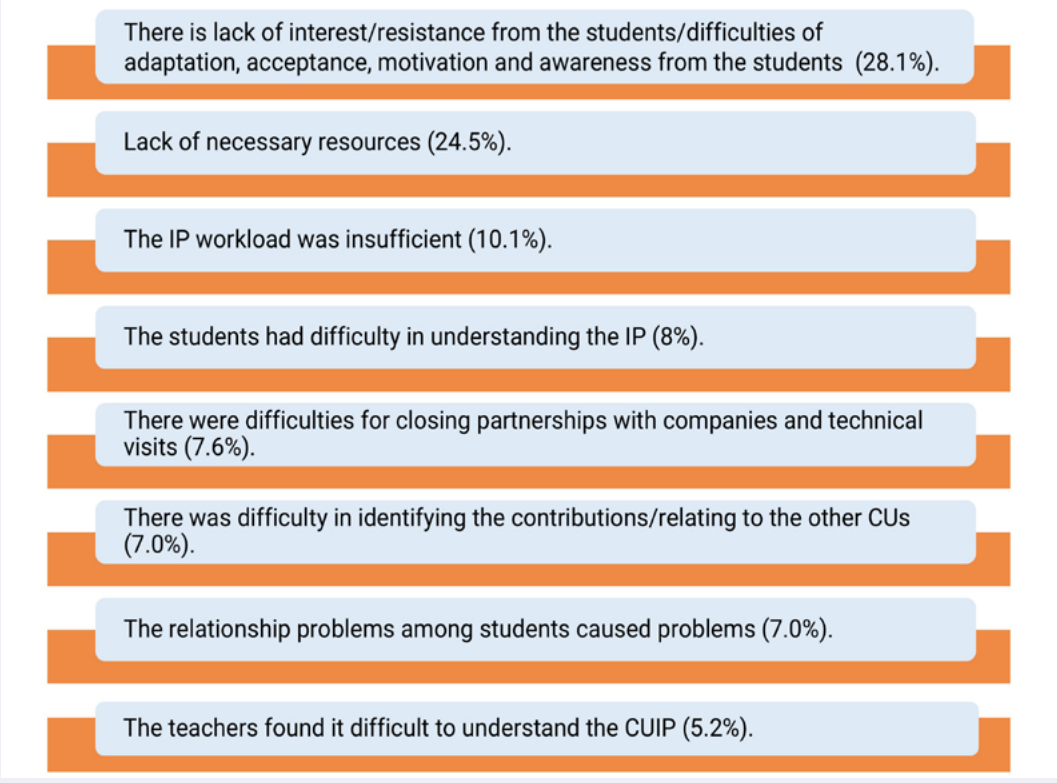
The study investigated whether activities were carried out in the other CUs to develop the Formative Marks throughout the course, as well as whether it was possible to observe their development during the IP. If, on the one hand, almost all CUIP teachers claim to have proposed activities for the development of the Senac Formative Marks (97.2%), on the other hand, 76.8% of them stated that the development of the Senac Formative Marks could be observed.

This draws attention to a possible mismatch between what is planned in terms of activities for the development of the Senac Formative Marks and what teachers actually observe from students. One hypothesis to be investigated is the understanding of evaluative practices, to verify the development of the Formative Marks in the CUIP and in the other CUs. According to the results, these teachers probably understand that the process of evaluating Formative Marks is separated from the evaluation of the Curricular Units, that is, the one carried out through the competence indicators, which can therefore generate difficulties in observing the development of the Formative Marks throughout CUIP. The way in which CUIP teachers and the teachers of the other CUs are evaluating the development of the Formative Marks is a fact that emerged during this research and that should be explored by the pedagogical teams in the Regional Departments.

7.7 Difficulties faced by the CUIP teachers

At the national level, most respondents stated that they did not find it difficult to execute the CUIP (68.4%), a perception similarly felt in the three Nucleus. In the universe of respondents who reported having perceived difficulties to develop the CUIP, when asked to identify them, the following list was reached:

Chart 2 - Main difficulties related by CUIP teachers



Source: Vocational Education Office, Senac, National Department.

In relation to the variables of teacher training and difficulty in the development of CUIP, it was detected that among teachers who said they had difficulties in the implementation of CUIP, 78 (24.2%) did not read the reference document of the IP of the *Collection of Technical Documents of the Senac Pedagogical Model*. Thirty-seven teachers from this group (47.4%) also did not participate in any teacher-training actions.

As seen previously, reading the Technical Document and participating in teacher-training actions, although associated to some degree with adherence to the CUIP, do not necessarily appear as a factor linked to the difficulties perceived by the teachers. Again, the teacher/student relationship appears in the respondents' reports, this time perceived as a factor that causes more difficulty for the development of IPs. It is clear that this points to a need for greater attention to the implementation of actions and programs that create conditions that facilitate teaching and learning situations in vocational education. However, it should also be mentioned that, to some extent, this phenomenon reflects a current picture of the Brazilian educational scenario, which presents issues of low performance and school backwardness, besides the mismatch between the interests of the students and the pedagogical practices developed in the school[15].

Considering that, by proposing practices centered on active learning methodologies, the SPM puts the student at the center of educational action, it is expected that during this moment of didactic-pedagogical transition the difficulties perceived by teachers are, precisely, relational in nature.

8. Final considerations

With a national average of 8.33 points of adherence of the pedagogical practices of the CUIP to the SPM, it is possible to conclude that the IPs, as an important action of the SPM, have been implemented satisfactorily on the Regional Departments. However, some aspects deserve special attention.

The results evidenced the importance of the continued training actions developed with the teachers, an element directly associated to the quality of the teaching practice. The challenge, therefore, is to implement actions of formative impact that have immediate use and good cost-benefit. For the Regional Departments, the Technical Reference Documents of the Pedagogical Model should be disseminated widely, and the pedagogical teams should elaborate Pre-Teaching-Work-Plans, of the teacher's CUIP and of the other CUs, since this strategy was considered an important variable for the good development of IPs.

One point that should be noted is the power of the Integrating Projects in presenting, through results, possible innovative solutions. Innovation is a value dear to Senac, therefore, it is necessary to organize strategies that promote and permanently sponsor the culture of innovation in the Institution. In this sense, the IPs tend to be a

promising path, especially if their generating themes are aligned with the real issues of the local productive sector. Other institutions that integrate the Autonomous Social Services have shown promising experiences with IPs as a source of innovation[16]. However, it is also worth noting that the results showed the potential of stimulating innovation through the IPs, the CUIP focuses on the pedagogical nature of the articulation of the competencies of the professional profile of the courses.

Finally, an aspect that needs more qualitative reflection, given the limits of this work, rests on the mismatch between the students' interest and their participation. According to the teachers' evaluations, as seen in the results, one of the main difficulties for the execution of the CUIP was the students' lack of interest and motivation. However, the teachers recognize that the students' participation is satisfactory. This contradiction should be better investigated, with the students who participated in the IPs as target audience for future approaches.

Notes

[1]This research is an inter-agency action carried out by the Prospecting and Educational Evaluation and the Educational Development Management of the Vocational Education Office of the Senac National Department.

[2]The Formative Marks are characteristics to be evidenced in the students throughout the training process. They derive from the educational principles and institutional values that govern the Senac Pedagogical Model and, thus, represent the commitment of the Institution with the integral formation of the professional citizen. As Formative Marks, it is expected that the professional trained by Senac evidences a technical-scientific mastery of their professional field, with a critical view of the reality and the actions they perform, presenting entrepreneurial, sustainable and collaborative attitudes, acting with focus on results (SENAC, 2015c, p. 15).

[3] According to the production data of Senac/DN December/2017.

[4] It integrates the *Collection of Technical Documents of the Senac Pedagogical Model*. Available from <http://www.extranet.senac.br/modelopedagogicosenac/index.html>.

[5] About assessment indicators, for Integrating Projects and other Curricular Units, see: Senac (2015a).

[6] About learning situations and Teacher's Work Plans, see the technical document *Teaching Plan*. (SENAC, 2015d).

[7] The Collection of Technical Documents was elaborated creatively, with participation from all Regional Departments. Currently, it contains nine volumes that talk about the central themes of the Senac Pedagogical Model. Available from <http://www.extranet.senac.br/modelopedagogicosenac/index.html>.

[8] Research carried out for practical purposes driven by the need of knowledge for immediate application of results (ROLL-HANSEN, 2009).

[9] The sample error is the difference between the result value obtained in the sample and the real population.

[10] Software for structuring online questionnaires and collecting answers.

[11] The answers were made compatible when the respondent was expected to disagree, totally or partially, with some assertion.

[12] About the Theory of Change, see Lima (2003).

[13] According to the *Technical Document Learning Evaluation*, returning the evaluations, the moment when the teacher discusses the results together with the student, is a point that deserves special attention to increase the quality of the evaluation. In vocational education, the return must have the goal of developing competences, and its agenda must be responding to the indicators, carried out in a precise and constructive manner. In this sense, the action of reflecting on the results with the student, analyzing with them what they gained and which aspects still have need improvement, and how to get there, contributes greatly to the full development of the competencies of the professional profile (SENAC, 2015a).

[14] The traditional approach to teaching is still common in regular schools in Brazil. In this type of approach, the focus is on the teacher, who holds knowledge and passes them on to the student, usually in lectures. The student has goals to meet within certain deadlines, which are verified through periodic assessments. From this perspective, there is a focus on student's accumulation of knowledge and success in assessments such as the National High School Exam (Enem) and the college entrance examination (CORDEIRO; OLIVEIRA, 2015).

[15] About this subject, see the Brazilian Basic Education Yearbook, available from <https://www.todospelaeducacao.org.br//arquivos/biblioteca/anuario_educacao_2016.pdf>.

[16] One example is the Senai Integrating Projects Challenge, launched by the National Service of Industrial Training in 2015. For more information, see <portaldaindustria.com.br/senai/canais/desafio-senai-de-projetos-integradores>.

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