Mining Quality

Evaluation of Teachers' Professional Identity in the Greek Educational System

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Teachers' evaluation is a crucial issue directly linked to the career and professional empowerment of teachers. Regarding this issue, since 1982, the Greek educational system has experienced numerous educational changes and reforms, which, interestingly, have all been unproductive. These failures have never been convincingly interpreted by experts, and usually they are perceived as merely being rooted in political and ideological reasons. However, besides the political aspects, in our opinion, the weak points of this field, in realising reforms or interpreting phenomena, are the underpinning theoretical and philosophical views and the methods applied. Contrary to the traditional ways, the present chapter, being part of a wider project, attempts to introduce a different epistemology in the field, fostering the complex dynamic system (CDS) perspective. The present endeavor is a qualitative approach aiming to identify the impact of the long-term absence of an evaluation system affecting teachers' professional identity. Methodologically, teachers' views on evaluation issues are explored through discourse analyses of focus group interactions.

— **Keywords:**
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Introduction

Achieving and maintaining quality in modern educational systems is an ongoing objective, although its exact definition remains vague. The controversy concerning the concepts of development, quality and measurement persists at all levels regarding the main actors, the aims, and the desired outcomes (Adams, Acedo & Popa, 2012). The term "quality" originating from the market language, has become "anathema" (Doherty, 2008, p. 255) to many academics, however, it remains a central issue, despite its vagueness that allows multiple interpretations.

The main quarrel in the quality-in-education discussion focuses on the role of teachers and their responsibility for attaining high-quality education (for details, see Clement, 2009). According to Lovat's (2009) literature review, a teacher has at least a 60% probability of influencing students' achievement, regardless of their initial socio-economic background, and the odds of the teacher's impact on students over the impact of the school is 75%. Therefore, teachers' competencies in the classroom and the academic criteria became the determining factors in optimising pupils' performance, achieving school goals and, consequently, improving the overall school function (Darling-Hammond, 2000; Darling-Hammond & Youngs, 2002; Nye, Konstantopoulos & Hedges, 2004).

Acknowledging the importance of teachers' roles led to a growing interest that focused on the quality of teaching at all stages (Tonna & Madalińska-Michalak, 2018). Academic researchers and analysts have pointed out that teaching processes encompassing the modes of practice in conjunction with fundamental ideas are dynamical processes and, as such, can be subjected to continual amendments on the path to achieving quality objectives (Creemers, Kyriakides & Antoniou, 2013). In order to improve teaching and learning and sustain accountability, highly scholastic measures for successful professional development have been put in place on the agenda of experts and policy-makers, albeit with a variety of methods and approaches (e.g. for the USA, Derrington & Martinez, 2019; for Portugal, Flores, 2018; for Belgium, Tuytens & Devos, 2018; for China, Liu, Xu & Stronge, 2016). The educational systems worldwide have undertaken reforms aiming to enhance the quality of education, but many of these efforts have failed, despite their honorable intentions. These failures have usually been explained by blaming fragmentary implementation and isolated

efforts that were ineffective in addressing the teachers' demands (Borko, 2004; Lee & Day, 2016).

It is imperative to comment at this point that interpreting the reforms' failures is a determining step towards understanding educational reforms. In our opinion, the underpinning theoretical framework is the most important prerequisite for this purpose. The usual interpretations are rather simplistic and naïve. They are simplistic because they consider that the application of a reform's regulatory framework is not achieved with absolute fidelity due to the varying degrees of unwillingness shown by teachers. This is a reductionistic view that will be elaborated in the following sections. They are also naïve because they assume that the successful implementation of new proposals in one educational environment, school or region guarantees the same positive development in another (Moran, 2015; Trombly, 2014). Both of the above criticisms are posited to emphasize that there is a lack of a deeper understanding of the system under study within the traditional epistemological framework. Not ignoring that, as with all educational disputes, the controversial notion of quality in education is a deeply social and political issue (Biesta & Osberg, 2010; Biesta, 2019), we maintain that a paradigm shift is needed to investigate it that will provide a different world view and potentially reduce the gaps between the different approaches. This shift can be summed up as the fostering of a complex systems view of educational processes.

Complexity Theory and Complex Adaptive Systems

Complexity theory was developed in the field of the natural sciences in the mid-20th century and concerns nonlinear systems evolving in time, dynamical and complex in nature. The notion of complexity encompasses a number of properties that differentiate those systems from simple mechanical and linear systems (Nicolis & Nicolis, 2007). The theory itself was founded in the field of mathematics, which provides the concepts and tools to describe those systems and to develop models for investigating them. Complexity theory is a new perspective, a new science, which has also influenced social and life sciences, such as psychology, neuroscience, medicine and education (Guastello, Koopmans & Pincus, 2009; Koopmans & Stamovlasis, 2016). The operational definition of a complex system is a system comprising a large number of parts or sub-systems which are connected and

exchange energy and/or information. Their evolution is driven by self-organisation mechanisms, while new properties emerge as a result of the dynamic interactions among the contributing components. Changes occur through feedback loops where small changes can cause large differences over time. This generally distinguishes complex systems from simple and complicated ones. They are characterised by the term "Complex Adaptive Systems" (CAS) because their dynamic and self-organising behaviour allows them to adapt to a continuously changing environment (Nicolis & Prigogine, 1977; Nicolis & Nicolis, 2007).

Fostering the CDS ontology in investigating organisations, one may recognize analogous structures and interaction dynamics amongst multiple networked agents and potential emergent events – such as originality, knowledge or adaptableness – arising from those relationships (Mason, 2008; Poutanen, Siira & Aula, 2016). The organisations and human systems could be seen or function as CAS in the sense that their evolution is the result of a dynamical and interactive process that cannot be traced back to its constituent parts, since the whole is more than the sum of its components. Contrary to CAS, the mechanistic systems can be broken down into parts and restructured without affecting their functionality and entity, and their relationships can be studied and formulated in terms of linear mathematics and be understood by Newtonian laws, even if a high level of expertise is required (Snyder, 2013). It can be argued that social processes and evolutions in human systems, such as education, belong primarily to the realm of complex systems. CAS properties are not always apparent but can manifest themselves under certain circumstances, especially when *changes* are sought. CAS frameworks in such human systems can help us to better understand the phenomena related to the emergence of meanings, new knowledge, new perceptions, and the ways in which they change, develop and evolve over time (Stamovlasis & Koopmans, 2014, 2017; Poutanen, Siira & Aula, 2016).

Education as a Complex Dynamical System

Education is the space in which a multitude of entities or agents coexist: students, teachers, content, media, time, goals, curricula and context. The above elements and the relationships between them create a dynamical system and an active structure that

ontologically is an interconnected network (Ni & Branch, 2008). One can perceive those complex structures at different levels of complexity. That is, learning at an individual level within a student's mind, learning at a collective level within a collaborative school setting, and even learning at a higher level when considering the whole educational system.

The current literature has presented many theoretical and empirical studies that are based on the complexity of education-related phenomena that can only be understood if examined at the level at which they emerge. For example, these phenomena include the emergence of learning-teaching trajectories (Steenbeek & Geert, 2013), research on private university curricula (Adhiambo-Amimo, 2016), the role of complexity theory in pedagogical developments in physical education in Scotland (Jess et al., 2011), students' problem-solving and physical science (Stamovlasis, 2011), teachers' degree of resistance to change (Tsiouplis & Stamovlasis, 2019), dynamical views of high school attendance (Koopmans, 2016), teachers' career decision-making (Stamovlasis & Vaiopoulou, 2017), learning interactions within the classroom (Pennings & Mainhard, 2016), the contribution of complex dynamic systems to child development (Geert, 2011), etc. The impressive amount of empirical studies advocating a departure from Newtonian assumptions about educational practice has already established a new way of thinking. This is not another metaphor or another interpretative scheme but, starting as an inter-discourse emerging from multi-perspective discussions, became a new paradigm with the Kuhnian notion. The comparative advantage of this approach is a new world view along with its capacity to provide "a rich and widely applicable vocabulary to capture processes of change and the interaction between individuals and larger organisational constellations" (Koopmans & Stamovlasis, 2016, p. 1). Through this framework, which provides both the language for process description and the methodological tools for studying it, the nonlinear and unpredictable nature of educational processes becomes apparent and the related phenomena can be better understood.

Teachers' evaluation in Greece

The methods of developing human resources in education is an omnipresent issue in countries' political agenda aimed at attracting and retaining effective teachers, where the evaluation process has

a central position (Stylianidou, Bagakis & Stamovlasis, 2004). In the past, evaluation in the Greek educational system relied on authoritarian and strict school inspectors. This practice ceased in 1982 and the inspectors were replaced by school consultants, who, taking the role of a merely advisory character, failed to conduct an essential and effective evaluation system. Note that teacher evaluation became optional, appealing to those who wished to claim higher rank positions, e.g. school principal. The Greek educational system, thus far, has displayed a negative disposition towards formal evaluation, and similar behaviour has also been observed in other countries, as mentioned before. Nevertheless, the need for change in this matter at the theoretical level remains imperative when considering the professionalism of teachers and the empowerment of their educational identity. On the other hand, an effective self-evaluation process is undoubtedly a prerequisite, perhaps even to a greater extent, for supporting the desirable autonomous and self-managed school units (Chrysos, 2000; Betsas & Amarantidou, 2011).

The most recent reform changing the legislative framework on teachers' evaluation and the self-assessment of school units was attempted over the period 2013-2015. Accordingly, evaluation was applied hierarchically through a top-down approach, where each prospective evaluator had to follow a training process in order to evaluate their subordinates. This reforming effort encountered great difficulties and faced strong objections at all levels of education until it was finally stopped in 2015 (Tsiouplis, 2016).

Since then, given the financial crisis, the limited resources available and the substantial reduction of budgets in all areas, initiatives for educational reform have not been attempted. The issue remains open, and since education is the lever to stimulate productivity, despite the economic downturn, it is necessary for the weak points of the educational system regarding evaluation to be addressed following the actions of most European countries (OECD, 2017). Note that in Greece, the only evaluation mechanisms are the comparative studies on student performance, the PISA, and the entrance examinations to institutions of higher education.

Rationale and Research Questions

The absence of an evaluation system in the Greek education system from 1982 until today, co-examined along with the series of failed reforms, encompasses a unique feature that attracts the attention of researchers. This work, being part of a wider project aimed at the application of complexity theory in education, re-examines educational reforms through the prism of the new paradigm. The theoretical elaboration for such an epistemological shift was presented in a previous section. Following the CDS approach, in the first stage of this project, an attempt was made to provide empirical evidence for existing nonlinearity when examining teachers' attitudes towards reforms (Tsiouplis & Stamovlasis, 2019). Their positions and perceptions that emerge over time, as well as their resulting behaviour, have been consolidated into a "force" resisting change, opposing "forces" acting for change/reform. In the above-mentioned empirical study, it was shown that modeling this force-field dynamic via catastrophe theory (Thom, 1975) revealed nonlinear effects, which reflect the underlying complex dynamical system. The nonlinear model suggests that some variables, such as emotional states, act as bifurcation factors. That is, when a bifurcation factor exceeds a threshold value, the state variable – which is the teachers' position related to educational reforms – becomes bimodal. The two modes or behavioural attractors represent the two qualitatively different states: for and against educational reforms, respectively. Beyond the threshold value, the relationships are nonlinear and transitions between the two behavioural attractors can occur, that is, abrupt changes in teacher position ensue. The findings are of paramount importance because they demonstrate a nonlinear system, where small changes in a control variable can result in sudden large changes in the dependent variable. The message from this CDS application is that, in practice, the dynamical system under study can proceed via discontinuous changes or transitions between behavioural attractors, if the bifurcation factors exceed certain critical points. This directly suggests that a better understanding of the system encompasses knowledge of the potential bifurcation factors. The literature provides information about the characteristics of these kinds of variables, which can deductively be hypothesised as bifurcation factors. These are associated directly or indirectly with affective states and emotions and

can be very susceptible to changes. In addition, the moderator variables are good candidates for bifurcation factors (Stamovlasis, 2016a). Based on the above, in the second stage of the project, the present work was carried out as a systematic investigation of the latent factors associated with teachers' attitudes contributing to resistance to change regarding the reform of the evaluation system. The working hypothesis and the main research question concerns the number and the nature of those variables, which introduced nonlinearity to teachers' positions (dependent variable). For this, we developed and applied a qualitative method for exploring those latent variables. The method is based on a focus group approach, where, through nonlinear interaction processes, the latent variables in question became apparent.

Method

Focus groups – data collection

The choice of the method of data collection depends on the specific objectives of a piece of research. Focus groups, which have become increasingly popular in the social sciences, have certain advantages over traditional approaches, e.g. interviews, because they allow the collection of a large amount of data from an important group of individuals related to a range of contexts, including attitudes, opinions, feelings and expectations (Wilson, 2012). The dynamics of the nonlinear interaction process are a key element of focus groups, which in this approach was taken into consideration when organising the focus group settings.

The design of the method allows association and interaction among group members, and the dynamics of the process expedite the appearance of aspects that would otherwise be difficult to reveal. The recursive interactions within brain-storming conditions facilitate latent variables, such as attitudes, certain memories, past experiences, positions, ideologies, feelings, practices or desires, to emerge. It is therefore expected that – under these conditions – teachers will function spontaneously, without restraints and discomfitures, and the interaction patterns will disclose the looked-for factors that determine their *readiness* for educational change. The factors in question were documented via a suitable coding scheme in the subsequent discourse analysis.

The size of the groups was 3–4 individuals, a choice which was thought to be the optimal one, given the disadvantages of larger groups, such as the difficulties to control and the limited chances for each member to equally contribute to the discussion (Guest, Namey & McKenna, 2017; Carlsen & Glenton, 2011; Onwuegbuzie et al., 2009). The participants in the micro focus groups were selected on a voluntary basis, but an attempt was made to include teachers with varying ages, genders, teaching experiences, specialisations and positions in the educational system. Empirical data were collected from 10 mini focus groups, involving 27 schoolteachers and 7 school principals. Their years of service in education ranged from 8 to 33 (with a mean of 17.9 years). The participants were subsequently anonymised using the capital letter P and a number from 1 to 27 (P1–P27), and the school principals similarly as H1–H7. The focus group discourses were audio recorded and transcribed. Consequently, they were explored via discourse analyses.

Organisational discourse analysis

The participants were teachers or school principals in urban school units, and the discourses focused on specific issues of reforming the evaluation system, that are directly associated with their everyday work. Therefore, we chose to analyze the discourses in focus groups using the organisational discourse analysis method. There are a variety of theories and approaches regarding organisational discourse analysis; in this work, for reasons of methodological clarity, we adopt the definition which considers a "discourse" as a way of talking about and understanding the world or some aspects of it (Phillips & Jorgensen, 2002, p. 1). Discourse analysis provides a theoretical prism for understanding social reality via language use. The field of organisational discourse analysis refers to "the systematic study of texts – including their production, dissemination and consumption – in order to explore the relationships between discourse and social reality" (Phillips, Lawrence & Hardy, 2004, p. 636). Contemporary discourse studies within organisations following specific thought processes have demonstrated the "linguistic turn" that has enhanced the power, the capabilities and, more importantly, the complexities of language (Alvesson & Kärreman, 2000, 2011). Also, researchers should bear in mind that individuals do not use language to accurately

represent the perceived reality (Chia, 2000) but often to achieve a kind of self-fulfilling goal (Alvesson & Kärreman, 2000). The above makes the work of researchers even more difficult as they must classify and interpret those discourses. In the present inquiry, we re-emphasize, here, that we avoided any post-modern interpretative stance and that the language used was not interpreted at a metaphorical level of thinking. The discourse analysis focuses on identifying specific speech configurations that describe conditional agreements, disparities or negotiations and reflect complex nonlinear relationships between the looked-for variables.

Coding

The transcribed material of the mini focus group discourses was checked by a second researcher and imported to Atlas.ti, a computer-assisted qualitative data analysis software (CAQDAS) package. So, the coding process and the analysis become easier and more sophisticated, given the advanced facilities that the software offers. For example, CAQDAS makes it possible to process data using qualitative and quantitative processes or combinations of them, e.g. frequencies of pairs of words, or "bi-grams" (Akarsu, Gencer & Yıldırım, 2018). In this chapter, we present a sample of the qualitative data and the corresponding analyses. Initially, the coding procedure started inductively, and after a thorough elaboration, the ensuing code scheme was applied to the whole data set.

The codes were applied to utterances that were meaningful segments of the discourse and expressed desired information related to the main hypotheses. The final code scheme included axes related to (1) the meaning of the concept of "evaluation" (for principals and teachers), (2) the consequences of evaluation on the quality of education, and (3) the impact that changing the assessment system had on them.

Results

The transcribed discourses were analysed via the proposed coding scheme. Some examples of the recordings are presented below that express a variety of views of the principals and teachers involved. In the flow of the discourses, the teachers' positions often seemed clear at the beginning, but then they subsequently appeared not to be firm or stable, and in the following sentence,

they contradicted their previous stance. They introduced doubt by using "but" or "what if", which denotes that their opinion holds conditionally and could be changed if some other factor meets an agreeable level. This level of satisfaction, for a given variable, will not be the same for everybody, but it is reasonable to hypothesize that it will be for a part of the population, which statistically speaking will lead to bimodality. Theoretically, within the CDS framework, the above description reflects a "bifurcation effect". This is not a metaphorical concept but a qualitative description, which is not empirical evidence *per se*, but a strong clue that a nonlinear phenomenon might occur in a policy-making system (teachers' attitudes for or against reforms) due to the concomitant operation of antithetic factors, attitudes or opinions (Stamovlasis & Vaiopoulou, 2018).

The present analysis of the discourse flows includes, among other elements, the identification of such bifurcation points, which imply the crucial role of the corresponding bifurcation variables. Next, some selected segments of the discourses are presented, demonstrating the emergence of those qualitative findings.

At the beginning, most participants (both school principals and teachers) expressed their assent to implement a form of evaluation:

First, it is inconceivable that there is no evaluation system; the school is an institution that evaluates students and it is inconceivable that school staff is not being evaluated. [H1]

Yes, I think it is absolutely necessary to have an evaluation system for both the school unit and for each of us, and for the counselors; things cannot continue in any other way. [P2]

Moreover, they express their deep resentment over the absence of generalised and organised evaluation frameworks for teachers:

Historically, since 1983, there has been no substantive evaluation or even a measurement of the educational work produced. I think our field loses good reputation on its lack of evaluation; we do not get even an "elementary feedback" on what is taking place.

However, there are unclear positions regarding the suitability of the evaluation procedures that should be applied. Primarily, the responses seem to be "filtered" through personal views and, interestingly, their opinions were formulated as (rhetorical) questions rather than statements.

What are the issues that will be solved? Will there be any problems? There will be a lot of people involved in this thing, and parents will be involved, but parents, not in a decisive role, but they can speak their minds and, in particular, if they can come in, they have to ask specifically: Why you are saying this? Why do you say that? [H2]

Since 82 there has been a plateau. Three years ago, this evaluation went on to have some reactions from our unions that were not so unjustified to me. That is, I was against that assessment and I was against it, the way it was implemented that is, with the school counselor coming [to school] and reminding me of the "inspector". That the same assessment would be done, that is, no evaluation, nothing, that is why I was opposed, not opposed to the notion of evaluation, leveling is, I think, a perfect injustice, leveling is a perfect injustice. [H4]

It depends on what I am looking for. Do I want managers and executives? I get something else to evaluate. Do I want educators? Something else to evaluate. Do I want people who "grab" a position and will not move from it? I leave them in this position for the next 20 years. Again, it depends on what kind of education you want and what kind of schools you want. [P9]

An important "bifurcation point" is the great contrast or discrepancy – usually within the same utterance – between the agreement for evaluation and a different perspective, which essentially nullifies the previous agreement and takes on the form of prerequisites. In this case, there is always a latent "but" or "what if".

Personally, I am convinced, we already discussed this [before in the session], that the legislation of 2013 [until 2015] was a good tool which we could interact with and ask for some improvements. At the beginning the evaluation should not be related with dismissal

or wage developments, [...] maybe [relate] with the [professional] development, in a position of responsibility ok, but without any financial disincentives. [H5]

I agree, I am and I will be in favour of the evaluation, provided that we know exactly how the evaluation will be done and by whom it will be done. I think we are the only industry that is not evaluated, and so instead of getting better, it is going to get worse. [P2]

I am new to education, I have 9 years' experience and I think we need to be evaluated, improved and, because we are in a class that is a living organism, children have needs, because we too will be trained to be able to follow children, to evaluate if we are good, to see what we need to improve. It is not bad to change, and [especially if] someone tells us that we need to improve something simply by doing so in a context that does not undermine our capabilities, nor our personality, but in the context of self-improvement. [P12]

Regarding the quality of education provided, the most important element was the effectiveness of teachers. Here, the key elements can be traced to the effectiveness of themselves as well as the effectiveness of other colleagues. The focus on using the evaluation process as a lever to remove ineffective teachers was also a cause of great distress.

Think, how many thousands of our colleagues have been appointed since the 1990s. I think there is no one who has been judged incapable. With the law of averages, should not there be some, even if they count on their fingers, who can not do this job? [H1]

Evaluation does not scare me, changes do not scare me; when you feel good, they do not scare you. It goes without saying that anyone who wants can come to my class, into my lesson, I have no objection to this. Now, how exactly can the evaluation be done? If we go into practical matters, we all – sometimes – feel that some colleagues are not doing their job right, we feel it. [P7]

Well, there is a very vague, fuzzy landscape in which everything works, you never know what really works and what does not. How can we help and how can we help both colleagues and students throughout this vague landscape? And because in Greece we have a constant phobia when we hear this word, "evaluation", we associate it with a wage increase, with whether I will have my job tomorrow. In the end, in the end, we reject anything that can get us a little further. [P11]

In addition to professional effectiveness, this ambiguity is illustrated by two other factors: (1) the deep concern about the possibility of their poor evaluation and dismissal, and (2) the political fluidity in relation to a stable and reliable evaluation system.

So, we were all scared, we were, after all, there was this feeling that we were heading towards layoffs, that is, for mass layoffs, and that this self-evaluation would lead there. Bad schools will close, right? Good schools will emerge. [H3]

If I was evaluating colleagues now that I see them every day and knew that their job would be affected financially either for their grade or transfer, it would be more convenient for me to give them all "Excellent". But if I knew that it would be just a report that could play a role in not being a manager, I would say: "OK, colleague, I do not think you need to be a manager" or "You do not have the skills". [H5]

That is, from one minister to another in the same government, they have a completely different philosophy. The same government, you can notice now, they are supposed to have a specific plan as a government, but the replacement of the minister completely changes this plan. [H3]

How will he come to evaluate me? If he has political criteria in his mind? I have heard from others about this; if he has [different] political criteria in mind... [P17]

Their attitudes about evaluation are closely related to their comfort zone and the steadiness of their daily routine.

We are wary of the new, of the different, we want the usual so that we do not have to get out of a routine. [P12]

We are not unconventional [...]. We have been getting by with it, and we do not like doing our job. So, no one is supposed to bother us because we feel we are doing well, so there is no need to evaluate us. [...] Yes, certainly, because no one bothers us to do so we are not obliged to do so, nor do we participate, and so we settle down [in the current situation]. [H7]

Discussion and Concluding Remarks

The present research has studied the emerging attitudes and behaviours of teachers in Greece under changing situations and, particularly, the leveling off in the teachers' evaluation system. The innovative feature of this endeavor is that it fills a gap in the literature since no similar studies on teachers' positions have been reported, especially using the proposed methodological approach. The dynamical process of focus group interactions allowed the emergence of verbal patterns revealing related views, opinions, agreements, objections, fears, emotions and attitudes towards the evaluation issues. Although numerous shortcomings were reported (e.g. uneven work distribution, excessive workload and a lack of resources) as regards the implementation of evaluation (OECD, 2013), it was not possible to establish a causal framework for teachers' attitudes and positions on the evaluation system, since most discourses revealed contrasts and inconsistencies when expressing conditional agreements. Moreover, since teachers have no previous experiences of assessment, it is apparent that their positions are founded on misconceptions and myths about what an evaluation system is and what it can offer.

An element that could induce bifurcation effects originates from the lack of a consistent collective attitude towards evaluation processes of any form. This fragmented view of the issue in question is associated with various erroneous and spasmodic conceptions about the reasons for reforming education, which are interpreted

either as due to ineffective colleagues or as some impersonal, punitive governmental policy. The "distance" between teachers' institutional logics regarding change and evaluation and those that policy-makers adopt is well-known, as is the need that teachers have to believe that reforms have some kind of cognitive legitimacy (Bridwell-Mitchell & Sherer, 2017).

The latest attempt for reforming the evaluation system, same as all the previous ones, was imposed from top to bottom. The results were disappointing:

1. it did not achieve any of its key objectives,
2. it was downgraded to a form that added even more bureaucratic work, and
3. it created confusion and controversial positions for teachers.

The reform was initiated and applied at a superficial level, thus the consequences were not favorable. The previous negative attitudes were consolidated and reinforced the contrasting positions arguing against a meaningless change, which added nothing constructive to the quality of the educational work. In general, teachers' attitudes and behaviours do not differ from those observed in other countries. Reaching evaluations' objectives is a thorny issue in many European educational systems since teachers do not accept the reforms resignedly but seemingly mediate the changes and, in some cases, actively subvert them (Osborn, 2006).

Another important hint that came out of the discourse analysis was the teachers' worries about the impact of the evaluation on their personal lives and careers. In fact, they were the foremost bifurcation factors detected. The teachers' apprehension is based on the idea that they will be accountable for any failures or shortcomings in the entire education system, which makes them at least skeptical, if not hostile, to any interruption of the existing status quo. An interesting point is that some of the teachers implicitly requested beneficial rewards for their possible participation in an evaluation process, while the majority were concerned about possible discrimination or injustice.

Returning to the theoretical issues and analyses, the reductionistic interpretation that the reforms have failed due to the lack of appropriate information delivered on the expected benefits for both teachers and the quality of education is an over-simplified one. Our position is that

the failures are due to all of the philosophical and epistemological views driving the top-down interventions, which ignore the complex nature of the educational system, as was described in a previous section. The network-based ontology of education and the dynamic underlying processes mean that the ensuing changes do not follow Newtonian laws. We argue that the meta-theoretical framework of complexity can enrich and support the development of local theory in organisational and educational management and suggest different ways to address changes and reforms. This prospect is in line with the views of numerous scholars who have advocated the complexity perspective (e.g. Goldstein, Hazy & Lichtenstein, 2010; Sanderson, 2000). It is important that theoretical considerations should incorporate the notions of self-organisation and bottom-up processes in their philosophical assumptions, as well as in research and/or evaluation designs. Theoretical conjectures should not ignore, but rather take into consideration, the bifurcation role of certain variables and anticipate that the outcomes are not linear sums of the acting components. Sudden transitions might occur through the self-organisation mechanism, which must be facilitated by controlling the right variables. In the quantitative empirical research implementing catastrophe theory models, Tsiouplis and Stamovlasis (2019) showed that psychological coordination encompasses all views, opinions, agreements, objections, fears, emotions and attitudes towards educational evaluation and reform, which is a nonlinear system where sudden transitions can occur between behavioural attractors. The implications are evocative of how changes could occur in such a complex nonlinear system. In the present qualitative study, using a novel methodological approach, we revealed some potential bifurcation variables, which are currently under further investigation in in-progress quantitative research. The message here is the novel theoretical framework and its implications on ways of thinking and acting.

As a generalised final remark, a message can be conveyed to politicians and policy-makers saying that instead of considering merely public prejudices, opinion polls and the general social context of a given historical context, it is advisable to consider findings from theory-based social research as well (Stame, 2004). Finally, when the strategic aim is institutional change, CDS informs stakeholders and policy-makers that there is no unique structured training that is tailored

for those who are supposed to go through an evaluation process for professional development; top-down interventions, with their strict legislation and control, even when they are fair and well-designed, are condemned to failure because they ignore the dynamic complexity of human systems.

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