

Teacher professionalism facing digital revolution and complexity

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RIASSUNTO: L'articolo affronta il tema delle trasformazioni dei processi lavorativi nei contesti scolastici a partire dalla sfida della complessità e delle nuove tecnologie. Partendo da un'analisi delle scuole del secondo ciclo irlandese ed italiano, viene proposto un modello integrato di strutturazione delle competenze degli insegnanti.

PAROLE-CHIAVE: professionalità docente, rivoluzione digitale, complessità.

ABSTRACT: This article tackles the transformation of the working processes in the school context. The standpoint is the paradigm of complexity and new digital technologies revolution. Analyzing Irish and Italian teachers at post-primary school, a multidimensional model of competence is presented.

KEY-WORDS: teacher professionalism, digital revolution, complexity.

1. Teacher professionalism facing complexity

This paper focuses on teacher professionalism in relation to the fourth revolution (Floridi 2021) – the explosive development of information and communication technologies (ICTs), artificial intelligence and robotics – and the new complexity thereof.

Nowadays complexity firstly deals with the need to give young people the best preparation for adult life not only as productive– *human capital* pro-

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spective – but also as active – *human development* prospective – members of society (Eurydice 2018). Secondly it evokes the wide-ranging expectations which teachers are confronted with (Suarez & McGrath 2022) such as: the growing demand of equity and inclusion needed to face the increasingly diverse and heterogeneous student populations, the labor market and community desiderata. Finally, the challenge of new technology.

New digital technologies are reshaping not only the way people work but also living and learning lifestyles. The interactions between ICT/ IA and humans follow the logic of the simplex system (Berthoz 2011; Rossi & Rivoltella 2019). By this perspective, users and technologies mutually change their reasoning and computational processes so that the process of sensemaking is continuously reconfigured by actors which also work simultaneously in synchronic multilevel (Costa 2022a). “It is not that part of the process has been replaced; rather the whole task has been redesigned, and the skills of the human user often co-evolve with the technology” (Orallo & Vold 2019, p. 507).

Some scholars offer a phenomenology of this change such as speaking about the “AI extender” (ivi), digital obliquity (Floridi 2021) and extended human cognition (Clark 2008; Miller 2010). In this challenging context, learning processes have to do with the capacity of human beings to deal with complex phenomena by means of vicarious cognitive and emotional strategies (Sibillio 2022). Thus, this recalls the concept of learning III, that is the capacity to change the system of alternatives from which choice is made to allow human adaptation to evolutionary processes (Bateson 1978).

Consequently, the investments on professional learning and reskilling appear not only a crucial requirement to reduce the social divide (OECD *Preparing vocational teachers and trainers* 2022), but also an attempt to respond to the “vocational crisis of teaching” (Eurydice 2021, p. 32) which have been bothering European teachers for decades – dissatisfaction with salary (Eurydice 2021; Talis vol II 2020), high levels of work-related stress for almost half of the teachers in Europe, precariousness (Talis vol I 2020), and early resignation (Education at a glance 2021).

The subsequent paragraphs show the theoretical attempt to connect teacher professionalism with Bateson’s logical category of learning to face complexity (Baldacci 2012). In the background an analysis between Irish and Italian post-primary school is drawn.

2. Teacher professionalism among Irish post primary and Italian high school

According to Massimo Baldacci, the professional attitudes of teachers entail three categories defined by Bateson (1978) as learning I, learning II or deuteron-learning and learning III. Learning I and II relate to professional knowledge and professional vision, whereas learning three with teacher agency.

Professional knowledge is the teacher's subject-specific knowledge for teaching (Margiotta 2018), while professional vision is the capacity to overcome the gap between theoretical and practical learning and thus, to support the transformation of cognitive resources into teaching practice. Both are seen as emerging from the interaction of individual knowledge/skills with environmental conditions, the class. According to Stürmer and Seidel (2017) they imply two interconnected subcomponents: "the selective attention to classroom events (noticing), and the interpretation of classroom events (reasoning)" (Ivi, pp. 138-139). The basis for these two attitudes is set during initial teacher education (ITE) and afterwards developed during in service work. It recalls the role of deuterol-learning: "the capacity (of) learning to learn" (Bateson 1978, p. 293).

Schon and Argyris (1978) note the importance of deuterol-learning in an organization:

when an organization engages in deuterol-learning, its members learn about organizational learning and encode their results in images and maps. The quest for organizational learning capacity must take the form of deuterol-learning; most particularly about the interactions between the organization's behavioral world and its ability to learn (Ivi, p. 29).

In organizations like schools, teachers' professional and organizational learning are seen as two sides of the same coin (Costa 2015). Teachers need to belong to communities of practice (Wanger 2006) that help to empower their reflective thinking (Dewey 1933), the emotions of responsibility (Dato 2019) and transformative learning (Mezirow 1991). Indeed, "schools are small societies" (Wieck 1977, p. 10) composed of people who occupy roles in the task system in continuing interaction with environmental conditions – policies, territory, communities. Internal (professional community) and external (policies and territory) environments are expressions of enabling

or disabling “bio-power” (D’aniello 2017). Teachers’ positionality in relation to power is what makes teachers agents of social, cultural, and civic change. Biesta et al (2015) use the expression of “teacher agency” as pointing out the idea of teacher as an “agent of change” (Biesta et al, 2015, p. 87). This expression highlights the quality of the engagement of actors with temporal-relational contexts-for-action. Agency is “a temporally embedded process of social engagement, informed by the past, oriented toward the future (as a capacity to imagine alternative possibilities) and ‘acted out’ in the present (as a capacity to contextualize past habits and future projects with the contingencies of the moment)” (Ivi, p. 24).

In this sense, agency introduces the concept of Learning III in an heutagogical perspective. Heutagogy emphasizes that learning and the use of technology can be seen as a way to self-determine the learning process and to shift the locus of power control (Hase & Kenyon 2013).

2.1. *Teacher professionalism in Irish post-primary schools: the challenge of complexity*

Despite the general situation of European teachers, teaching in the Republic of Ireland is still a profession of choice (Clarke and O’Doherty 2020). From 2006, the professional body for teaching in Ireland – the Teaching Council – was established (Eurydice 2022a). It radically changed the landscape of teacher education and professional development, ensuring both new professional requirements and significant salary increase (Eurydice 2022b). From its beginning, teachers are required to register with the Council, pay an annual fee for registration, and accept the values and code of professional conduct for teachers (O’Donoghue et al 2017). Teachers must hold professional qualifications to secure registration, and only registered teachers can be employed in Irish schools. Teaching Council is also responsible for assuring the quality of Initial Teacher education (ITE), which is provided through either a concurrent or consecutive (most common) model. For further details Bolt and Purcell’s research is suggested (2021).

Teaching Council also runs the induction process for post-primary school – the *Droichead*¹ – in collaboration with mentoring action of schools.

1. The Irish word for pathway bridge. It has become compulsory for all beginning teachers in 2020–2021.

In service teachers are recognized as autonomous professionals, committed to their continued professional development and life-long learning (Clarke and O’Doherty 2020). Therefore, if during ITE teachers learn the basis for professional knowledge and professional vision, it is during their career that they need to develop it.

Recently the Irish educational policy has recognized the crucial role of the Distributed Leadership (DL) model in post-primary schools to shape and develop teacher learning (DES 2018, p. 4). From 2008-2018 a thematic review of research in this area was conducted (Murphy 2019). It points out two main statements: 1). a tension between individual and system needs in developing a coherent strategy to build leadership and, 2). the important role of formal and informal learning. Although middle management (ML) is not formally inducted, trained or supported in Ireland, the Department of Education (DES) supports a culture of lifelong learning which encourages teachers “to take ownership of their professional development” (Kavanagha *et al.* 2021, p. 23). For this reason, the project *Developing an evaluation framework for teachers’ professional learning in Ireland* seems to be a useful device to evaluate teachers’ professional learning² (TPL). The project outlines the findings from detailed desk-based research including a literature review (Rawdon, Sampson, Gillece, & Cosgrove, 2020), a survey of teachers and principals in primary, post-primary, and special schools (Rawdon *et al.*, 2021), and a small-scale consultation with children and young people (Rawdon *et al.*, 2022). A conceptual model for the evaluation of teacher professional learning (TPL) is eventually presented.

In line with the positions of Baldacci and Guerriero, this model portrays a multidimensional construct (Guerriero 2017, p. 152; Baldacci 2020) consisting of four dimensions which affect the wellbeing, learning and inclusion for students, teachers, and school leaders (Rawdon *et al.*, 2021).

Here the four dimensions:

— *Contextual factors* include School (school and class characteristics), System (organizational factors, policy, curriculum, standards, and so...) and Individual (teacher and student characteristics).

2. The terms TPL replace replaces Continuing Professional Development (CPD) or other analogous terms used in the literature. Exceptions to this are direct quotations or if the original term is required to conserve the intended meaning.

- *Key features of PD* include core features (TPL focus, ownership, coherence), Support of Diffusion, Facilitator of Quality, Structural Features (accessibility, collective participation, active learning, duration).
- *Teacher quality* includes Cognitive Goals (professional and pedagogical knowledge), Skills, Affective Goals (attitudes /beliefs).
- *Teacher Behaviour* includes Instruction Practices, Interaction Patterns and Reflective Practise.

My proposal is to consider the Rawdon and colleagues' model as an emblematic standpoint to classify and evaluate TPL in Italian high schools. In this perspective, TPL may improve the professional process in continuity with ITE in order to enable teacher agency (Margiotta 2018).

2.2. *Teacher professionalism in Italian high-school: some perspectives for the Law n. 79*

Teacher professionalism is a complex issue in Italy. After the abolition of the SSIS (postgraduate school for secondary education), secondary school teacher education has been deprived of an organic model (Sibilio 2022). The lack of an organic pathway for ITE and teacher induction has, as main consequences, a structural crisis in teacher supply – consisting in a shortage of teachers in STEM areas, and an oversupply in humanities –, ageing in teacher population and precariousness due to the waiting list of qualified teachers³ (Eurydice 2021; Angotti & Fonzo 2022). This situation is not only an anomaly with Europe but constitutes a weakness of Italian secondary schools (Baldacci 2022). Although many praiseworthy training initiatives have been rising, since TPL became mandatory and ongoing (Good School Law 2015), a uniform program which connects ITE, induction and TPL is still missing (Angotti & Fonzo 2022). The law n° 79, approved in compliance with the Mission 4 of the National Recovery and Resilience Plan on the 29th of June 2022, represents an attempt to reform ITE, teachers' recruitment system and in-service training for school-staff (PNRR 2022). In a recent book, Bertagna, Magni et other (2022) offer a critical analysis of ITE and teacher induction. However, a critical review of in-service TPL is still missing.

3. Graduatorie ad esaurimento www.miur.gov.it/web/guest/reclutamento-e-servizio-del-personale-scolastico

Many Italian scholars recognize the importance of focusing on ITE, induction and TPL as an indissoluble trio (Margiotta 2018; Ellerani 2018; Costa 2022 b). Using Nussbaum's category of functioning, capability, and agency, Costa explains that the internal capabilities – pre-existing basic capabilities acquired by processes, such as education, ITE, exercise – need enabling school conditions (combined capabilities) to make the exercise of freedom a real live option (functioning) (Costa b 2022). In fact, only the real functioning of combined capabilities changes the pattern of power relationship (Ivi). Thus, if on the one hand teacher professionalism interpreted is as «the capacity for professional autonomy and teacher agency» (Kennedy 2014), on the other hand this perspective suggests that the quality of teaching is determined not only by the dedication of the teachers, but mostly by the environment in which they work (OCED 2015).

3. Conclusion and further works

This paper offers some working notes helpful to frame teacher professionalism in relation to the new ITC revolution and the paradigm of complexity. Nowadays, teaching calls on a depth of professional, personal and moral capacities of teachers, and demands that initial and continuing development programs become both practical and profound, to impact on the daily lives of classrooms and consequentially on the “equity of schooling” (Sahlberg 2018).

Further works will provide a mixed method research (Creswell 2014) in order to investigate and verify the possibility to use Rawdon and other's framework (2021) in Italian high school.

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