



ITALIAN JOURNAL OF SOCIOLOGY OF EDUCATION

Editor-in-Chief: Silvio Scanagatta | ISSN 2035-4983

Technological Mediations, Lifelong Guidance and the Reshaping of the Teaching Profession

Antonietta De Feo, Catarina Gonçalves** and Marco Romito****

Author information

* Department of Philosophy, Communication and Performing Arts, University Roma Tre, Italy. Email: antonietta.defeo@uniroma3.it

** Instituto e Educação, Universidade de Lisboa, Portugal. Email: catarinagoncalves@ie.ulisboa.pt

*** University of Milano - Bicocca, Italy. Email: marco.romito@unimib.it

Article first published online

February 2019

HOW TO CITE

De Feo, A., Gonçalves, C., Romito, M. (2019). Technological Mediations, Lifelong Guidance and the Reshaping of the Teaching Profession. Italian Journal of Sociology of Education, 11(1), 91-114. doi: 10.14658/pupj-ijse-2019-1-5

Technological Mediations, Lifelong Guidance and the Reshaping of the Teaching Profession

Antonietta De Feo*, Catarina Gonçalves** and Marco Romito***

Abstract: Our paper outlines how lifelong guidance policies constitute a crucial device that solicits the reshaping of teachers' professional culture. Using a policy instrument approach, we analyse how teachers are recruited into a new educational paradigm and the key role played in this respect by technological mediations enabling particular educational and guidance practices. We discuss, in particular, the case of SORPRENDO, a guidance software used in Italian schools, that was developed by a private company as the main output of a European project involving a public-private partnership. By looking at this software, in the first place, we emphasise how digital devices are not simply neutral and technical solutions to specific problems. They are impregnated with symbolic and political dimensions, carry meanings and constitute the material manifestation of policy orientations. We also show that although this digital tool mobilises teachers with new visions and ideas about guidance and teaching more broadly, it is incapable of ensuring their immediate adherence to this project. Teachers' professional culture, their everyday practices, the inertia of schools' organisation and administration constitute a terrain where processes of negotiation and accommodation create tensions and contradictions.

Keywords: *lifelong guidance, teachers, SORPRENDO, career management skills, professional culture*

* Department of Philosophy, Communication and Performing Arts, University Roma Tre, Italy. Email: antonietta.defeo@uniroma3.it

** Instituto e Educação, Universidade de Lisboa, Portugal. Email: catarinagoncalves@ie.ulisboa.pt

*** Department of Sociology and Social Research, University Milano Bicocca, Italy. Email: marco.romito@unimib.it

Introduction

Since the late twentieth century, guidance activities have gradually become a central element of daily life in schools. On the one hand, the guidance field is becoming a space where schools compete to attract incoming students (De Feo & Pitzalis, 2017); on the other hand, guidance activities are increasingly regarded as crucial to boost student success and reduce their probability of dropping out or falling behind in their studies (Hooley, Marriott & Sampson, 2011; Vaira, 2007; Romito, 2017). The latest educational policies at national and European levels have integrated guidance within broader Lifelong Learning programmes (Watts, Sultana & McCarthy, 2010) and a European strategy for lifelong guidance has been formulated. The aim of this strategy is to make the fields of education and work more porous and to promote the idea that guidance services should be provided to citizens at “any age and at any point in their lives” (Council of the European Union, 2004, p. 2). Lifelong guidance would then allow citizens to keep up with knowledge and develop their adaptive capacities in a context of growing job flexibility (CEDEFOP, 2011; ELGPN, 2015). As scholars have stressed, the intertwined policies fostering lifelong learning and guidance at European and national levels act as means of intervening in the field of education in order to support the needs of contemporary, flexible, knowledge-based production systems (Ball, 2006; Bengtsson, 2011; Pitzalis, 2016; Watts, 1996).

Looking at the Italian context, our paper outlines how lifelong guidance policies and the technological mediation used to make them operational constitute crucial devices for fostering change in teachers’ professional culture. Indeed, the active involvement of teachers and the adoption of new beliefs about the goals of school are key conditions for implementing these policies (Pitzalis, 2016). We set out from a socio-material perspective, analysing the relations between social actors and material objects (Decuyper, 2016; Fenwick & Edwards, 2016). We also find useful Lascoumes and Le Galès’s (2007) policy instrument approach which offers a view of devices for policy that is not purely technical but also regards them as carriers of particular meanings. Both approaches support our effort to analyse the presence of a specific digital device in the governing of education by observing its appropriation by social actors. The socio-material and the policy instrument approaches allow us to point out that the effects of introducing a digital object into an educational context are inseparable from the relational dynamics surrounding the object. Thus, we analyse how teachers are recruited into a new educational paradigm and the key role played in this process by a digital device that carries particular meanings and enables particular educational and guidance practices. From this point of view, digital devices can be conceived of as artefacts that have some degree of agency or an ability to exert power (Kitchin &

Dodge, 2011, p. 39). However, focusing on the dynamics of appropriation of such devices clarifies that this power is mediated and negotiated within the concrete conditions in which they are enacted. The paper discusses, specifically, the case of SORPRENDO, a software product whose aim is to improve the quality of guidance services in Italy. SORPRENDO gives students the opportunity to explore their own interests, aspirations and abilities, and provides online training support for teachers as well as an e-learning platform where both students and teachers can acquire knowledge about professional and educational opportunities for students.

In the following sections we will first sketch out how European and Italian policy discourses address the teaching profession as a relevant actor in fostering a lifelong guidance agenda. Second, we will provide a theoretical reflection on the agential effect of digital devices in the governing of education, in particular through their interaction with teachers' practices. Third, we will describe how we have designed an empirical case study research and gathered empirical data. Finally we will present our results, providing an analysis of the SORPRENDO digital platform, exploring how it constitutes a powerful technological mediation that allows teachers to be recruited within the lifelong guidance paradigm, and discussing how the organisational and cultural features of the teaching profession shape the concrete enactment of this process.

Teaching in a lifelong guidance approach

In the last three decades, in many countries, teachers have experienced a mix of educational reforms related to a new "language of schooling" (Day & Smethen, 2009). A broad literature on educational policies has highlighted how economic theory and new performance devices (such as quality management) are changing the standards of learning and teaching and redesigning teachers' professional practices and values (Hargreaves, 2003; Ball, 1998). In this regard, two main processes of transformation have been identified. The first pertains to school governance and the redefinition of tasks, roles and responsibilities within the school's organisation; the second to the penetration of the lifelong guidance/lifelong learning paradigm and to a process of redefinition of the teaching goal towards a greater emphasis on students' acquisition of Career Management Skills (CMS).

Regarding the first process, it has been suggested that one of the most significant discourses regarding educational reform involves developing self-managing schools (Newman & Clarke 1994; Angus, 1994), a new form of school governance based on the decentralisation of responsibility (Ingvarson & Chadbourne, 1997).

In Italy, this new vision was incorporated, at the end of the 1990s, in the Legge sull'Autonomia Scolastica (Law 59/1997). This reform contributed substantially to the transformation of professionalism in teaching, changing forms of leadership, career models and teaching practices (Benadusi & Consoli, 2004). It favoured the emergence of middle management teachers, enabling schools to operationalise their management strategies. These teachers are involved in organising and coordinating school projects and resources; they also operate as organisational *relé* (Crozier & Friedberg, 1977), establishing and organising relationships between their schools and a network of private and public organisations to develop school improvement plans.¹

The education field is one of the most important spheres in which to observe the managerialisation of work practices and the marketisation of professional service (Mik-Meyer, 2018; Evetts, 2010) to become a form of “managerial professionalism” (Day & Smethen, 2009) that extends teachers’ responsibilities towards their students beyond school walls (Lai-Yeung, 2014; Brennan, 1996).

The second process of transformation worth recalling here is that the new features of school governance tighten the connection between education and employment – promoting teaching and pedagogical practices that are more focused on employment-related skills – particularly through the implementation of the lifelong learning and guidance agenda. As recent policy documents have increasingly stressed (Law 107, “La buona scuola”, for instance), the acquisition of self-entrepreneurship, transversal, social and communication skills by students is identified as a crucial goal of teaching practice and a key strategy to enhance employability as students move to the labour market. Scholars have highlighted how, in the European educational space, lifelong learning and guidance policies are key levers in restructuring the educational order to support the needs of the contemporary knowledge economy in which “the prosperity of workers will depend on an ability to trade their skills, knowledge and entrepreneurial acumen in an unfettered global market place” (Brown & Lauder, 1996, p. 3, in Ball, 2006, p. 68). Indeed, guidance activities constitute a key setting for developing CMS amongst students: the abilities that lead to one “being able to evaluate oneself, knowing oneself and being able to describe the competences one has acquired in formal, informal and non-formal education” (Council of the European Union, 2008, p. 8). These skills include the capacity to develop a strategy for an

¹ In order to carry out the institutional goals of the reform, contractual rules have established a number of “instrumental functions” (*funzione strumentale*) within teaching staff. These positions are occupied by teachers elected by the Teachers’ Board and held responsible for special projects within specific competency areas (curricular and extracurricular). Their tasks include managing an Educational Offer Plan, teaching support, student services, external relations, international projects, etc.

individual career (setting goals and objectives) and an action plan to deliver this strategy (including developing the skills required to be successful in a chosen educational or working career), and the capacity to evaluate oneself through various skill monitoring instruments.

As has been noted, the current emphasis on CMS on the one hand highlights “a conceptual change from viewing guidance as a remedial, one-off and directive activity to a preventive, lifelong and learner-centred process” (Watts et al., 2010, p. 98). On the other hand, the promotion of this discourse reveals the radicality of the lifelong guidance project which aims to forge entrepreneurial subjectivities while redefining and restructuring the overall aim of formal education (Bengtsson, 2011).

As has been rightly emphasised, however, the success of lifelong guidance policies and CMS programmes depends on “whether or not teachers are keen and able to integrate career learning in their respective subjects, and whether or not they have been trained to do so” (Sultana, 2012, p.13). For this reason, teachers and their training have become core elements of policies at all levels:

Teachers play a primordial role because they are the people in our societies providing a service of such a marked multidimensional character. Contemporary trends are that their role is becoming even more multi-faceted, because it increasingly incorporates social, behavioural, civic, economic and technological dimensions. (European Commission Study Group, 1997, p.131).

There is a need for increasing specialisation within the teaching profession to bring extra expertise to areas of school life requiring it, e.g. remedial, guidance and counselling, management and leadership. (Coolahan - OECD, 2002, p. 12).

Although policy interest in guidance activities dates back to the mid-1990s, the necessity of providing a specific framework within which to define a new guiding role for teachers became increasingly important in “Education and Training 2010”, a European work programme on lifelong learning initiated in 2002 that aimed to implement the Lisbon goals. The Commission’s work on Education and Training 2010 sought to galvanise member states to make guidance one of the objectives of schools, giving special attention to the lifelong acquisition of CMS and supporting teachers to develop CMS programmes (Council of the European Union 2004, 2008).² Within the Italian

² In support of the promotion of lifelong guidance aims and programmes, an expert group was established with support from the European Commission under its Lifelong Learning Programme: “the European Lifelong Guidance Policy Network – and its precursor, the more informally constituted Lifelong Guidance Expert Group (2002–2007) – was established in 2007, with the aim of assisting its member countries and the European Commission in developing European co-operation on lifelong guidance in both the education and the employ-

context, these recommendations were translated into a National Guidance Plan (Miur, 2012), as result of which there was a proliferation of institutional initiatives to boost career guidance within schools. In this respect the most recent ministerial guidelines on lifelong guidance (Miur, 2014) constitute a clear example of the Italian government's efforts to promote guidance services in schools and of the new tasks assigned to teachers to translate policy directives into practice:

1. To build networks with other public or private actors to carry out activities accompanying students in the transition from school to work;
2. To support and evaluate future planning by students through their skill development;
3. To improve a "guidance didactics" aimed at teaching not only cognitive skills (literacy) but above all *life skills* (such as motivation and personality traits) and CMS.

The first two tasks clearly exemplify, and translate into teachers' everyday practice, the new managerialism policy discourse discussed above. Teachers are involved in policy goals to overcome the mismatch between workers' skills and employers' needs and, at the same time, are recruited to evaluate and monitor student progress in developing CMS. It is particularly worth stressing that the third task (while emphasising the need for innovation in the field of didactics) makes relatively explicit the reforming attempt to focus on the market value of school subjects at the expense of purely cultural or educational value. However, it is key to highlight precisely how teachers are concretely engaged in this reforming process and through which arrangements and devices they are encouraged to pursue the new guidance tasks. Here, it is worth noticing three intertwined drivers that facilitate changes in teachers' everyday work. First, the ministerial guidelines identify the occupation of school middle management positions by teachers as one of the most important devices – together with teacher training – to promote and disseminate the categories, principles and solutions of the lifelong guidance paradigm. These teachers (see footnote 1) are held responsible for coordinating guidance activities, monitoring their impact and furthering their development by establishing relationships between the school and local networks of guidance practitioners and experts. Second, the ministerial guidelines (Miur, 2014) stress the importance of involving external experts to familiarise school actors with innovative guidance practices and approaches. Third, a special role is ascribed to the introduction of digital devices as guidance and communication tools. These are identified as capable of fostering the acquisition of CMS, facilitating teacher training in lifelong guidance, supporting exchanges of practices among schools, and boosting the dissem-

ment sectors" (Sultana, 2012, p. 226).

ination of guidance activities in the region whilst assuring their monitoring and quality (Miur, 2014, p. 11-12).

Digital devices and the governing of teaching practices

The transformations related to lifelong guidance policies in Europe described above are part and parcel of broader changes in the governing of education. Researchers have described these transformations using expressions such as governing “by numbers” (Ozga, 2009), “by comparison” (Nóvoa & Yariv-Marshall, 2003) or “by feedback” (Simons, 2014). More recently, the idea of digital education governance (Williamson, 2016a) seeks to account for the widespread presence of digital devices that, among other purposes, collect, process and disseminate data on students, schools and educational systems and which, through potent forms of visualisation, offer a particular picture of the educational world. Educational research has raised questions about how strongly this state of affairs impacts on “what is known and knowable” in education (Ozga, 2016, p. 70), and points out that digital data circulating within the educational realm is always and necessarily framed within a particular rationality (Fenwick & Edwards, 2016; Ozga, 2016; Selwyn, 2016). The rationalities that digital devices carry, which are often not explicit or explicitly discussed, tend to be performance-focused and accountability-oriented. They permeate the educational world and are enacted in school contexts at both organisational and individual levels (Selwyn, 2015) and thus contribute to changing educational meanings and professional practices, as those of teachers.

The presence of digital devices in the educational world is not limited to artefacts that collect and process performance data. Diverse software packages and platforms mediate all kinds of education-related activities such as school management, school-parent communication, school inspection or, as examined in this paper, vocational and career guidance. This means that educational actors are invited to interact with multiple digital devices, a fact that has drawn the attention of education researchers³ seeking to understand how these contribute to shaping educational practices.

Our decision to concentrate our analysis on a digital object implies a certain view, not just of digital devices, but of how social life is constituted. First, relying on a socio-material approach, we consider that when analysing social practices (like those of teachers), attention must be paid to the material conditions that contribute to shape those practices (Fenwick & Edwards, 2016). Second, we consider digital devices to be impregnated with symbolic

³ For a good account of these research projects see, for example, the *European Educational Research Journal's* special issue on “Digital education governance” (Volume 15, Issue 1, January 2016).

and political dimensions. The countless digital devices now present all over the educational world carry within them certain discourses, ideas of what education and its governing are and should be (Carvalho, 2014; Hogan et al, 2015; Decuypere, 2016; Williamson, 2016a). Third, these devices also carry ideas about who is to be addressed and what type of actions he or she ought to take (Decuypere, Ceulemans & Simons, 2014; Piattoeva, 2015). That is, digital devices make certain people do certain things, and not others. Fourth, and following all the above, digital devices can be appropriately conceived of as policy instruments – not as neutral devices but as both material manifestations of policy and carriers of meaning. This is understood within a view of public policy as a collective process, in which the roles of a vast array of actors and contexts, from policy formulation to enactment, are acknowledged (Lascoumes & Le Galès, 2007).

Thus, we depart from the idea that software resources are not neutral, strictly technical solutions capable of solving particular problems and with purely technical results (Fuller, 2008; Kitchin & Dodge, 2011; Wajcman, 2015); they are artefacts that have agency or the ability to exert power (Kitchin & Dodge, 2011, p. 39) in their interactions with the world. Although these software artefacts determine some aspects of those interactions, this does not happen in a deterministic way but rather as a function of the structures, people, rules, etc., with which they interact (Kitchin & Dodge, 2011). Furthermore, the “design, promotion and use [of digital technologies in education] are all sites in which struggles over power are conducted” (Selwyn & Facer, 2014, p. 491). Nevertheless, it is important to acknowledge that “the materiality and obduracy of [software] artefacts create boundaries to the possibilities for interpretation and usage” (Wajcman, 2015, p. 32) and that the scripts a software object carries from the moment of its design and development create the conditions for opening up certain possibilities and not others.

A study on data-based school governance (Selwyn, 2016) shows for example that digital solutions used in schools for producing and managing data create the conditions for an extremely reductive way of handling complex educational issues such as the teacher-pupil relationship. Simplified and easy-to-read visual arrangements of data, which leave behind a whole set of important experiences and meanings, drive teachers’ decisions. Fenwick and Edwards (2016) point out that “professional responsibility is delegated to digital technologies” (p. 124) as data analysis and decision-making is solely attributed to algorithmic processes that deal with large sets of data, “pos[ing] questions as to the nature of future professional work and the values embedded in and evidenced by such work” (p. 126). The presence of digital technologies in teaching-learning processes create a tension between “new” and “old” or “traditional” and “innovative” methods (Colombo & Landri, 2009) as well as conflicts amongst teachers (Pitzalis, 2016). Furthermore, as digital de-

vices become the object of disputes at all levels within educational organisations (Pitzalis, 2016), attention must be paid to these complex dynamics, and how actors relate to these devices and amongst themselves through their mediation.

Indeed, the presence of digital technologies within learning contexts imposes “an urgent need for change”, defines specific principles of vision and division of the educational field, “mobilises” school actors around their use and management, and therefore becomes an object of negotiation and conflict (Pitzalis & De Feo 2016; Pitzalis et al., 2016). As Selwyn and Facer (2013, p.8) suggest, there is indeed a need to break with “the deterministic assumption that technologies possess inherent qualities and are therefore capable of having particular predetermined and predictable ‘impacts’ or ‘effects’ on learners, teachers, and wider society” and to focus more on the “negotiations realized in technologies and technological practices”. Digital devices are enacted within specific settings and their transformational promises can be significantly shaped by the different competences, resources (and distribution of these resources) and professional cultures available locally. From this point of view, education research highlights how teachers often adapt or ignore hegemonic pedagogies embodied in digital devices and “construct their own representations of the technology which are more in line with their curricular and personal goals” (Schmid & Whyte, 2012, p. 234).

The aim of this paper is precisely that: to explore how the introduction of a specific digital technology, with certain pedagogical approaches and discourses inscribed within it, opens up space for changes and negotiations that reconfigure teachers’ practices and professional identities within the constraints and opportunities that different contexts offer for its enactment.

Research design

In this paper we explore the case of the career guidance software SORPRENDO to show how technological mediation can contribute to opening up space for changes in the teaching profession. SORPRENDO is here understood as a socio-technical device (Decuyper, Ceulemans, & Simons, 2014). On the one hand, it performs particular technical operations: it allows users to accomplish specific sequences of tasks and enables schools and teachers to address their students’ career guidance needs. On the other hand, it conveys specific meanings, views of education and values that contribute to forging the self-understanding of its users as well as the professional culture of teachers (Ramberg, 2014). It is particularly through interactions with the software and its online platform that teachers are immersed within the life-long guidance policy discourse in their everyday teaching practices, and it is

through these interactions that different translations of this policy discourse can take place.

Following these considerations, our research design has two main phases. First, we analyse the SORPRENDO digital platform using an autoethnographic approach (Davies, 2008). We explore the software and its online platform, coding, the type of scripts it enables and the way it addresses its users, particularly teachers. In the second phase we use in-depth interviews with a sample of teachers and guidance professionals to explore how the software was enacted within two very different school contexts and the types of changes it activated in teachers' practices and professional identities. Based on a map provided by the Centro Studi Pluriversum⁴ which identifies secondary schools where the software was used, we chose to focus our analysis on two schools positioned at the opposite ends of the Italian educational field. On the one hand, we selected an academic track ("general") school in an upper class area of Milan, Lombardy; on the other hand, we have carried out interviews in a technical-vocational school in a working class neighbourhood of Cagliari, Sardinia. By interviewing all teachers and guidance professionals involved in the use of the software or in the organisational roles that made this use possible in these schools (totalling six teachers and five guidance professionals), our aim is to explore how teachers are involved in the pedagogical discourse on lifelong guidance as channelled by the software. Furthermore, as technological devices are "domesticated" within school life (Selwyn, 2015; Pitzalis, 2016), we devote our attention to exploring how teachers' competences, resources and professional cultures within different contexts interact with the scripts, rules and discourses inscribed within the software.

Results

Get informed, get trained and share practices: How the online platform favours the dissemination of the CMS approach

SORPRENDO is a technology that provides two related functions. First, it is a software that elaborates the data on self-perceived abilities and interests provided by individual users, through questionnaires, to produce an output (a professional matching list) that aims to guide them in the acquisition of CMS. Second, it is an online platform where users can acquire and compare information concerning European, national and local initiatives in the field

⁴ In this phase we also interviewed the developer of the Italian occupations database on which SORPRENDO is based, the Centro Studi Pluriversum. We interviewed its CEO, Giulio Iannis, to understand how the software came into being and the process by which it was designed.

of career guidance and access training opportunities through webinars and tutorials. Both functions are obviously interconnected as the type of information and training opportunities that the online platform offers is in line with the rationales and scripts that guide the software in its interaction with users. However, students mostly engage with the first function, the software, while the second, the platform, is key in facilitating interest in the software among teachers and enables their immersion in the lifelong guidance discourse inscribed within and promoted by the software.

Hence, before moving to a discussion of the processes through which the software is enacted within school contexts, we provide a brief analysis of the platform, here focusing only (due to space limits) on content that specifically addresses the teaching profession.

Figure 1. SORPRENDO's homepage



Positioned at the centre of SORPRENDO's homepage (Fig. 1) is a text in uppercase letters: "explore, choose, realise... build up your future!". This is both a motto synthesising the rationale of the software – which embodies a particular approach to guidance based on the acquisition of CMS and on fostering users' autonomy and responsibility – and a programme of action: an anticipation of what the software expects from its users. Through this text, teachers are immediately positioned as subjects whose agency within the guidance field is precisely delimited by the need to favour students' autonomous explorations and decisions. This is an approach to guidance that is sig-

nificantly different from the one that characterises the role of the teaching staff when students face key educational branching points within the Italian context, and is based on an explicit recommendation of the educational trajectory that most suits a student's potentialities (Pitzalis 2012; Romito 2014; 2016; 2018).

Second, the structure of the homepage suggests that teachers or school managers are amongst the principal addressees of the messages inscribed within the platform. Through a hyperlink attached to the word "school", the platform allows users to be immediately redirected to other pages and sources of information where other teachers describe the use and benefits of SORPRENDO in their schools. Moreover, through a link prominently displayed on the blue upper bar on the homepage, the software presents itself as an easy-to-use solution to the combined study/work experience promoted by the La Buona Scuola reform (law 107/2015). In this way the platform aims to address schools' needs to find ready tools and practices allowing them to implement the policy and respond to ministerial steering (Fig. 2).

Figure 2. SORPRENDO sections that address teachers

Ecco quindi SORPRENDO LEARNING@WORK, la nuova versione del software SORPRENDO che comprende le migliori risorse didattiche e strumenti per l'orientamento pensati proprio per gestire gli aspetti orientativi dell'Alternanza scuola lavoro.

L'acquisto della licenza SORPRENDO LEARNING@WORK prevede l'accesso a:

<p>IL SOFTWARE SORPRENDO PER L'ORIENTAMENTO</p> <p>Il software SORPRENDO con una banca dati sulle professioni in grado di fornire schede dettagliate su oltre 400 profili professionali e strumenti per esplorare, conoscere e abbinare gli aspetti caratteristici di singoli profili professionali con i propri interessi, aspirazioni e abilità.</p>	<p>IL MODULO DI ORIENTAMENTO NELL'ALTERNANZA</p> <p>Il modulo 'Orientamento per l' Alternanza scuola lavoro con SORPRENDO', un percorso didattico di orientamento che prevede 3 sessioni di attività laboratoriali, in gruppo e individuali, per complessive 18 ore, che i Docenti possono realizzare all'interno del monte ore previsto per i percorsi in Alternanza scuola lavoro.</p>
<p>UN SUPPORTO DIDATTICO PER I DOCENTI</p> <p>Un supporto didattico per i docenti con schede dettagliate sulle azioni di orientamento da realizzare per preparare gli studenti alle esperienze di alternanza scuola lavoro e supporto on-line da parte di esperti di orientamento.</p>	<p>UNA PIATTAFORMA E-LEARNING E WEBINAR PER GLI STUDENTI</p> <p>La piattaforma e-learning e webinar, con risorse utili allo studente per acquisire in autonomia conoscenze relative alle professioni, al mercato del lavoro, alla sicurezza e tanto altro ancora.</p>

Third, a key aspect particularly associated with the possibilities inscribed within digital technologies is that they constitute an immediate, and potentially unlimited, repository of easily reachable learning and network facilities, and a technological space where possibilities of learning and knowing are expanded through online-networks. In this respect, one of the crucial operations that the SORPRENDO platform accomplishes is to allow users (teachers or school managers) to receive training and support from SORPRENDO staff. Through a link that is easily reachable through the homepage, the platform enables teachers to access manuals and video tutorials and understand the functioning of the software. Even more significantly, through this link the platform constitutes a space where concrete experiences, whether previous or ongoing concrete examples of school-based enactment of the software, are reported and discussed (Fig. 3).

Figure 3. SORPRENDO's display of concrete experiences



As the image above illustrates, this display of concrete experiences is among the most prominent clickable areas on the homepage. Moreover, a drop-down menu on the blue upper bar redirects users to a webpage platform called esperienze (experiences) which provides not only the rationale behind the software, but also how it is put into practice, opening a meaningful space for pedagogical changes. The platform is also a space where scheduled webinars are offered. This provides teachers not only the possibility of

interacting remotely with experts in the field of career guidance, but also of becoming immersed in a larger epistemic community with other teachers and school managers interested in learning new approaches and methodologies of career guidance. Hence, through the website content, the sharing of experiences, the webinars and the promotion of events, the platform constitutes a space of networked sociality (Wittel, 2001) or, more properly, the socio-material support allowing teachers to be part of a “digital formation” where specific forms of organisation and interaction with a digital technology (the SORPRENDO software) acquire meaning through a process of sharing and stabilisation (Colombo & Landri, 2009).

The scenario for the implementation of SORPRENDO: Teachers’ practices and organisational contexts

Teachers are a capillary resource capable of spreading specific ways of conceiving and practising educational and guidance work across Italy. It has been pointed out that “the active involvement of teachers is the core element of national and European policies. This is to be achieved through the modification of their function and role and their professional ‘re-socialization’ and pedagogical ‘conversion’ with a view to adopting new pedagogical beliefs and adhering to a new educational paradigm” (Pitzalis, 2016, p. 15). The aim of this section is to analyse the processes through which teachers’ interest in mobilising to use SORPRENDO has been generated and to show how contextual constraints and opportunities are key mediating elements that shape how the guidance discourse and pedagogy inscribed within the software are made operational.

Most Italian schools base their guidance activities on teachers’ recommendations (judgements by teaching staff who identify appropriate educational paths based on students’ perceived educational potential) and on information activities carried out through web searches and orientation fairs.⁵ In this context, although government guidelines on lifelong learning and lifelong guidance encourage schools to frame guidance activities as an opportunity for students to develop more sophisticated CMS, Italian schools generally lack the instruments, knowledge and organisational infrastructure needed to actually achieve this (Romito, 2016; De Feo & Pitzalis, 2017; Pitzalis, 2012; 2016).

Everything has started in the last few years. We [schools] have been solicited by so many requests to change the way we used to do guidance. Think, for example, of the combined study/work experience that has been implemented very recently. We needed to arm ourselves

⁵ As research on school transitions has shown (Romito 2016; Pitzalis 2012), these types of guidance activities play a significant role in reinforcing the link between educational decisions and students’ socioeconomic backgrounds.

to cope with these new requests. What I did was to look for experts outside the schools, to collect and evaluate various guidance projects from the university or other agencies. I spare you all the administrative issues... it has been hard and we navigate a bit in the open sea. (Prof. Lea, general school, Milan).

In a context that – in its cultural and administrative structure – is the product of a traditional approach to education and guidance, interviews with teachers allow us to point out that the penetration of a guidance paradigm based on CMS acquisition is often premised on specific policy interventions aimed at making teachers receptive to this type of innovation. A key role was played in this respect by FIXO, a project involving 365 secondary schools and 55,000 students between 2011 and 2013, and financed by the Italian Ministry of Work. This aimed to bridge school and work, and supported matching between educational qualifications and labour market needs. Through FIXO, schools were involved in a network of trainers and experts from various government agencies and private organisations that contributed to designing and supporting school guidance activities based on a CMS approach.

On the one hand, this project was a training opportunity for teachers, building their capacity to occupy a middle management position in the school's organisation whilst acquiring skills in guidance and counselling as well as new pedagogical perspectives and professional approaches. On the other hand, FIXO enabled teachers to acknowledge the pedagogical potential of a software like SORPRENDO and to fill with meaning the software's strictly technical features – its scripts, algorithm and outputs:

The software allows us during our interviews with students to frame the working or higher education sector to discuss about. In this way we could pack within six hours all the activities that we have to accomplish within the FIXO project: writing a curriculum, a presentation letter, working on what I like and what I am particularly good at, which are my competences, my personal characteristics and so forth. (Prof. Elio, vocational school, Cagliari).

Our interviews show that SORPRENDO is perceived as easy to use and appealing in its design and scripts, and that teachers do not need particularly specialised knowledge – such as that required to administer psychometric tests – to use it with their students. To a certain extent, by practising using the software, teachers become familiar with a specific approach to guidance and with techniques to facilitate students' acquisition of CMS without the need for difficult and time-consuming theoretical preparation.

Moreover, and this is a key point in our view, the software structure allows a certain standardisation of guidance practices: it provides schools with a predefined design for career guidance activities and, thanks to its digital

features and the training provision on the digital platform, enables its particular approach to be easily disseminated. In other words, teachers “do not have to make any introspective analysis, but only to understand if the students have the basic cognitive tools to be able to elaborate their own project” (Giulio Iannis, CEO of the Centro Studi Pluriversum).

The most basic thing you need to do to develop a school project that involves the use of SORPRENDO is simply to buy the licenses according to the number of students you have. The company gives you some basic technical information to make the software work and that's it. You don't need much more. It is a simple tool, maybe a bit trivial also, it can be used in various ways, more or less complex, but if you are ok with the basics it is really easy. (Prof. Gina, general school, Milan).

As this excerpt illustrates, although the software's intrinsic characteristics allow all teachers to use it with their students, our interviews reveal that the penetration of this digital device into school life depends on the presence of some “leading” teachers. These are teachers who have had the opportunity to test the software as part of larger government initiatives – such as FIXO – and constitute a group of professionals on whom headmasters can rely to manage the complexities associated with the introduction of this particular guidance device within the school's organisation. These teachers, who are more integrated within the new guidance paradigm, are also those actively involved in experimenting with new devices whose goals may collide with the cognitive inertia of their colleagues. As the following excerpt exemplifies, they are also more directly engaged in addressing cultural, organisational and managerial issues associated with making the CMS approach operational within the school context.

I would like that, over time, we were able to build a stable structure, to be able to organise a path that is structural, that remains a fixed point. This is because it would greatly simplify organisation, year after year it [the guidance paradigm] could be organised more easily. Now, instead, let's sail by sight. (Prof. Matteo, general school, Milan).

Because of nature of these schools' organisation, teachers stress the great discontinuity in the offer of guidance projects and state that new learning and practices have only transitory benefits for their students. As we will stress in the next section, the key mission of middle management teachers who are particularly involved in promoting guidance activities is to produce not only organisational change but also a change in the values associated with the teaching profession among their colleagues. This change, as the section below illustrates, cannot be adopted straightforwardly as it may create tensions with major needs and demands emerging from the concrete contexts that schools operate within in everyday life.

SORPRENDO in use: Implications for the teaching profession

Interviews with teachers and school managers reveal that SORPRENDO also constitutes a key resource for quality assurance processes. Certified and sponsored by the Italian government and by a network of guidance practitioners and academics, SORPRENDO allows teachers – specifically, the small proportion responsible for coordinating the guidance activities referred to in the ministerial guidelines on lifelong guidance – to access knowledge and technologies through which students' acquisition of CMS can be monitored and made efficient. Moreover, the SORPRENDO platform provides a number of tools (information packages, networking opportunities, teaching resources) that facilitate and, to a certain extent, enable middle management teachers to actively enact the types of processes needed to make their school capable of promoting the lifelong guidance policy discourse.

However, teachers acknowledge that the software enables “possible professional trajectories” to be drawn out, that need further clarification and to be considered in relation to various factors such as the socioeconomic context. A “quality” guidance activity, they explain, needs much more than simply making the software operational within classrooms.

I have seen there is a different approach to career guidance if you compare general and vocational schools. What I have experienced is that in the general schools SORPRENDO has been used as part of a larger set of guidance activities aimed to go a bit more in depth to identify students' wellbeing needs. And we have had also the university coming here to do a similar type of coaching project with other classes. With the vocational schools the approach has been different. We went more straight to the point. Students were much more interested in identifying their professions and the concrete aspects of those professions. (Prof. Lea, general school, Milan).

As the previous excerpt illustrates, teachers' guidance activities, and how SORPRENDO is enacted in a specific school context, are conditioned and mediated by the specific social composition of the student body and how this interrelates with the school curriculum. This is especially crucial in a country such as Italy, where secondary track differentiation is particularly rigid. Interviewees pointed out that teachers at technical-vocational schools need to cope with much more difficult working conditions. On average they face a higher number of school failures, disciplinary issues and low achievement scores. According to the teachers, in these schools SORPRENDO's capacity to provide meaningful career guidance needs to be supported by other interventions addressing the specific characteristics of the student body. This excerpt illustrates also that technical-vocational school students are particularly interested in going “straight to the point” and identifying a suitable profession. Moreover, while technical-vocational schools are relatively ignored

by higher education institutions, as they do not constitute a large source of prospective students, general schools can often count on institutional networks to provide richer immersion for their students and teachers. Thanks to these networks of guidance experts, teachers are less likely to be solicited by students for immediate answers to their employment needs. As we have developed more fully elsewhere (Romito et al., 2019), the material and social context in which the software is enacted shapes the objectives pursued and the meaning conveyed. In particular, when students' social backgrounds and school curricula are considered, the use of the software has different implications and effects. For example, at general schools teachers can take advantage of social resources (such as academic networks and guidance experts) to go in depth and identify students' wellbeing needs. In the vocational context, on the other hand, teachers experience what interviewees depicted as a more "superficial" approach to career guidance because the relationship between education and employment is more focused on work-related aspects.

The teachers we met acknowledged clearly that their students' guidance needs, curiosity, capacity to imagine future work and education possibilities were intertwined with their backgrounds and family conditions. SORPRENDO, on its own, emphasises that learning (about oneself, or about the education and work offer) is good in itself, that individuals should acquire it and seek to improve throughout their lives. In doing so, SORPRENDO glosses over the socially determined roots of individual motivations, desires and preferences (Kelly, 2006, 2001; Reay, 2017). In this way, as the above excerpt shows, when inequalities in social conditions are considered, the use of SORPRENDO allows the emergence of a tension between the specific aims of an individualistic approach to career guidance and principles of social justice (Hooley Sultana & Thomsen, 2017). This tension is indicative of the contradictions in neo-managerial discourse when enacted within school contexts that differ in terms of their intake and resources; a tension that remains unresolved as the material, cognitive and social resources to accommodate the complexity of students' individuality and background conditions are unevenly distributed among schools.

We are at the edge of a big change. The Ministry, with the combined study/work experience and the guidance needs associated with that; the families that are worried about the future of their children; they ask us to enact innovative interventions. But it is difficult to organise and commit everyone to this goal. With most of my colleagues it is even difficult to meet in order to speak face to face. These digital tools can help... but they are not the solution because we still need to agree on the goal that we have as teachers... our ideas are confused. What does it mean for a high school student to do a bit of practice in a company during the school day? Is this what we have to do as teachers,

favouring this sort of experience in the “real world”? I don’t know, we are a bit confused, I think. (Prof. Matteo, general school, Milan).

As our interviews show, teachers’ confusions about the implications of the guidance paradigm inscribed within SORPRENDO reveal more profound tensions associated with the process of reshaping their professional identities. By looking at the use of SORPRENDO through the eyes of teachers, it is possible to outline how their values and professional deontology constitute a subtle source of resistance and inertia that slows down the penetration of the lifelong guidance discourse into the school context. Teachers do not promptly share the assumptions and objectives of a new educational discourse that emphasises the need for students to acquire the skills to be active and entrepreneurial in the labour market.

This sort of project is never enough for our students as they need to be taken care of in much more depth. There are students who have families that can support them in understanding the job offer or the higher education offer. But there are also many students who do not really know where to start from because they lack a family in the background supporting them. These are abandoned kids somehow, who never really thought of the possibility of moving to higher education, for example. (Prof. Anna, vocational school, Cagliari).

As this excerpt illustrates, there is – particularly among teachers at schools in relatively marginalised areas – a recognition that the social conditions structuring their students’ learning and careers cannot be addressed solely through projects promoting the acquisition of self-scrutiny or self-monitoring skills. In these contexts teachers’ adherence to the CMS approach appears more superficial and the usefulness of technological mediation favouring a pedagogical conversion of teachers’ values and everyday practices appears limited.

Conclusions

In this paper we have provided an analysis of the processes surrounding a specific digital tool and discussed the implications emerging from its introduction within Italian schools. Focusing on the case of SORPRENDO, a guidance software, we have argued that digital devices are not neutral and technical solutions. They are impregnated with symbolic and political dimensions, they carry meaning and constitute the material manifestation of policy orientations. We have shown that the presence of a digital technology within learning contexts imposes the necessity of immediate responses to its solicitations and mediates the dissemination of specific ideas and conceptions of educational processes through the mobilisation of school actors around its use and management. We have also pointed out that this soft-

ware meaningfully exemplifies a contemporary shift in educational reform towards a redefinition of schools and teaching. By analysing the emphasis on the need for students to acquire CMS, and the enactment of digital technologies (website, online training, etc.) to facilitate teachers' involvement, we have outlined the radicality of the lifelong guidance project which aims to fabricate students' entrepreneurial subjectivities whilst redefining and restructuring the overall aim of formal education.

However, we have also shown that while this digital tool mobilises teachers with new visions and ideas about guidance and teaching more broadly, it is incapable of generating their immediate adherence to this project. Teachers' professional culture, their everyday practices, and the inertia of schools' organisation and administration, all constitute a terrain where processes of negotiation and accommodation create tensions and contradictions. We have also emphasised that the material and social context in which the software is enacted shapes the objectives pursued and the meanings conveyed.

For instance, we have shown that when teachers define how to conceive meaningful career guidance, they place significant emphasis on the importance of developing a pedagogical relationship with their students. The use of career guidance software, on the other hand, if unaccompanied by more profound practices capable of generating that relationship, risk depersonalising the guidance activity and significantly limiting its capacity to infer students' real needs. Thus, on the one hand, teachers – particularly those occupying middle management positions – appear to be willing to be involved in the promotion and use of innovative technologically mediated guidance practices. On the other hand, while they cope with cultural and organisational constraints in the enactment process, teachers construct their own representations of the technology in use and limit their adherence to the policy discourse – and the hegemonic pedagogies – inscribed within it.

References

- Angus, L. (1994). Sociological Analysis and Education Management: The Social Context of the Self Managing School. *British Journal of Sociology of Education*, 15 (1) 79-91.
- Ball, S. J. (2006). Education Policy and Social Class. The selected works of Stephen J. Ball. London: Routledge.
- Ball, S. J. (1998). Big policies/small world: An introduction to international perspectives in education policy. *Comparative Education*, 34 (2), 119-130.
- Benadusi, L., & Consoli, F. (2004). La governance della scuola. Istituzioni e soggetti alla prova dell'autonomia. Bologna: Il Mulino.
- Bengtsson, A. (2011). European Policy of Career Guidance: The Interrelationship between Career Self-Management and Production of Human Capital in the Knowledge Economy. *Policy Futures in Education*, 9 (5), 616-627.

- Brennan, M. (1996). Multiple professionalisms for Australian teachers in an important age. New York: American Educational Research Association.
- Carvalho, L.M. (2014). The attraction of mutual-surveillance of performances: PISA as a knowledge-policy instrument. In T. Fenwick, J. Ozga & E. Mangez (Eds.), *World Yearbook of Education 2014: Governing Knowledge: Comparison, Knowledge-based Technologies and Expertise in the Regulation of Education* (pp. 58-72). Oxford: Routledge.
- CEDEFOP. (2011). Lifelong guidance across Europe: reviewing policy progress and future prospects. Luxembourg: CEDEFOP working paper.
- Colombo, M., & Landri, P. (2009). Schools and networked sociality. The making of new technologies for teaching-and-learning. *Italian Journal of Sociology of Education*, 1 (2009), 97-103.
- Coolahan, J. (2002). "Teacher Education and the Teaching Career in an Era of Lifelong Learning", OECD Education Working Papers, No. 2, OECD Publishing, doi:10.1787/226408628504
- Council of the European Union (2008). Council Resolution on better integrating lifelong guidance into lifelong learning strategies, 2905th EDUCATION, YOUTH AND CULTURE Council meeting Brussels, 21 November 2008.
- Council of the European Union (2004). Draft Resolution of the Council and of the representatives of the Member States meeting within the Council on Strengthening Policies, Systems and Practices in the field of Guidance throughout life in Europe, Brussels, 18 May 2004.
- Crozier M., & Friedberg E. (1977). *L'acteur et le système. Les contraintes de l'action collective*. Editions du Seuil: Paris
- Davies, C. A. (2008). *Reflexive ethnography: a guide to researching selves and others*. London-New York: Routledge.
- Day C., & Smethem L. (2009). The effects of reform: Have teachers really lost their sense of professionalism? *Journal of Educational Change* 10 (2-3), 141–157.
- Decuyper, M. (2016). Diagrams of Europeanization: European education governance in the digital age. *Journal of Education Policy*, 31(6), 851–872.
- Decuyper, M., Ceulemans, C., & Simons, M. (2014). Schools in the making: mapping digital spaces of evidence. *Journal of Education Policy*, 29 (5), 617–639.
- De Feo, A., & Pitzalis, M., (2017). Service or market logic? The restructuring of the tertiary education system in Italy. *Rassegna Italiana di Sociologia*, 2, 219-250.
- ELGPN (2015). Guidelines for Policies and Systems Development for Lifelong Guidance A Reference Framework for the EU and for the Commission. Kariteam, Jyväskylä, Finland.
- European Commission Study Group on Education and Training (1997). *Accomplishing Europe Through Education and Training*, Brussels.
- Evetts J. (2010). Organizational Professionalism: changes, challenges and Opportunities, DPU Conference Organizational Learning and Beyond October 20th 2010, Copenhagen.
- Fenwick, T., & Edwards, R. (2016). Exploring the impact of digital technologies on professional responsibilities and education. *European Educational Research Journal*, 15 (1), 117-131.
- Fuller, M. (2008). *Software studies: A lexicon*. Cambridge: MIT Press.
- Hargreaves, A. (2003). *Teaching in the knowledge society: Education in the age of insecurity*, Maidenhead: Open University Press.
- Hogan, A., Sellar, S., & Lingard, B. (2015). Commercialising comparison: Pearson puts the TLC in soft capitalism. *Journal of Education Policy*, 31 (3), 243–258.

- Hooley, T., Marriott, J., & Sampson, J. P. (2011). Fostering college and career readiness: how career development activities in schools impact on graduation rates and students' life success. Derby: International Centre for Guidance Studies, University of Derby.
- Hooley, T., Sultana, R., & Thomsen, R. (2017). Career Guidance for Social Justice: Contesting Neoliberalism. London-New York: Routledge.
- Ingvarson, L., & Chadbourne, R. (1997). Self-Managing Schools and Professional Community: The Professional Recognition Program in Victoria's Schools of the Future, paper presented at the AARE Annual Conference, Brisbane.
- Kelly, P. (2006). The entrepreneurial self and 'youth at-risk': Exploring the horizons of identity in the twenty-first century. *Journal of youth studies*, 9 (1), 17-32.
- Kelly P. (2001). Youth at risk: Processes of individualisation and responsibilisation in the risk society. *Discourse: Studies in the Cultural Politics of Education*, 22 (1), 23-33
- Kitchin, R., & Dodge, M. (2011). Code/Space: Software and Everyday Life. Cambridge, MA: MIT Press.
- Lai-Yeung, S. (2014). The need for guidance and counselling training for teachers. *Procedia-Social and Behavioral Sciences* 113, 36-43.
- Lascoumes, P., & Le Galès, P. (2007). Introduction: Understanding Public Policy through Its Instruments—From the Nature of Instruments to the Sociology of Public Policy Instrumentation. *Governance: An International Journal of Policy, Administration, and Institutions*, 20 (1), 1-21.
- Mik-Meyer N. (2018), Organizational Professionalism: Social Workers Negotiating Tools of NPM. *Professions & Professionalism*, Vol. 8, n.2, 1-15.
- Miur (2012). Piano Nazionale Orientamento: monitoraggio delle azioni e degli interventi realizzati e/o programmati. Circolare ministeriale Prot. n. 0001954.
- Miur (2014). Linee guida nazionali per l'orientamento permanente.
- Newman, J., & Clarke, J. (1994). Going about our business? The managerialism of public services. In J. Clarke, A. Cochrane, & E. McLaughlin (Eds), *Managing School Policy*. London: Sage.
- Nóvoa, A., & Yariv-Marshall, T. (2003). Comparative research in education: A mode of governance or a historical journey? *Comparative Education*, 39, 423-438.
- Ozga, J. (2009). Governing education through data in England: from regulation to self-evaluation. *Journal of Education Policy*, 24 (2), 149-162.
- Ozga, J. (2016). Trust in numbers? Digital education governance and the inspection process. *European Educational Research Journal*, 15 (1), 69-81.
- Piattoeva, N. (2015) Elastic Numbers: national examinations data as a technology of government. *Journal of Education Policy*, 30 (3), 316-334.
- Pitzalis, M. (2016). The Technological Turn: Policies of Innovation, Politics and Mobilisation. *Italian Journal of Sociology of Education*, 8 (June), 11-27.
- Pitzalis, M. (2012). Effetti di campo. Spazio scolastico e riproduzione delle disuguaglianze. *Scuola Democratica*, 6, 26-46.
- Pitzalis, M., Porcu, M., De Feo, A., & Giambona, F. (2016). Innovare a scuola. Insegnanti, studenti e tecnologie digitali. Bologna: Il Mulino.
- Pitzalis, M., & De Feo, A. (2016). La logica delle cose. Per una socioanalisi dell'innovazione tecnologica in classe. *Scuola democratica*, (1), 47-68.

- Ramberg, M. R. (2014). Teacher change in an era of neo-liberal policies: A neo-institutional analysis of teachers' perceptions of their professional change. *European Educational Research Journal*, 13 (3), 360-379.
- Reay, D. (2017). Addressing Educational Inequalities: Cautionary Lessons from a Post-Brexit, Austerity Britain, paper presented at the seminar What education for a post-globalized world? Can social justice, democracy and cooperation return to be the keywords of a new social and educational paradigm?, Cagliari, 1° Giugno 2017.
- Romito, M. (2017). Governing through guidance: an analysis of educational guidance practices in an Italian lower secondary school. *Discourse: Studies in the Cultural Politics of Education*, DOI: 10.1080/01596306.2017.1314251
- Romito, M. (2016). Una scuola di classe. Orientamento e disuguaglianza nelle transizioni scolastiche. Milano: Guerini e Associati.
- Romito, M. (2018). Choosing the right track. Educational decisions and inequalities within the Italian educational system. In A. Tarabini, & N. Ingram (Eds.), *Educational Choices, Aspirations and Transitions in Europe: Systemic, Institutional and Subjective Challenges*. New-York-London: Routledge
- Romito, M., Gonçalves, C., & De Feo, A. (2019). Digital devices in the governing of the European Education Space: The case of SORPRENDO software for career guidance. *European Educational Research Journal*. <https://doi.org/10.1177/1474904118822944>
- Schmid, E.C., & Whyte, S. (2012), Interactive whiteboards in state school settings: Teacher responses to socio-constructivist hegemonies. *Language Learning & Technology*, 16 (2), 65-86.
- Selwyn, N. (2016). 'There's so much data': Exploring the realities of data-based school governance. *European Educational Research Journal*, 15 (1), 54-68.
- Selwyn, N. (2015). Minding Our Language. Why Education and Technology Is Full of Bullshit... and What Might Be Done about It. Paper presented at Digital Innovation, Creativity & Knowledge in Education Conference, Qatar.
- Selwyn, N., & Facer, K. (2013). Introduction: The Need for a Politics of Education and Technology. In N. Selwyn, & K. Facer, (Eds.) *Politics of Education and Technology: conflicts, controversies, and connections* (pp. 1-21). Palgrave-Macmillan.
- Selwyn, N., & Facer, K. (2014). The sociology of education and digital technology: past, present and future. *Oxford Review of Education*, 40 (4), 482-496.
- Simons, M. (2014). Governing Through Feedback. From national orientation towards global positioning. In T. Fenwick, J. Ozga, & E. Mangez (Eds), *World Yearbook of Education 2014: Governing Knowledge: Comparison, Knowledge-based Technologies and Expertise in the Regulation of Education* (pp.58-72). Oxford: Routledge.
- Sultana, R. G. (2012). Learning career management skills in Europe: a critical review. *Journal of Education and Work*, 25 (2), 225-248.
- Vaira, M. (2007). Dalla scuola all'università. Politiche e pratiche di orientamento in sei paesi europei. Milano: LED Edizioni Universitarie.
- Wajcman, J. (2015). *Pressed for Time. The Acceleration of Life in Digital Capitalism*. Chicago: The University of Chicago Press.
- Watts, A. G. (1996). Socio-political ideologies in guidance. In A. G. Watts, B. Law, & J. Killen (Eds.), *Rethinking careers education and guidance: theory, policy, and practices* (pp. 225-233). London-New York: Routledge.

- Watts, A. G., Sultana, R. G., & McCarthy, J. (2010). The involvement of the European union in career guidance policy: A brief history. *International Journal for Educational and Vocational Guidance*, 10 (2), 89–107.
- Williamson, B. (2016a) Digital education governance: data visualization, predictive analytics, and ‘real-time’ policy instruments. *Journal of Education Policy*, 31 (2), 123-141.
- Williamson, B. (2016b) Digital methodologies of education governance: Pearson plc and the remediation of methods. *European Educational Research Journal*, 15 (1), 34-53.
- Wittel, A. (2001). Toward a Network Sociality. *Theory, Culture & Society*, 18(6), 51–76.