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Changes in Assessment Approaches in a Process of Educational Innovation: a multiple case study in Catalonia (Spain)

Cambiamenti negli approcci valutativi in un processo di innovazione educativa: uno studio di caso multiplo in Catalogna (Spagna)

di

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Abstract:

The aim of this article is to present those elements of assessment approaches that change as a consequence of a process of educational innovation. To this end, a multiple case study in which seven schools in Catalonia (Spain) that are implementing this innovation was carried out. The results obtained, through the analysis of semi-structured interviews and acquired documents, indicate different changes in assessment approaches at two different levels – in the school and in the classroom – and each of them with two aspects of change: organizational and curricular. This article focuses only on the classroom level. The results show that for a greater use of formative assessment and student involvement. As a main conclusion, the study highlights the need for a reformulation of assessment practice, aligning it with the new teaching and learning that is being developed.

Keywords: assessment approach; classroom improvement; organizational changes; curricular

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changes.

Abstract:

L'obiettivo di questo articolo è presentare gli elementi degli approcci di valutazione che cambiano come conseguenza di un processo di innovazione educativa. A tale scopo, è stato condotto uno studio di caso multiplo in cui sette scuole in Catalogna (Spagna) che stanno implementando questa innovazione. I risultati ottenuti, attraverso l'analisi di interviste semi-strutturate e documenti acquisiti, indicano alcuni cambiamenti negli approcci di valutazione a due livelli diversi - a livello scolastico e in aula - e ciascuno con due aspetti di cambiamento: organizzativo e curricolare. Questo articolo intende presentare e discutere i risultati relativi al livello aula. L'analisi dei dati mostra un maggiore utilizzo della valutazione formativa e un maggior coinvolgimento degli studenti. Come principale conclusione, lo studio evidenzia la necessità di una riformulazione della pratica valutativa, allineandola con il nuovo processo d'insegnamento e di apprendimento che si sta sviluppando.

Parole chiave: approccio valutativo; miglioramento della classe; cambiamenti organizzativi; cambiamenti curriculari

1. Introduction

According to different studies (Jarl et al., 2021; Liljenberg & Andersson, 2021), what makes a school successful, especially when implementing educational improvements and changes, are its organizational and curricular characteristics. Changing educational practices with the aim of improving them necessarily involves deciding what the contents or focus of the innovation will be. In the case of the seven schools included in the sample of this study, the contents of improvement revolve around three axes: cooperative learning, teaching and learning competences and didactics through interdisciplinary learning itineraries. However, introducing and implementing changes in some elements of educational practices leads, in turn, to changes in other elements that are not directly part of the contents of the improvement. In order to give continuity and validity to the educational improvement and innovation introduced in the school, it is necessary to review/check that there is an alignment and coherence between all elements of the teaching, learning and assessment process (Ciani et al., 2020; Scriven, 2009).

This change in the educational approach means that the assessment approach that has been carried out until now is, fundamentally, no longer valid, because it runs the risk of ceasing to be aligned with the new organizational and curricular proposal. It is therefore essential, from this perspective, that in educational innovation processes new approaches are built on the assessment practices that are already developed.

It is for this reason that the hypothesis put forward in this research is that the implementation of changes and improvements in relation to the aforementioned contents will lead to changes in assessment practices at different levels. These changes can be identified at both the school and classroom levels and, in turn, can be both organizational and curricular. This article focusses only in classroom level changes. Therefore, the question guiding this study is: what kind of elements/aspects of assessment practices change as a result of the introduction of non-assessment focused, content-based educational improvement and innovation?

The general purpose of this article is to identify the aspects of the assessment approach at the classroom level that change as a result of an educational innovation process implemented within the framework of an improvement project consisting of three areas - cooperative learning, competency-based teaching and learning, and interdisciplinary learning itineraries - in order to accompany the alignment of the assessment approach with the teaching-learning process. There is no intention to study or analyze innovation *per se*, or the three dimensions of improvement.

2. Assessment Approaches at the Classroom Level: Organizational and Curricular Changes

The development of educational innovation processes causes changes, sometimes unforeseen, at different levels. Based on the structure established by the 2014 OECD study on education innovation, below we provide a tour of some different aspects identified as susceptible to change, at the classroom level, from an organizational and curricular perspective.

Introducing new didactic proposals is one of the basic aspects in the development of a project of innovation and improvement of a school's assessment practices (Koenen et al., 2015), and it has an impact, above all, on the aspects of organizational change at the classroom level.

Cooperative learning. The first organizational aspect susceptible to change at the classroom level is materialized, in this study, with the introduction of cooperative learning through the *Programa CA/AC* (Pujolàs et al., 2011). This program has two distinct characteristics. First, it has a double purpose: to develop cooperative learning as a didactic proposal and as curricular content. Second, it unfolds through the introduction of three areas that entail group cohesion, the introduction of cooperative structures and the introduction of resources to organize teams. The objective is to meet the two conditions required for an activity structure to be cooperative: equitable participation and simultaneous interaction. Thus, if cooperative learning is introduced, it is necessary to check that these two conditions are met. For this reason, it is essential to assess it in two senses. First, in the assessment of both individual and team learning of an activity carried out within a cooperative structure; and second, assessing the structure of participation and activity of the different team members – that is, the degree to which the team complies with the proposed cooperative structures (Johnson & Johnson, 2014; Naranjo & Jiménez, 2015) because if they are not fulfilled it would not be cooperative learning, but rather group work.

Co-teaching. The second organizational aspect susceptible to change at the classroom level is the cooperation between the teachers, which is essential for this innovation to be integrated as an organizational practice. One way to achieve cooperation between teachers is through co-teaching (King-Sears & Strogilos, 2020; Shavard, 2021). This practice encourages reflection and feedback on the teachers' praxis since they share knowledge, practices and doubts in order to understand, discuss and agree not only on the appropriate co-planning of the co-teaching, but also on how the co-instruction and co-assessment will be carried out (Ianes & Cramerotti, 2015; Suárez-Díaz, 2016).

Focusing on the curricular changes at the classroom level, this article highlights three of the most important aspects of change within the complex ensemble of assessment: the moments of the assessment; the decisions and actions in relation to the assessment; and the assessment agents.

Moments of the assessment. The first aspect is the moments of the assessment. In an educational innovation such as the one implemented in this study, it is important to review the initial and formative assessment during the academic year in order to improve and subsequently align the

teaching-learning-assessment process. A review, especially of the initial assessment that, according to most studies, is absent (Carless, 2011; Koenen et al., 2015; Kulasegaram & Rangachari, 2018). With the implementation of the initial and formative assessment, with a higher degree of the formative, the students' metacognition is promoted more than if the assessment is only focused at the end of the process. Linked to the promotion of metacognition is how communication of the assessment results is carried out: if focused on the improvement of the learning process and not so much on the mark or grade, and if a transfer of competencies to the students takes place. Promoting these three aspects (metacognition, identification of improvement in the learning process and transfer of competencies) supports the development of the students' self-regulation and autonomy (Adachi et al., 2017; Fuentes-Diego & Sicines-Talledo, 2018; Van den Akker, 2018; Van den Boom-Muilengurg et al., 2021). The use of formative assessment entails, in turn, certain obstacles that need to be borne in mind when reviewing assessment practices so that it affects the whole process – obstacles such as the varied conception of assessment and the teacher's role in it; the lack of commitment to the assessment standards; and the lack of communication standards for student feedback. These obstacles might be due to lack of practice and involvement of teachers in assessment or to their lack of training in assessment practices (Fuentes-Diego & Sicines-Talledo, 2018).

Decisions and actions in relation to assessment. It is also necessary to make different adaptations in the second aspect susceptible to curricular change at the classroom level, namely in the decisions and actions in relation to assessment. This aspect is divided into four assessment decisions and actions: on the instruments to collect information and evidence of student learning; on correcting; on communication of the results; and on the assessment tasks (Carless, 2011). First, these decisions and actions have to be adapted to the innovation that is being implemented, with a change of the tests written by other instruments and authentic assessments that are more aligned with the innovation (Capperucci, 2011; Paniagua & Istance, 2018; Tessaro, 2013).

Second, if the focus is on the decisions and actions regarding correction, communication of the assessment criteria must be carried out and adapted with the students in order to turn them into learning criteria. The assessment criteria should be shared, specified and explained so that the students become more aware of the whole process of teaching-learning-assessment, and thus increase their responsibility in the quality and assessment experience and become more self-critical (Carless, 2014). Third, in relation to the decisions and actions regarding how to communicate the results of the assessment, this will depend on the type of feedback given, formative (or not), which will allow (or not) a continuity between the teaching-learning process and the assessment and will increase (or not) the responsibility of the students in their own process and develop autonomy, helping them in their subsequent learning (Cornoldi et al., 2020; Li & Grion, 2019).

Fourth, and finally, the decisions and actions on the assessment tasks, in the sense of change towards authentic assessment activities, are based on contextualized situations close to the students so that the opportunity to participate in social practices is encouraged, which is one of the goals of school education (Capperucci, 2016; Carless, 2014; Moretti et al., 2017).

Agents. All educational innovation affects, in theory, the third aspect susceptible to change within the complex ensemble of assessment; that is, the different agents involved, especially their degree of participation. If the teaching staff take an approach to assessment that focuses on heterogeneity, self-assessment and co-assessment, the degree of student participation increases and the assessment is

more effective (Cornoldi et al., 2020; Li & Grion, 2019). Many studies aim to focus the objective of the assessment on the students, since the benefits are the changes generated in the totality of the assessment experience (Koenen et al., 2015; Kulasegaram & Rangachari, 2018). In this way the students' co-responsibility in the learning process is also increased. This increase in participation causes, in turn, a change in the role of the teacher, since the students are more actively involved and the teacher is the one who guides the process. This change can give rise to difficulties, such as the difficulty of transferring control of the teacher over the class or fear of blurring the hierarchy between the students and teachers (Black et al., 2010). If these difficulties are faced and the degree of student participation increases – through cooperative learning, which is when the students have a greater degree of responsibility, as is done in this study – it is important to anticipate how the students' participation will be assessed.

3. Method and Materials

3.1 Objective

The research question is: What aspects of the assessment approach change at the classroom level as a result of an educational innovation process?

In order to answer this question, the specific objectives of this research are:

- to identify the elements/aspects that change in assessment practices at the classroom level
- to identify the specific nature of the changing elements/aspects of educational assessment: whether they are organizational or curricular

To respond to the objective of this research, a qualitative case study methodology is used (Merriam, 1998; Stake, 1995).

3.2 Participants

In this study, seven cases corresponding to seven schools taking part in a process of educational innovation participated. This innovation project was designed to be carried out over four academic years. The educational-constructive counseling process was based on two parallel training and counseling processes: cooperative learning based on the *Programa CA/AC* (Pujolàs et al., 2011); and the creation of interdisciplinary and competency-based learning itineraries. Both processes were carried out by university teachers whose educational research is linked to them. In the development of the project, a strategy was devised for its implementation at classroom and school level, starting with a group of teachers. As the project progressed, the number of participating teachers gradually increased until it reached the entire teaching staff by the end of the third academic year.

We followed three criteria to select the schools: that they were in the third year of the training/advisory process for the implementation of the innovation so as to guarantee a minimum level of development; that they included several of the educational stages (early education from 3 to 6 years; primary education from 6 to 12 years; and compulsory high school education from 12 to 16 years); and that they had different institutional contexts. The schools chose the twenty-three teachers that participated in the interviews, following three selection criteria: that the different educational stages were all represented; that they were in an advanced stage of implementation of the innovation; and that they were tutors of their academic year. The distribution of teachers in the schools of each case, are outlined in Figure 1.

Case	Educational stage			Class groups
	Early Education	Primary	Compulsory Secondary	
1	1	1	1	4
2	1	1		3
3	2	1	1	1
4		1	3	2
5	1	2	1	3
6		3	3	3
7	1	3		2

Figure 1. Distribution of the participants

3.3 Data collection instruments

We used two instruments to collect information: an in-depth semi-structured interview with the teachers, and the collection of different documentation of the seven cases. The in-depth semi-structured interview is divided into three parts: a general part on assessment practices; another on assessment changes focused on the three dimensions; and one on the aspects the teachers consider that innovation impacts. The purpose of collecting the documents was to explore the different aspects of change of the assessment practices. To do this, different documentation of the two areas was collected. First, the *classroom* area, which included assessment tests, regulations and assessment criteria, exams, programming of the subjects and the interdisciplinary learning itineraries, rubrics, classroom reports, teachers' notebooks, cooperative learning assessment documents: team plans, session diaries, self-evaluations and co-evaluations, etc. And second, the area of *teaching and learning and assessment activities*, which included evidence of the tasks carried out by the students. This documentation was selected by the participants themselves at the request of the researchers regarding evidence of the changes in the assessment practices of the whole school.

3.4 Categories of Analysis and Operative Criteria

From an inductive-deductive process based on the literature and on the answers given by the participants of the study, two levels were identified in the changes that occur in the assessment approaches as a result of the introduction of the educational innovation process: changes at the school level and changes at the classroom level. This article focuses only on the classroom level. In each of these levels there were two different aspects of change: *aspects of organizational change*, those changes in the organization of the assessment that varied in the classroom from the more general to the more specific (Figure 2); and *aspects of curricular change*, which, in the case of classroom curricular changes, since they are more extensive, are structured around changes in the assessment moments (Figure 3), the assessment decisions and actions (Figure 4), and the assessment agents (Figure 5).

Dimensions of change	Subdimensions	Operational analysis criteria
Organizational changes	<i>Shared teaching:</i> Joint design and development of the teaching-learning process by two or more teachers	<i>High:</i> shared teaching is a daily reality of the school <i>Medium:</i> shared teaching takes place sporadically at the school <i>Low:</i> shared teaching does not take place at the school
	<i>Cooperative structures:</i> Use of cooperative structures in the teaching-learning activities so that all the team members participate equitably and interact simultaneously in the activity.	<i>High:</i> cooperative structures are introduced in the assessment practice of all subjects and the structures themselves are also assessed <i>Medium:</i> cooperative structures are introduced in some assessment practices of some subjects and are assessed or not <i>Low:</i> cooperative structures are not introduced in the assessment practices, nor are the structures themselves assessed

Figure 2. Dimensions of analysis of the organizational changes at the classroom level

Dimensions of change	Subdimensions	Operational analysis criteria
Curricular changes	<i>Assessment moments</i>	
	<i>Initial assessment:</i> Use of the initial assessment by the teacher to adjust the teaching-learning process.	<i>High:</i> the teacher uses activities to assess knowledge prior to the start of all didactic units, assignments and interdisciplinary learning itineraries <i>Medium:</i> the teacher uses activities to assess knowledge prior to the start of some didactic units, assignments and interdisciplinary learning itineraries <i>Low:</i> the teacher does not use activities to assess knowledge prior to the start of the didactic units, assignments and interdisciplinary learning itineraries
	<i>Formative assessment:</i> Change to an assessment of reflection and regulation of the teaching-learning process through assessment.	<i>Regulation process:</i> Assessment practices focused on the pedagogical / regulatory function. <i>Metacognition of the student:</i> Promotion of self-reflection (awareness and decision-making) of one's own learning process. <i>Metacognition of the team:</i> Promotion of shared and cooperative reflection (awareness and decision-making) of the learning process in a team.

Figure 3. Dimensions of analysis of the curricular changes at the classroom level. Assessment moments

Dimensions of change	Subdimensions	Operational analysis criteria
Curricular changes	<i>Decisions and actions regarding assessment</i>	
	<i>Assessment instruments:</i> <i>Adaptation of the written assessment test:</i> Adaptation of the written assessment test. Rethinking the need and usefulness of the written test.	<i>High:</i> when the written test is integrated into the assessment program as just one more situation and is used in consonance with the innovation that is being implemented <i>Medium:</i> the written test has more weight/prevalence in the assessment program than other situations and is not fully in consonance with the innovation that is being implemented <i>Low:</i> when the written test is the only assessment task used and there is no change regarding the innovation that is being implemented
	<i>Correction/grade assessment activities:</i> Communication of the assessment and correction criteria.	<i>High:</i> the assessment criteria of the activity are presented at the beginning of all activities <i>Medium:</i> the assessment criteria of the activity are presented at the beginning of some activities <i>Low:</i> the assessment criteria of the activity are not presented for any activity
	<i>Contextualized assessment tasks:</i> Use of assessment tasks close to the students' reality, for the transfer of what they have learned to use in real contexts.	<i>High:</i> all the material used in the different assessment activities is contextualized and has been created by the teachers <i>Medium:</i> some material used in the different assessment activities is contextualized and has been created by the teachers <i>Low:</i> no material used in the different assessment activities is contextualized

Figure 4. Dimensions of analysis of the curricular changes at the classroom level. Decisions and actions regarding assessment

Dimensions of change	Subdimensions	Operational analysis criteria
Curricular changes	<i>Assessment agents</i>	
	<i>Hetero-assessment:</i> The primary assessment agent is the teacher. <i>Self-assessment:</i> The assessment agent is the student, through the student's self-assessment. <i>Co-assessment:</i> The assessment agents are the students in a team, through peer assessment, the members of a team, between teams, or individually of the other members of the team. <i>Shared social regulation:</i> The assessment agents are the students, through self-assessment depending on the help offered to the teammate.	<i>High:</i> students are the main and active agent in their assessment and learning process, accompanied by the teacher <i>Medium:</i> the main assessment agent is the teacher, although the student participates, not regularly, in some of the assessment situations <i>Low:</i> students participate passively in their assessment and learning process. The main agent is the teacher.
	<i>Teacher role change:</i> Adaptation of the teacher's role to educational innovation.	<i>High:</i> the teacher adjusts to the innovation of the educational practice and also introduces changes in his/her praxis based on the innovation <i>Medium:</i> the teacher introduces some change in his/her praxis based on the innovation, although s/he does not fully adjust to the innovation of the educational practice <i>Low:</i> the teacher does not adjust to the innovation of the educational practice, and nor does he/she introduce any change in his/her praxis based on the innovation
	<i>Student participation in cooperative activities:</i> Assessment of student participation.	<i>High:</i> the participation of both the team and each member in all the tasks is assessed <i>Medium:</i> the participation of both the team and each member in some of the tasks is assessed <i>Low:</i> neither the participation of the team nor of each member in any of the tasks is assessed

Figure 5. Dimensions of analysis of the curricular changes at the classroom level. Assessment agents

3.5 Instrument of Analysis

To analyze the collected data, an *ad hoc* instrument was developed, constructed in an inductive-deductive manner through the answers of the interviews with the participating teachers, as well as the reference literature related to the object of study. The aim was to identify those aspects of the assessment practices that underwent organizational and curricular changes at the classroom levels. The operational criteria presented below evaluates the degree to which the changes in the assessment practices were realized at the classroom level. This *degree of realization*, which was used in subsequent analyses, would be defined as the degree to which the aspects of change in the assessment practices were carried out. The degree of realization is divided into three types: high (H), when the aspect being assessed is fully realized; medium (M), when the aspect being assessed is partly realized; and low (L), when the aspect being assessed is not realized; and each type of degree is defined according to the aspect of change in the assessment practices that is being analyzed.

3.6 Procedure

The data collection procedure was carried out over three months. First, the twenty-three participants in the semi-structured interviews in the seven cases signed the informed consent form. Next, the documentation of the assessment practices of the seven cases was collected for subsequent analysis, which was carried out in an inductive-deductive manner. For this, all the units (contributions in interviews and document excerpts) in which there were implicit or explicit references to the stated objectives were identified. These units were grouped into various initial categories, which were progressively revised and refined. The categories finally obtained constitute one of the results of the study, which is why they were presented in detail in the previous section.

For the analysis as a whole, a consensus procedure among judges was systematically followed, aimed at establishing a common protocol for identifying and assigning the different categories: independent coders assigned the categories to the data and checked the results, discussed any disagreements and solved them by fine-tuning the corresponding operational criteria. In the event of persistent disagreement, a third coder acted as a judge, leading, likewise, to an improvement of the operational criteria to be applied. Once the protocol had been established, the mean reliability of the coders, which was calculated through Cohen's Kappa Index applied to the independent coding of a sample of 40 contributions, was greater than 0.9 for all the dimensions analyzed. With the final instrument that was obtained, all the data collected from the interviews with the teachers and from the documentation collected was analyzed.

For the analysis of the different interviews, the dimensions of the analysis instrument were used to categorize them using Atlas.ti software. In the different interviews, different documents were mentioned as examples of what the study participants were explaining. From these examples, not only were these documents collected but also others that could show the different changes made in the assessment practices at the classroom levels. To analyze these documents, as was done with the interviews, they were entered into the Atlas.ti software and categorized according to the different dimensions of the analysis instruments presented in order to find evidence of what was explained by the participants in the different interviews and thus contrast it. However, evidence was also found in the documentation that the participants had not mentioned in the interviews, which was introduced in

the results and which provided more precision to the different changes that had been introduced in the assessment practices.

4. Results

The results obtained in each of the cases will now be presented, divided into two groups: the results at the classroom level of 1) the organizational changes and 2) the curricular changes.

4.1 Results of the organizational changes at the classroom level

At the classroom level, in the aspects of organizational change (Figure 6), the four cases that carried out co-teaching in the interdisciplinary learning itineraries stand out, especially in primary school education. In almost all of the cases the cooperative structures are introduced beyond the innovation slot. However, they are not used regularly and they are not even evaluated to understand if they are working and following the guidelines. Only one case has implemented interdisciplinarity as a project in all the schools and with all the subjects; the other six are still carrying it out only in the innovation slot and within the interdisciplinary learning itineraries. Regarding competency-based programming, three of the cases have already implemented competency-based programming in all the subjects; in the other four it is done in the innovation slot.

Cases	Results
Case 1	With regards to shared teaching, in early education there are two teachers; in primary school it is not done – a support person can only enter in the innovation slot; and in high school there are co-tutorials. Cooperative structures are used in the interdisciplinary learning itineraries and in some activities of any subject, even though the structures per se are not assessed.
Case 2	Shared teaching cannot be assessed due to lack of evidence. Cooperative structures are used in other subjects not only in the innovation slot, although they are not assessed.
Case 3	Shared teaching is used in the innovation slot, where there are two teachers in the classroom. They do not assess the cooperative structures but they are used in the innovation slot and in some activities of any subject.
Case 4	Shared teaching and also cooperative structures are used in the innovation slot in primary school, where the cooperative structures are sometimes assessed doing the session diary in some subjects like Spanish in correction segments; but it is not reflected in the grades. In high school the cooperative structures are used in the innovation slot and in correction segments of mathematics, but they are not assessed.
Case 5	Shared teaching is used in the innovation slot in primary school, where a third person enters the classroom for a few hours. In high school there are two teachers in the classroom. They used cooperative structures in the interdisciplinary learning itineraries and in some subjects, but they are not assessed.
Case 6	In the innovation slot in primary school, there are three tutors and a support person, so the shared teaching is used. It does not occur in high school. In primary school, cooperative structures are used in almost all subjects, although they are not assessed. They are used in high school with reluctance and because management requires them.
Case 7	Shared teaching cannot be assessed due to lack of evidence. Cooperative structures have been introduced beyond the innovation slot, but they are not assessed per se.

Figure 6. Results of the organizational changes at the classroom level

4.2 Results of the curricular changes at the classroom level

In the aspects of curricular change, with regard to assessment moments (Figure 7), all the cases gave importance to the initial assessment and the diagnostic function, although they used it only at the beginning of the course and only in two cases was it taken again during the course. The formative assessment that is linked to the teaching-learning process was also increased, although it is used more

in the innovation slot. An example of this is this excerpt from Case 4: “(Assessment activities are carried out) to see if they really know how to reflect on how they work, that they know how to work, on how they know to work, on what they need to improve, but I believe it goes even further, on a human level, on an integrative level it makes you know the student better, what capacities they have for managing a situation, communicating, how they communicate, how they express themselves, how they work in a team”. Nevertheless, in most cases student and team metacognition was only carried out in the innovation slot, with the use of self and co-assessment and not in other moments and in other subjects. Only one case implemented the regulation process with a document guide and did the metacognition practice in all the learning activities. However, the final assessment still carries more weight for six of the seven cases.

Cases	Results
Case 1	Initial assessment is carried out in the innovation slot and in some topics of other subjects, in some cases using cooperative structures. Regarding formative assessment, different assessment situations are used to regulate the process, not only assessment situations in the strict sense of the term. Metacognition of the student is carried out in specific activities and when necessary qualitative comments are used more often and especially in the innovation slot. Metacognition of the team is carried out in the interdisciplinary learning itineraries, where tools and time are provided in the sessions to fill in the session diary (not in all) and the team plan at the end of the interdisciplinary learning itinerary and through co-assessments.
Case 2	Initial assessment cannot be evaluated due to lack of evidence. Regarding formative assessment, the regulation process is used mainly in the innovation implementation slot. Student metacognition is carried out above all in the innovation slot through self-assessment in session diaries, although learning objectives are also shared and remembered in other subjects. Team metacognition is carried out in the interdisciplinary learning itineraries using the different tools and through co-assessments.
Case 3	Initial assessment in primary school is carried out in the innovation slot. In high school, there is an initial assessment but students are not aware of it. Regarding formative assessment, different assessment segments are carried out to promote the regulation process, and reflection is more on the student's personal level. Student metacognition is executed in the innovation slot via self-assessment in the session diaries. In other subjects students are asked to set learning objectives and to assess them throughout the didactic unit, although not by all teachers. Team metacognition is performed especially in the innovation slot with the use of co-assessment and the team plan, as well as between teams; in some subjects they undertake a co-review of work carried out by others.
Case 4	Initial assessment is carried out and this information is only retrieved sometime later but not systematically, nor is it marked in the programming. Regarding formative assessment, the regulation process is more present now. Before the introduction of the innovation they focused more on finishing the syllabus, but now they focus on the students' learning and on whether or not they acquire the competencies. In the innovation slot, the assessment activities are linked and form the backbone of the interdisciplinary learning itineraries. Student metacognition is effectuated in the innovation slot with a self-assessment in the team plan and session diary. In some assessment activities, reflection on the learning process is promoted, providing written and oral feedback using a rubric or checklist in high school after the teacher's correction. Team metacognition is carried out with the tools that are given in the interdisciplinary learning itineraries and through co-assessments.
Case 5	In primary school, initial assessment is carried out in the innovation slot. In high school, it is also done in the innovation slot and in the social science subjects. It is not clear what is done with the results later. Regarding formative assessment, for the regulation process the assessment tests are used within the teaching-learning process, with reflection by the students. Student metacognition is performed doing self-assessment both in the innovation slot and in some subjects. Metacognition of the team is carried out in the interdisciplinary learning itineraries.
Case 6	In primary school, initial assessment is done at the beginning and repeated at the end of the didactic unit and in the innovation slot. In high school, it is also done in the innovation slot, but it is not done again. Regarding formative assessment, accompanying images are introduced in the subjects for the regulation process. Student metacognition is performed in the innovation slot with self-assessment and based on the session diary and team plan, and in other subjects they redo the initial assessment. In mathematics the objectives are specified and there is a space for the students to place the quantitative grade and the teacher's grade is qualitative. In high school, a diary is used in all activities to exercise student metacognition, with questions for reflection about what they have learnt. Team metacognition is implemented in the innovation slot with co-assessments based on the session diary and team plan and in other subjects recovering the initial assessment. In high school, they keep a diary on all activities with reflection questions regarding what the student can contribute to the team.
Case 7	Initial individual and group assessment are done and taken again during the learning process and before the final assessment. Regarding formative assessment, to implement a regulation process they used the document guide of assessment activities to move towards a more formative assessment. They also used new ways within the teaching-learning and assessment process, preserving key work methodologies, and new technologies for reflection on the student's process, as well as providing opportunities to redo the work and to work by blocks rather than by subjects. Student metacognition is carried out starting when they set learning objectives with each student, which are reviewed during the teaching-learning and assessment process. Whenever the teacher gives a corrected activity to a student, he/she is asked to reflect on: "what have I learnt, what have I made mistakes in, and how can I improve?" They also used self-assessment team plans and session diaries. Team metacognition is effectuated when learning objectives are set at the team and classroom level and are reviewed during the teaching-learning process and assessment. After an activity the student is always asked: "What has been good for us to learn?"

Figure 7. Results of the assessment moments in the curricular changes at the classroom level

Within the assessment decisions and actions (Figure 8), educational innovation has promoted the contextualization of the material used; they are still using the book in only one case. With regards to rethinking the written test, the cases choose different options: taking a written test with a competency question; not taking the written test; or integrating the written test in the teaching-learning process, assigning it the same percentage in the grade as the other assessment activities. This can be seen in the following excerpt from the interview in Case 5:

“We also try to have a competency question that is usually the question that helps to complete, to round off the grade, and include a question they have to expand on. And we sometimes also introduce a question where they have to explain what they have learned”.

In the correction/grading activities, four cases shared the assessment criteria prior to any assessment activity, although it was very focused on specific subjects such as languages, and the remaining three shared the learning objectives rather than the criteria.

Cases	Results
Case 1	The adaptation of the written assessment test cannot be assessed due to lack of evidence. They only communicate the assessment and correction criteria in some activities and especially language criteria. They contextualized assessment tasks in early and primary school education; in high school they are combined with the book.
Case 2	Tests are started from third grade onwards, so the adaptation of the written assessment test is carried out by changing direct questions for open questions. In early education, learning objectives are shared but criteria are not, so they do not communicate the assessment and correction criteria. They use the book, although some activities created by the teachers are introduced, so there are only a few contextualized assessment tasks.
Case 3	The adaptation of the written assessment test is carried out using more competency-based exams. In the innovation slot they do not use exams. In primary school they do not communicate the assessment and correction criteria only the learning objectives; and in high school, only at the beginning of the terms. All the assessment tasks are contextualized and have been created by the teachers.
Case 4	They do not adapt the written assessment test, but the percentage of the written test is the same as the other assessment activities that are carried out in all subjects. They communicated the assessment and correction criteria especially in the innovation slot. In primary school they did so in some subjects, and more so in languages. This also the case in high school, although if they have not thought about the criteria, they do it together with the students. In primary school all the assessment tasks are contextualized and in high school it is being introduced in the subjects.
Case 5	The adaptation of the written assessment test is carried out by adding a competency-based question and sometimes a reflection question on the learning process itself, and in primary school there is no final test but rather assessment activities throughout the process. In primary school the learning objectives, but not the assessment and correction criteria, are commented on; and in high school this is done at the beginning of the didactic unit. In primary school all the assessment tasks are contextualized, while in high school this is only done in the innovation slot or some areas as projects.
Case 6	The adaptation of the written assessment test cannot be assessed due to lack of evidence. In high school, at the beginning of the year, they communicated the assessment and correction criteria. The material has been contextualized and has been created by the teachers both in primary and high school.
Case 7	The adaptation of the written assessment test cannot be assessed due to lack of evidence. The assessment and correction criteria are communicated, although the curricular criteria are more difficult to transmit. All the assessment material is contextualized and has been created by the teachers.

Figure 8. Results of the decisions and actions regarding assessment in the curricular changes at the classroom level

To summarise, in relation to the assessment agents (Figure 9), students are more active in the assessment practices, although in six cases hereto-assessment continues to carry more weight. The teachers encourage this student participation and also adapt their assessment practices in accordance with the innovation, although one of the difficulties identified by the teachers in all the cases was that of differentiating individual learning from team learning. It is important to highlight that, in two of

the cases in which the observation criteria in the classroom are defined, the collection of evidence of the students' individual process was fostered. Students also participated with rubrics of self and co-assessment of their participation in the team and in the activity, although in five of the seven cases this happened especially in the innovations slot. With regard to the adaptability of the teacher, it was made clear that they must have tools and strategies to respond to any situation *in situ*.

Cases	Results
Case 1	Hetero-assessment is the most frequently used form of assessment, although in primary school some assessment base with the students has been carried out. The teacher's role has been changed, especially with regards to the teacher's own flexibility and in the activities and the change in the type of assessments, which are more qualitative and are more involved in the whole innovation process, but this is not generalized. Student participation in cooperative activities is implemented, especially in the innovation slot in which self- and co-assessment is used.
Case 2	Hetero-assessment, self-assessment, co-assessment, shared social regulation and the teacher's role change cannot be assessed due to lack of evidence. Student participation in cooperative activities is higher in the innovation slot.
Case 3	Hetero-assessment is the most frequently used form of assessment, although in the correction segments there is more student participation. The teacher's role has been changed, especially in the innovation slot, although some of the changes are introduced in other subjects. There is more student participation in cooperative activities in the innovation slot on account of the use of the self- and co-assessment.
Case 4	Hetero-assessment continues to be the most frequently used form of assessment, but in primary school they are given the opportunity to redo the activities, especially in language. In high school, it is more frequently used in the correction segments. The teacher's role has been changed in primary school because the correction is done for the student's reflection. In high school, the teacher now plays a more accompanying and less punitive role.
Case 5	The teacher continues to be the main agent in the assessment, leaving very little participation to the students. However, the change in their role cannot be assessed due to lack of evidence. Student participation in cooperative activities has increased in the innovation slot because self- and co-assessments are carried out in some subjects.
Case 6	The teacher has delegated some responsibility to the students using different assessment segments. In high school, some activities are assessed by the students and they do self-corrections. The teacher's role has been changed by the use of elements of the innovation slot in different subjects. In primary school, student participation in cooperative activities is carried out using self-assessment and individual tutorials; and in high school, individual and team reflection diaries of each activity are used. In the innovation slot, self- and co-assessment, session diaries and team plans are used.
Case 7	There is high student participation in the assessment is high, which is increasingly agreed upon with the student and carried out using orientation bases. Changes in the teacher's involves the use of elements of the innovation slot in different subjects. Student participation in cooperative activities has increased significantly using self- and co-assessment in all subjects, and in the innovation slot session diaries and team plans are used.

Figure 9. Results of the assessment agents in the curricular changes at the classroom level

5. Discussion

The discussion and conclusions of the study are presented below. To do this, we provide a comprehensive response to the proposed objectives, which were:

- to identify the elements/aspects that change in assessment practices at the classroom level
- to identify the specific nature of the changing elements/aspects of educational assessment: whether they are organizational or curricular.

The structure of the discussion follows the same logic as the theoretical framework and the results of the study. First, organizational changes at the classroom level; and second, curricular changes at the classroom level.

Regarding *aspects of organizational change at the classroom level*, the use of cooperative structures, not only in the interdisciplinary learning itineraries but also in other subjects, stands out. This accentuates the use of cooperative structures, although the manner in which this is carried out by the

members of the team of apprentices is not evaluated. This evaluation would be essential to guarantee the equitable and simultaneous participation of all the team members, as Johnson & Johnson (2014) and Naranjo & Jiménez (2015) point out in their studies. The fact that co-teaching is not consolidated in every case is in contradiction with the studies that defend it as an essential element of an efficient school, since it is key to promoting reflection and feedback when teaching and learning processes are designed and developed in an interdisciplinary manner (Ianes & Cramerotti, 2015; King-Sears & Strogilos, 2020; Shavard, 2021; Suárez-Díaz, 2016).

In relation to *aspects of curricular change at the classroom level*, from a general perspective, it is evident that in teaching-learning contexts in which educational innovation is implemented, if compared with the other contexts, the assessment is more dynamic and involved, and both teachers and students participate. First, the assessment is structured with the aim of including the three moments: initial, during the process and end. In the initial assessment, importance is given to the diagnostic function of the assessment, (Carless, 2011; Koenen et al., 2015; Kulasegaram & Rangachari, 2018; Naranjo & Jiménez, 2015). However, it remains unclear, as Carless (2011) emphasizes, how the information that is collected in the initial phase activities to capture prior knowledge affects the modification or improvement of subsequent development in the itinerary. Nevertheless, the assessment is gradually moving towards a formative assessment that is conducted in a number of ways: allocating and dedicating time to promoting the metacognitive capacity of students; reflecting together with the students in a large group, in teams and individually; carrying out self and co-assessments to increase student participation and awareness of the whole process; and promoting self-responsibility and autonomy through different instruments (Adachi et al., 2017; Fuentes-Diego & Sicines-Talledo, 2018; Koenen et al., 2015; Kulasegaram & Rangachari, 2018; Naranjo & Jiménez, 2015; Van den Akker, 2018; Van den Boom-Muilengurg et al., 2021). In spite of this, both the students and the families continue to have a numerical conception of assessment. To change this, the students could be present in the process of creating this assessment practice, participating in decisions such as the assessment criteria, or even more broadly, as Koenen et al. (2015) propose, by explaining to the students the pedagogical function of the assessment throughout the assessment process. In contrast, the final assessment continues to carry more weight in the assessment process.

Second, and continuing with the *aspects of curricular change at the classroom level*, in the assessment decisions and actions, specifically in relation to the assessment instruments used, a variation of the written test was carried out that aimed to be more competency-based and authentic, as well as more integrated within the assessment process (Capperucci, 2011; Paniagua & Istance, 2018; Tessaro, 2013). In the correction/grading activities, the assessment criteria are mostly shared with the students before carrying out the task, in addition to increasing their responsibility for their own assessment and that of their classmates in different activities. This need for self-regulation by the students and promoted by the teachers has also been highlighted by Carless (2014) and Koenen et al. (2015). In the activities for communicating the results (feedback), the students are not always accompanied with the specification of the assessment criteria or with adequate feedback, something which Cornoldi et al. (2020) and Li & Grion, (2019) defend to improve the teaching-learning process. If we move to the assessment tasks, the materials used are contextualized and bring the learning

content closer to the reality of the students. This enables them to perceive its immediate usefulness and the link with their daily lives (Capperucci, 2016; Carless, 2014; Moretti et al., 2017).

Third, and finally, and continuing with the *aspects of curricular change at the classroom level*, and in relation to the assessment agents, the objective of the assessment is focused on the students (Kulasegaram & Rangachari, 2018). Students are encouraged to participate more in the assessment experience through two actions: increasing their presence in it through self and co-assessment (self and co-responsibility for their learning process and autonomy) and their participation and involvement in different assessment situations, although not in the whole assessment experience as Koenen et al. (2015), Kulasegaram & Rangachari (2018) propose. In relation to teacher adaptability, a change of approach that moves from a test culture to an assessment culture is necessary so that innovation can be implemented (Fuentes-Diego & Sicines-Talledo, 2018), although in this study there seems to be a difficulty in transferring control from the teacher to the students (Black et al., 2010). With regards to the assessment of individual learning within the cooperative activities, as Naranjo & Jiménez (2015) explain, a more specific planning of the task set is required, a precise definition of the task: the required participation and the result to be achieved by each member. This definition is especially important for group products. A proposal for improvement in this regard is to ask a question related to the contents learned cooperatively within a written test. This helps individual and group differentiation of learning and supports the teacher in making decisions regarding the didactic planning and future activities.

6. Conclusion

In summary, assessment practice needs to be aligned and be more coherent with the teaching-learning process, with a reformulation of assessment criteria and instruments. Furthermore, it is essential to make an explicit decision about what the assessment results are in the service of within the general framework of the teaching-learning process, and with what function. It should not be forgotten that a change in one system causes changes in other systems that were unforeseen, which is why focusing this research on aspects that are not typical of innovation contributes an element of great importance for an alignment of the teaching-learning-assessment process (Ciani et al., 2020; Scriven, 2009).

We cannot conclude without commenting that the main limitation of the study is that with the participation of seven cases, the identification of the changes at the classroom level is not exhausted since it would be necessary to contrast them in other situations and with a greater number of schools. Finally, this research may be useful for education professionals in a double sense. First, it points to the importance of the process of reflection and joint and consensual decision-making with regards to what aspects of the assessment should be changed in order to guarantee its coherence with the elements of change of the teaching-learning process within a process of innovation. And second, the analytical instrument of this study is not only an assessment instrument of the aspects of organizational and curricular change at the classroom level. It is also an instrument of reflection on one's own praxis in training and/or advisory processes for teachers that are immersed in educational innovation processes, which leads not only to innovation at the individual teacher level, but also, and above all, at the institutional level. An analytical instrument of analysis that can also be used in the school's internal assessment process, and that, in turn, can be extrapolated with adaptations to any educational assessment context.

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