Spain: Cooperative Learning and the Challenges of Teacher Preparation

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Abstract

In this article, I analyze the experience of Spain - a country that in recent years has found itself at the epicenter of educational reforms combining ambitious legislative changes with a deep crisis of trust in teacher education. On the one hand, Spain demonstrates a commitment to innovative methodologies - cooperative learning, interdisciplinary approaches, active pedagogies, enshrined in the LOMLOE law [7]. On the other hand, the country faces alarming realities: according to TALIS 2024 data, Spain is the only OECD country where less than 70% of teachers consider their teacher training adequate; only 57% of secondary school teachers positively evaluate their initial training, which is significantly below the OECD average (77%) [3], [4]. The PISA 2022 results recorded Spain's worst historical performance in mathematics - 473 points [1], [2]. Relying on the research of Torres-Soto and her colleagues on the Interdisciplinary Cooperative Proposal (PIC) in the preparation of future teachers [6], as well as on TALIS 2024 data [3], [5], I show that the Spanish experience is a classic example of how innovative pedagogical practices, remaining local and fragmented, cannot compensate for systemic problems in teacher training. I also show that the Spanish model, despite all its external attractiveness, fundamentally diverges from the communicative-cognitive framework of personality (CCFP) model: it remains at the level of methodological innovations, does not offer a systemic approach to the development of mental mechanisms, and does not realize the epistemological significance of educational reforms [11], [12].

Keywords: Spain, LOMLOE, cooperative learning, PIC, teacher education, TALIS 2024, PISA 2022, teacher preparation, communicative-cognitive framework of personality.

Introduction: Why Spain

Spain is a country that in recent years has become a kind of laboratory for educational reforms in Europe. On the one hand, one of the most progressive educational laws on the continent has been adopted here - LOMLOE (Ley Orgánica de Modificación de la LOE), which enshrines cooperative learning and emotional education as key elements of school practice [7]. On the other hand, the Spanish education system is experiencing a deep crisis of trust: PISA results are falling, teachers criticize their own training, and reforms remain at the level of declarations [1], [3].

Here it is appropriate to recall the image of Don Quixote - the noble hidalgo who fought windmills, mistaking them for giants. Spanish education reformers remind me of this hero. They proclaim great goals - cooperative learning, emotional education, inclusivity. They pass laws, write standards, create programs. But their lances shatter against the "windmills" of reality: the crisis of teacher training, falling PISA results, bureaucratic burden. They are noble in their intentions, but often find themselves in the position of Don Quixote - their ideals do not withstand the collision with harsh reality.

Of particular interest to me is the contrast between the declared innovations and real practice. Spain is a country where cooperative learning is enshrined in law, but where, according to TALIS 2024 data, only 57% of secondary school teachers consider their teacher training adequate. This is the lowest indicator among OECD countries [3], [4]. Where innovative courses appear in university programs, but where, according to the same study, "teachers believe that their training does not provide the necessary tools for classroom and learning management, and there is a particular lack of more practical training" [5]. It is precisely this contradiction - between ambitious legislative innovations and the real crisis of teacher training - that makes the Spanish experience, in my view, one of the most instructive for anyone thinking about the transformation of education [11].

Historical Context and Reasons for Reforms

As in many other countries, the catalyst for educational reforms in Spain was the results of international studies. PISA 2022 recorded Spain's worst historical performance in mathematics - 473 points [1]. As researchers note, "the PISA 2022 results and their interpretation sparked a broad discussion about the state of the Spanish education system" [2]. This decline became particularly alarming against the backdrop of Spain investing significant funds in education. As noted in the study, "despite investments and reforms, results are not improving" [2]. This created a demand for rethinking not only the content of education but also teacher training [1].

The second important factor was the crisis of teacher training. According to TALIS 2024, Spain is the only OECD country where less than 70% of teachers consider their teacher training adequate [3]. As Professor Xavier Bonal notes, "teachers believe that their training does not provide the necessary tools for classroom and learning management, and there is a particular lack of more practical training" [5]. This crisis has deep roots. As studies show, "for decades, teacher education in Spain has been criticized for a lack of practical focus and detachment from the real needs of schools" [2]. The TALIS 2024 data only confirmed this criticism, giving it statistical weight [4].

The third factor was legislative reform. In 2020, the LOMLOE law was adopted, which enshrined cooperative learning and emotional education as key elements of school practice [7]. As noted in the study, "the main changes in LOMLOE" include "cooperative learning and emotional education as two key elements" [7]. This was an important step: cooperative learning ceased to be just a "methodological innovation" and became a mandatory element of school practice. However, as I will show further, legislative enshrinement in itself does not solve the problem of teacher training [5].

Content of Reforms

In Spain, cooperative learning and emotional education have become key elements of educational policy, enshrined in the LOMLOE law [7]. This means that cooperative learning has ceased to be just a "methodological innovation" and has become a mandatory element of school practice. Within the framework of this approach, specific programs and professional development courses are being developed.

One of the most striking examples of the implementation of cooperative learning in Spanish teacher education is the Interdisciplinary Cooperative Proposal (Propuesta Interdisciplinar Cooperativa, PIC) [6]. As researchers describe, PIC was implemented with 405 master's students in secondary education teacher training, undergraduate, and vocational training at the Miguel Hernández University in Elche. The program is based on "joint problem solving proposed from various disciplines" [6]. Researchers note that "the complex reality of secondary education institutions and the urgency of the changes occurring in them require teachers capable of intervening adequately." PIC was developed as a response to this need - to "improve the competencies of future teachers." The results of PIC showed "perceived benefits in all studied variables," including the impact on learning, the average level of competencies, the degree of involvement in task performance, and the effective application of cooperative techniques [6].

In Spain, there are many other initiatives aimed at implementing cooperative learning [8], [9], [10]. For example, the University of Zaragoza is implementing the project "Critical Thinking and Cooperative Learning in Secondary Teacher Training" [9]. Researchers note that "cooperative learning facilitates the development of critical thinking," and "positive interdependence" is a key factor. The University of Cadiz is developing programs on "cooperative learning as a professional competence" [8]. In Catalonia, there is a master's program in inclusive education, democracy, and cooperative learning. In Galicia, a new Teacher Training Plan for the 2023-2024 academic year was presented, focusing on an "inclusive, innovative, flexible, cooperative model adapted to the needs of students" [10].

For the CCFP model, the Spanish experience is important precisely because of its distinction. LOMLOE, PIC, and other initiatives answer the question "how" - how to organize cooperative learning, how to engage students in joint problem solving, how to develop critical thinking through interaction. But they do not answer the question "what" - which specific mental mechanisms should be developed in the student. The mental mechanisms discussed in my model are specific tools of thinking, each of which can be diagnosed, evaluated in dynamics, and purposefully developed [12]. Spain has created methodological innovations, but has not created a system for diagnosing and developing specific mechanisms. Moreover, innovations remain local and fragmented - PIC is implemented in one university, courses on cooperative learning in separate regions. It is precisely this step - from "methodological innovations" to "systemic thinking development" - that constitutes the essence of the CCFP model.

Positive Experience and Achievements

Despite systemic problems, Spanish reforms have positive aspects that deserve attention. The first and perhaps main achievement is the legislative enshrinement of cooperative learning and emotional education as key elements of school practice [7]. This creates a legal basis for systemic changes and gives teachers and schools guidelines for development. As noted in the study, LOMLOE considers "cooperative learning as content that needs to be taught," with simple structures and techniques of cooperative learning and their implementation in classrooms.

The second achievement is the positive results of the Interdisciplinary Cooperative Proposal [6]. As researchers note, PIC demonstrated "perceived benefits in all studied variables." The 405 master's students in teacher training who participated in the program showed improvement in the following aspects: impact on learning, average level of competencies, degree of involvement in task performance, and effective application of cooperative techniques. This shows that cooperative learning can be an effective tool in the preparation of future teachers.

The third achievement is the recognition at the state level of the need to strengthen the practical training of teachers [4], [5]. The TALIS 2024 data and other studies have led to the realization that teacher education in Spain needs radical restructuring. As the study notes, "the complexity of the 21st-century challenges faced by teachers - such as the development of artificial intelligence, the effective application of the principle of equality and inclusivity in the classroom, or the vulnerability of Western democracies - underscores the urgency of acquiring not only technical and didactic competencies, but also competencies in educational ethics" [5].

For the CCFP model, these achievements are not just "positive experience," but conditions of possibility. Legislative enshrinement of innovations, positive results of PIC, recognition of the need for practical training - all this creates an environment in which the formation of mental mechanisms becomes possible [12]. But a condition of possibility is not the same as a sufficient cause. Spain has created a legal framework and local successful practices, but has not created a system for diagnosing and developing specific mechanisms. Moreover, innovations remain fragmented, and teacher training remains in crisis. This is why Spain's achievements remain fragile: they are held together by legislation and individual enthusiasts, but are not supported by the technology of forming a cognitive apparatus.

Negative Consequences and Challenges

However, the positive effects of Spanish reforms remain modest compared to the scale of systemic problems. The most serious problem is the uniquely low level of teacher satisfaction with their training. As the study notes, "in this aspect of analysis 'differences between countries are substantial'. Thus, while in Estonia, Portugal, Colombia, and Cyprus more than 90% of secondary school teachers give a positive assessment of initial teacher training, and in 14 other countries this percentage is 80%, Spain is at the opposite end of the spectrum" [3].

The second serious problem is the lack of practical training [5]. As Professor Xavier Bonal notes, "teachers believe that their training does not provide the necessary tools for classroom and learning management, and there is a particular lack of more practical training" [5]. The study also shows that "the results show more critical average indicators than in the OECD or EU" [4]. This means that the problem of the lack of practical training in Spain is more acute than in most other developed countries.

The third problem is the fragmentation of innovations [8]. Despite the fact that cooperative learning is enshrined in law, its implementation remains extremely uneven. As the study notes, "in Spain it is rare to observe teachers attending colleagues' lessons; only about 25% of teachers participate in joint observation" [4]. Cooperative learning remains a local, not a systemic phenomenon. A study of the place of cooperative learning in the curricula of master's programs in secondary teacher training shows that it occupies a "residual place." This means that even in those programs where cooperative learning is declared, it often remains on the periphery, not in the center of teacher training [8].

The fourth problem is teacher resistance and growing bureaucratic burden [3], [4]. As the TALIS 2024 study notes, "dissatisfaction in Spain is related to bureaucratic, evaluative, and preparatory overload, rather than to the teaching activity itself." The study also shows that "teachers lose a lot of instructional time due to interruptions" and that "administrative burden is one of the main stress factors" [3]. At the same time, "the use of artificial intelligence in classrooms is growing, but many teachers note a lack of training to benefit from it" [5].

The fifth, and for me the most important problem, is the lack of a systemic approach to thinking development [11], [12]. Spanish reforms are focused on methodological innovations - cooperative learning, active methodologies, interdisciplinary approaches. These are important tools. But they remain tools, not a theory of thinking development [12]. As the study shows, "although cooperative learning facilitates the development of critical thinking," it does not answer fundamental questions: which specific thinking mechanisms should we develop? How will we diagnose their development? How will we take into account the uniqueness of each child? [9] The Spanish model, despite all its innovations, remains within the framework of a methodological approach, without rising to the level of personality theory and thinking theory [12].

For the CCFP model, these negative consequences are not just "problems of the Spanish school." They are symptoms of a deeper phenomenon: a reform that changes methods and declarations, but does not change the cognitive apparatus of the participants, inevitably reproduces the old paradigm [11], [12]. The training crisis, lack of practice, fragmentation of innovations, bureaucratic burden, lack of a systemic approach - all these are consequences of the fact that the Spanish reform did not place the diagnosis and development of specific mental mechanisms at the center. It changed the "how" of education, but did not change "what" it forms. CCFP offers this "what."

Contradictions with the CCFP Model

Now I want to move on to what is most important to me: the fundamental differences between the Spanish model and the communicative-cognitive framework of personality (CCFP) model [11], [12].

The first and most fundamental difference: the Spanish model is focused on methodological innovations, while mine is on systemic thinking development [7], [12]. Cooperative learning, interdisciplinary approaches, active methodologies - all these are important tools. But they remain tools, not a theory. They answer the question "how to teach?", but do not answer the question "what exactly should we develop?" [12]. My CCFP model gives an answer to this question. It defines eleven mental mechanisms that constitute the foundation of adaptive, creative intelligence [12]. It proposes a system for their diagnosis and development [12]. Cooperative learning can be one of the tools for developing these mechanisms, but it cannot replace their systemic understanding [11], [12].

The second difference: the Spanish model relies on cooperative learning, while mine relies on the development of mental mechanisms [6], [12]. Cooperative learning is a method that involves students working together to solve problems. It develops communication skills, cooperation, mutual assistance. This is valuable [6]. But cooperative learning does not answer the question: which specific cognitive abilities are we developing? How do we measure progress in their development? How do we take into account the individual characteristics of each student? [12] My model, on the contrary, offers specific, operationally defined mechanisms: establishing cause-and-effect relationships, critical thinking, Socratic dialogue, spatial imagination, forecasting, and others [12]. Cooperative learning can be a means of developing these mechanisms, but it does not replace them [11], [12].

The third difference: the Spanish model relies on legislative innovations, while mine relies on pedagogical reality [7], [12]. LOMLOE enshrines cooperative learning and emotional education as mandatory elements of school practice. This is important [7]. But the law itself does not change reality in the classroom. As TALIS 2024 data shows, only 57% of secondary school teachers consider their training adequate [3]. The law does not give teachers tools, does not change their training, does not create conditions for real changes [5]. My model, on the contrary, proceeds from the fact that changes must occur in the classroom, and not only in legislative acts [12]. Teachers must be prepared to develop mental mechanisms. They must master the tools of diagnosing and developing thinking. Without this, any legislative innovations remain on paper [12].

The fourth difference: the Spanish model remains fragmented, while mine is systemic [6], [12]. PIC is a wonderful initiative. But it involved 405 students in one university [6]. Cooperative learning is enshrined in law, but its implementation remains extremely uneven [8]. These are fragmented innovations that do not add up to systemic transformation [12]. My model, on the contrary, offers a systemic approach - from the diagnosis of mental mechanisms to their development, from teacher training to changing the assessment system [12]. This is not separate innovations, but a holistic system [11], [12].

And, finally, the most important difference. The Spanish model, like most other educational models, does not realize the epistemological significance of thinking development [11]. As I substantiated in the article "Epistemological Recursion in Cognitive Science," modern neuroscience is stuck in the "trap of correlations": we record the results of

brain activity, but we do not understand the mechanism of its self-organization. The way out of this dead end lies not in the plane of creating even more powerful scanners, but in the plane of the evolution of the knowing subject itself. The Spanish model does not set itself this task [7]. It does not understand that the development of mental mechanisms in children today is the preparation of the very cognitive apparatus that tomorrow will be able to deconstruct the logic of its own brain. It remains within the framework of pedagogy, without reaching the level of epistemology [12].

It is precisely here that the Spanish experience leads us to the key distinction that I discuss in detail in the article on epistemological recursion [11]. The hard problem is not a problem of missing data, but a problem of an exhausted conceptual framework. Spain tried to solve the problem of education within the existing framework - through methodological innovations and legislative changes. But the framework remained the same: the school still prepares thinkers with linear, reductionist thinking, rather than subjects capable of an act of re-conceptualization [12]. For the CCFP model, this means: the Spanish experience shows the boundaries of reforms that do not reach the epistemological level.

Conclusions and Lessons

What can we take away from the Spanish experience?

The first lesson: legislative innovations without systemic teacher training remain on paper [3], [7]. LOMLOE enshrines cooperative learning and emotional education as mandatory elements of school practice. But TALIS 2024 data shows that Spain is the only OECD country where less than 70% of teachers consider their teacher training adequate [3]. The law cannot replace quality teacher training [5].

The second lesson: methodological innovations cannot replace a systemic approach to thinking development [12]. Cooperative learning is a valuable tool [6]. But without a clear understanding of which specific thinking mechanisms we are developing, without a system for their diagnosis, without individualization through unique abilities, any methodological innovations remain superficial [12].

The third lesson: educational reforms must be systemic, not fragmented [8], [12]. PIC is a wonderful initiative, but it involved 405 students in one university [6]. Cooperative learning remains a local, not a systemic phenomenon [8]. Without a systemic approach, innovations remain "islands" in a sea of traditional practice [12].

The fourth, and most important lesson for me: education is not only methodology, but also a theory of personality development [11], [12]. The Spanish model is focused on methodological innovations, but does not answer fundamental questions: what is thinking? How does it develop? What mechanisms underlie it? How can we diagnose and develop these mechanisms? [12]

The Spanish experience shows that educational reforms are not just the introduction of new methods and legislative acts. It is a paradigm shift - from methodological innovations to systemic thinking development, from fragmented initiatives to a holistic system, from pedagogy to epistemology [12]. The CCFP model offers this path. It does not deny the value of cooperative learning or other active methodologies - on the contrary, it gives them a theoretical foundation [12]. It does not deny the importance of legislative reforms - but it supplements them with the understanding that real changes occur in the classroom, and not only in laws [11], [12]. It is precisely this combination - a systemic theory of thinking development and practical tools for its diagnosis and development - that could, in my view, become the basis for a truly sustainable transformation of education [12].

Here I would like to recall the lines of the great Spanish poet Antonio Machado: "Caminante, no hay camino, se hace camino al andar" - "Traveler, there is no path, the path is made by walking." Spanish education reformers are looking for a ready-made path - in laws, standards, methodologies. But there is no such path. The path is created every day in every classroom, by every teacher, by every student. No LOMLOE law, no PIC program, no cooperative learning methodology will create a new school by itself. It is created by the living effort of those who enter the classroom every day. And the CCFP model is not a ready-made "path," but rather a compass that helps not to lose direction. It does not give answers to all questions, but it helps to ask the right questions. And this, perhaps, is the most important thing.

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