Facing Complexity of Inclusive Classrooms through Reflection on Simplex Principles

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Abstract

The intricate cultural, social, economic and developmental diversity as well as the policy shift from dual track systems to inclusive education systems characterising contemporary classrooms challenge teachers to explore more effective teaching methods to suit all learning needs. As a plethora of literature suggests, acquiring more knowledge and mastering skills is not enough for competency acquisition to successfully implement and sustain change in the long-term. One’s sense of efficacy impacts aspirations, attitudes and behaviours regarding the ability to bring about change. Thus, to encourage the adoption of effective, sustainable methodological approaches teachers need to embark on an exploratory journey of what Bourdieu (1984) coined as habitus; the expression for deeply embodied ways of doing and thinking that is strongly affected by the dynamic interplay of personal, behavioural and environmental factors (Bandura, 1986). Since the early 1900s, reflective practice has been identified and advocated as meaningful and expected instructional practice for professional development and lifelong learning. However, critical approaches to reflection may often create discomforts when what has become ‘second-nature’ is questioned. As Sibilio (2014) postulated, the simplifying principles and properties identified in the theory of simplexity (Berthoz, 2012) may offer a constructive and creative starting point to reflect on one’s practices and ultimately face this complexity with a new mindset.

Keywords: Competence Development, Inclusive Education, Reflective Practice, Self-efficacy, Teacher Education

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Introduction

In Italy as elsewhere, inclusive education has become the paradigm endorsed by policy makers for the present and the future of education. As a result, identifying the underlying factors which ensure its success has become an educational, social and political priority. Inclusive education, as it is understood today, is a social rights-based model whose focus is not disability but the provision of a framework within which all children – whatever their ability, gender, language, ethnic or cultural origin – can be valued equally. Meanwhile, the ever-increasing demands of technological, social, cultural and economic change on education systems, have brought about the need to find strategies to handle this unpredictable scenario. As Putman argued, it has “reached a point where even veteran teachers may begin to question their ability to engage students or implement the instructional strategies necessary to meet the needs of all students within their classrooms” (2012, p. 26).

On recognising that current inclusive educational systems are complex and adaptive in nature and are characterised by a constant interplay of contextually-grounded elements (Siblio, 2014), drawing a list of universal factors for success may be considered an unachievable goal. International studies reviewed by Avramidis & Norwich (2002), however, have demonstrated that teachers’ willingness to make specific adaptations to their modus operandi is one of the key facilitators for success as the implementation of any innovation at the classroom level remains at their discretion (Soodak, Podell & Lehman, 1998). A teacher’s efficacy belief, defined as a teacher’s “judgement of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated” (Tschannen-Moran & Woolfolk Hoy, 2001, p. 783) has been acknowledged as a potentially significant factor in teacher development due to its potential to improve teaching practices and positively influence student learning (Ashton & Webb, 1986). The teachers’ sense of self-efficacy was also the single best predictor of teachers’ attitudes towards inclusion (Soodak, Podell & Lehmann, 1998; Sharma, Loreman & Forlin, 2011).

With this evidence in hand, higher education institutions offering pre- and in-service teacher education are called to give this construct its due prominence to better equip teachers with the right predisposition to make conscious pedagogical and didactic choices for the promotion of inclusive education. Teachers need to question their deeply embodied ways of doing and thinking, coined by Bourdieu (1984) as habitus, since these unconscious implicit beliefs and values have been acknowledged to be more powerful than formal explicit theories, these having a greater influence on the pedagogical and didactic choices put into action (Perla, 2010).

This article presents the theoretical framework underpinning a teacher training course being proposed to practicing teachers. The aim is to invite teachers to delve deeper into their habitus as professionals and individuals to bring to light one’s sentiments, attitudes and concerns about inclusive education as well as beliefs in self and teacher efficacy. The simplex properties
and principles identified in the theory of simplexity guide the different moments of reflection. This allows teachers to embark on a journey from an external viewpoint, thus offering a constructive and creative starting point, rather than a critical one, to reflect on one’s practices and ultimately face this complexity with a new mindset.

**Inclusive Education: Its Roots and Current Scenario**

Over the past three decades a number of conventions, declarations, statements and resolutions, which have been endorsed at an international level, now underpin national policies and provide a reference framework for the education systems of today (European Agency for Development in Special Needs Education [EADSNE], 2009).

One of the key milestones which set in motion the paradigm shift from integration to inclusive education was the *Salamanca Statement and Framework for Action on Special Needs Education* (UNESCO, 1994). The Italian Government, along with 91 others, signed up to the Statement which called upon all Governments to “adopt as a matter of law or policy the principle of inclusive education, enrolling all children in regular schools, unless there are compelling reasons for doing otherwise” (UNESCO, 1994, p. ix). The Statement, founded on a rights-based perspective, focused on children described as having special needs. However, it asserted from the outset its commitment to “reaffirming the right to education of every individual, [...] regardless of individual differences (UNESCO, 1994, p. vii).

The Statement placed emphasis on the importance of a wider reform of education needed to improve its quality and relevance and promote higher levels of learning achievement by all learners, thus placing educational reform firmly within a broader social agenda that included health, social welfare and vocational training and employment. This brought about a convergence of international policy and legislation on the value of an inclusive education system which is based on a social model and celebrates tolerance, diversity and equity. Yet, as outlined by Slee the “definition and meaning of inclusive education is still the subject of much heated debate and defining best practice is no simple task” (Slee, 2001). On a positive note, however, some key elements do emerge.

Firstly, an inclusive perspective is based on a social rights-based model. Prominent advocates of inclusive education argue that the increasingly rights-based arguments are “a central component in policy-making that has provided the impetus to place inclusion firmly on the agenda of social change” (Daniels and Garner, 1999, p. 3) on a global level (Pijl, Meijer & Hegarty, 1997). Secondly, inclusion is a process not a state. It “is a shared enterprise” (Booth, 2011, p. 6) “at the heart of education and social policy” (Mittler, 2000, p. 2). As Darlington (2003, p. 2) outlines in his definition, inclusion is “not a simple concept restricted to issues of placement”. It has significant implications, as changes are requested on various levels ranging from policy to practice.
Inclusive education implies a radical shift in attitudes and a willingness on the part of schools to transform practices in the curriculum on offer, the assessment, recording and reporting of pupils’ achievements, the decisions that are taken on the grouping of pupils within schools or classrooms, pedagogy and classroom practice, sport and leisure and recreational opportunities (Mittler, 2000). Thirdly, inclusion “means enabling all students to participate fully in the life and work of mainstream settings, whatever their needs” (CSIE, 2004, p. 1). The key values and principles in inclusion highlight the fundamental shift in perspective from a medical to a social model. Some of these include valuing diversity, entitlement, dignity, individual needs, planning, collective responsibility, professional development, and equal opportunities (Darlington, 2003; Booth, 2011). Hence, inclusive education has come to mean the provision of a framework within which all children – whatever their ability, gender, language, ethnic or cultural origin – can be valued equally, treated with respect and provided with real learning opportunities to guarantee full membership at school and, later, in society. Thus it embraces the educational, social and political spheres (D’Alessio, 2011) and teachers need to be aware of their role and responsibility on all levels.

Italy was one of the first European countries to provide a legislative framework for the abolishment of special schools and the integration of students into mainstream schooling (Laws 118/1971, 517/77 respectively), to ensure access and support to all students and families to be integrated in mainstream schools (Law 104/1992), and to promote inclusion of all students irrespective of their needs (MIUR, Law 170/2010; MIUR, Ministerial Directive 27/12/2012) (D’Alonzo & Caldin, 2012). Teacher education programmes have been oriented towards the promotion of inclusive education and a number of Ministerial initiatives have been initiated to provide teachers with training courses on issues revolving around inclusive education (Aiello, Corona & Sibilio, 2014).

As argued by Sibilio, Aiello and Corona (2013), although indispensable, legislating physical access and the provision of educational opportunity does not automatically lead to acceptance of the system, as neither does equipping teachers with resources, knowledge and skills necessary to face the challenges arising in an inclusive classroom. Indeed, studies on teacher’s attitudes and concerns towards inclusive education have found that successful implementation of any inclusive policy is largely dependent on teacher’s positive attitudes about it (Avramidis & Norwich, 2002).

A reformed inclusive system must ensure that besides guaranteeing the right infrastructure for effective learning, it also restructures teacher education to give teachers the sense of efficacy necessary to bring about change. As evidenced, teacher education needs to focus on challenging teachers’ knowledge, beliefs and values and developing teacher capacity “to work effectively with a wide range of students and colleagues, to contribute to the school and the profession, and to continue developing” (EADSNE, 2010, p.37).
Self and Teacher Efficacy for the Success of Sustainable Inclusive Practices

According to Social Cognitive Theory (SCT), what lies beneath one’s motivation to change behaviour heavily depends on a triadic dynamic interplay between personal, behavioural and environmental factors which, in turn, have a significant effect on an individual’s overall perception of his or her abilities (Bandura, 1986). Bandura refers to these perceptions as self-efficacy, defined as “what you believe you can do with what you have under a variety of circumstances” (p. 37). This construct represents an essential component within human agency (Bandura, 1986), defined as the intentional completion of actions, as it influences the choice of tasks, the effort one puts into the application of such tasks and the persistence over time (Putman, 2012); all fundamental elements when working within complex scenarios as are inclusive classrooms and systems.

Teacher efficacy, which refers to how a teacher judges his or her capabilities to bring about desired outcomes in student performance (Tschannen-Moran & Woolfolk Hoy, 2001), was found to influence both the environment teachers create for their students as well as their choice in the teaching strategies they choose to implement to enhance student learning (Bandura, 1997). Applying this theory to an inclusive education scenario, the higher the teacher efficacy in implementing inclusive practices, the higher is the belief that a student with special educational needs can be effectively taught in the regular classroom (Sharma, Loreman & Forlin, 2011). In fact, as thoroughly evidenced in Tschannen-Moran, Woolfolk Hoy and Hoy’s literature review (1998), this construct was found to be a strong predictor of various variables linked to effective inclusive education such as:

- willingness and openness to innovation;
- persistence when faced with low-performing students;
- lower inclination to refer a difficult student to special education; and
- a higher likelihood to implement effective methods of instruction.

The sense of efficacy, therefore, affects teachers’ behaviour and actions, as well as the consequences of actions.

On the basis of the triadic reciprocal causation model, Bourdieu’s concept of habitus adds another piece to the complex puzzle of teachers’ motivation to act and the way they choose to act. Habitus is a system of durable, transposable dispositions, embodied in history and internalised as second nature (Bourdieu, 1990). The active presence of these past experiences inform perceptions, thought and action and are aligned with one’s identity, even if unconsciously. In other words, what influences practice is an embodied cognition that is the product of social forces and which lies outside conscious awareness. It predisposes the individual to act, think and behave in particular ways. These are observable in the practices of individuals but not reportable by them in the form of conscious attitudes or beliefs. Habitus can be affected over time and
across circumstances (Harker, 1984). It is both the product of individual and collective past experiences and the producer of new habitus. In fact, habitus and context are thus mutually constituted since the habitus with which one enters a particular context can reshape practices within that context and vice versa (Bourdieu, 1990).

Applied to teaching-learning processes, there is thus a constant interrelationship between the habitus of administrative staff, teachers, students, parents and all other stakeholders within the educational system impacting the ethos of a school. As an example, preservice teachers’ beliefs, opinions and perceptions on teaching and learning have been influenced by their own schooling experience as students, while the habitus of inservice teachers has been shaped further by the years of success and failures of mastery experiences, observations of vicarious experiences, as well as social persuasion and physiological factors within their social structure (Bandura, 1986). Linking the construct of habitus to research on the malleability of efficacy, evidence sustains that efficacy is more easily moulded in the preservice years, while it tends to be resistant to change among experienced teachers (Tschannen-Moran et al., 1998). Teacher educators are therefore faced with a challenging pursuit, as questioning one’s habitus and successively bringing about change without relapsing back to one’s primary dispositions requires willingness that can only come from within the individual undergoing a training course. Finally, as Bandura (1997) affirmed, positive changes in self-efficacy only come through “compelling feedback that forcefully disrupts the preexisting disbelief in one’s capabilities” (p. 82).

One plausible route to embark on this journey can be found in reflective practice. As Zoletto (2012) suggests, in taking into consideration the increasing request to manage complex educational contexts, teachers need to be trained to acquire a mental habitus able to acknowledge and sustain this complexity. This could be achieved through a reflective process aimed at exposing one’s thoughts and perceptions and making explicit the latent beliefs that orient the choice of methods and strategies in the teaching-learning processes (Perla, 2010). This would help in developing an understanding of why professionals conduct their work in that way and hence be able to make more sense of their practice.

**Reflective Practice on Simplex Properties and Principles in Initial and In-Service Teacher Education**

The relevance and effectiveness of reflective practice in teacher education and continuous professional development to deal with the dynamic and complex classrooms of today has been widely accounted for in international literature (EADSNE, 2012; Ghaye, 2011; Larrivee, 2000; OECD, 2009; Rivoltella & Rossi, 2012). Considered as a further dimension of thought, reflective practice constitutes the “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that
support it, and the further conclusions to which it tends” (Dewey, 1910, p. 6). This opposes action that is routine which constitutes “habits of thought that are unsystematic, lack evidence, rely on mistaken beliefs or assumptions, or mindlessly conform to tradition and authority” (Larrivee & Cooper, 2006). Schön’s contribution (1983) challenged the belief that the teacher is a mere technician and brought reflection into the centre of an understanding of what professionals do, by introducing an alternative epistemology of practice “in which the knowledge inherent in practice is to be understood as artful doing” (Usher, 1997, p. 143). This portrayed the teacher as an autonomous and committed decision maker who is able to make more sense of his or her own actions by trying to see the same event from different viewpoints. As Loughran asserts:

“it is through [this] development of knowledge and understanding of the practice setting and the ability to recognize and respond to such knowledge that the reflective practitioner becomes truly responsive to the needs, issues, and concerns that are so important in shaping practice” (Loughran, 2002, p.42).

Ghaye T. and Ghaye K. (1998) proposed a cyclical flexible model to reframe professional action. Through this process, reflection can start from any of the four reflection-action-foci and can proceed in any sequential manner. The teachers’ values, their practice, the willingness to search for strategies that bring about improvement and the school context in the wider community are the four starting points. Tony Ghaye’s strengths-based reflective framework (2011), which builds on the previous model, provides a reflective approach which embraces and promotes the underpinning principles of inclusive education. Advocating for a participatory and appreciative action and reflection process (PAAR), it entices teachers to reflect on their own strengths and those of their pupils, their schools and the communities in order to transform the educational settings in which they work into inclusive environments. Within this perspective, critical reflection becomes a deliberate, conscious, public and evidence-based research process based on participatory action and designed to improve the quality of teaching and learning through a cyclical process that involves action, reflection and knowledge construction on strengths rather than deficits.

Engaging professionals in reflective practice is not an easy feat. As Larivee outlined, “the process of becoming a reflective practitioner cannot be prescribed: it is a personal awareness discovery process” (Larrivee, 2000, p. 296). It requires combining one’s personal beliefs and values with a professional identity, “resulting in developing a deliberate philosophical and ethical code of conduct” (Larrivee, 2000, p. 294) and is triggered by the recognition of a problem or dilemma (Dewey, 1910). Hence, awareness among teachers needs to be created regarding the educational, social and political responsibility they hold and how their unconscious as well as informed decisions impinge on the teaching-learning process and the climate in their classrooms.

The theory of simplexity (Berthoz, 2012) could provide an opportunity to move away from an introspective self-indulgent navel-gazing approach
(Ghaye, 2011) and guide teachers in taking a critical stance towards the educational system and teacher agency. Furthermore, as Freire (1970, 1993) and Mezirow (2006) postulated, the social and political contexts need to be questioned and it is only through continuous critical inquiry with other people about their relations to the world that knowledge emerges as it provides opportunities to question oneself on aspects one would rather not see or know so as to reach higher levels of thinking and action.

Alain Berthoz, a physiologist and neuroscientist, postulated that the same organisational matrix can be observed in all complex adaptive systems from “a hive, an ant colony, a termite mound [to] an army, factory or society itself” (Berthoz, 2012, p.76). Sibilio (2014), on recognising that the educational system, at macro meso and micro levels, is characterised by complexity and adaptivity, applied the theory of simplexity to provide an explanation of the intricate interplay of relationships. He then explained how through the awareness and reflection on simplex principles and properties outlined by Berthoz, teacher and student agency can be simplified and understood more effectively and in turn may help to manage the complexity embedded in inclusive systems.

The concept of simplexity is an ensemble of biological devices that appeared in the course of evolution to allow a complex adaptive system, as is the human being, to thrive by processing “complex situations very rapidly, elegantly and efficiently, taking past experience into account and anticipating the future” (Berthoz, 2012, p.3). At the basis of the concept, Berthoz identified intersubjectivity as a fundamental principle as it allows these systems to understand the intentions of others. Furthermore, he asserted that these same ‘simplifying principles’ and properties may be applicable to all levels of human activity. He identified a preliminary list of six basic characteristics of life that constitute the tools for the creation of different patterns of interaction among the constitutive parts of a system. These are: specialisation and modularity, speed, reliability, flexibility, vicariance and adaptation to change, memory, generalisation (Bethoz, 2012).

Berthoz enlists six simplifying laws and principles, implemented successively or in parallel, as a guiding framework to delimit the concept of simplexity. The six principles applied to inclusive education are:

- **Inhibition and the principle of refusal**: means recognising that when faced with a choice, the one taken is disinhibited, while the other is refused. Being able to consciously inhibit obvious choices, for example the actions which a teacher is used to doing, makes way for innovative ones.
- **The principle of specialisation and selection (Umwelt)**: In inclusive classrooms, teachers need to be aware of their subjective universe (umwelt) and that of their students in order to be able to fully understand their needs. At the same time having the conscious ability of filtering information and selecting what is essential to deal with the daily complex scenario is also essential.
The principle of probabilistic anticipation: Being able to anticipate situations, such as classroom behaviour, allows teachers to manage situations more effectively. It is also key when introducing innovative strategies by hypothesising on the probability of its success on the basis of the information available in the present, as well as taking the memory of past experiences into account.

The detour principle: Detouring involves replacing a simple variable with a more complex mix of variables to simplify it. Teaching is a non-linear process and teachers need to be aware that taking shortcuts may not always be the best solution in the classroom in terms of time and energy, especially with students having diverse and specific needs.

The principle of cooperation and redundancy: Cooperation is the process of combining the information available to ensure that the information is coherent and reliable. Meanwhile, redundancy refers to the duplication of components or functions of a system with the intention to increase reliability of the system to make it fail-safe. An example of the use of cooperation and redundancy in the classroom is the ability to look at things egocentrically and allocentrically before making decisions.

The principle of meaning: Finding meaning in action is affirming the principle of meaning whose foundations are in the act itself. This is because “simplex solutions are motivated by intentions, goals, or functions” (Berthoz, 2012, p. 21).

Conclusions

On the basis of these reflections, what is being proposed is an action research aimed at discovering whether teacher efficacy and, as a result, teacher agency can be modified after having followed a training course based on a participatory reflective approach. Still in its initial phases, the research envisages the use of a professional development journal, designed specifically to reflect the simplex properties and principles delineated by Berthoz (2012). Teachers will be encouraged to reflect in action and on action, individually and in groups, on their application in their day-to-day activity in the classroom with the aim of creating greater awareness of the inner beliefs and values of teachers on inclusion, the feasibility of inclusive practices in schools and how these in turn affect their choices. The teachers’ efficacy will be measured at the beginning and the end of the training course using the Teacher Efficacy for Inclusive Practices (TEIP) scale, a validated tool designed by Sharma, Loreman & Forlin (2011), triangulated with data collected through qualitative research methods. Other evaluation tools are being created specifically to gather feedback on the course contents, materials made available and levels of satisfaction in order to provide suggestions for improvement.
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