

TEACHER EDUCATION IN A POST NATION STATE ERA:
A POSSIBLE ECOLOGICAL APPROACH:
A DISCUSSION AND REFLECTION

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Abstract: *The aim of the paper is to discuss recent trends related to tendencies in education policy and education worldwide. Neoliberal education policy as a coherent cross-national education policy set by the Organisation for Economic Co-operation and Development (OECD) standards, Program for International Student Assessment (PISA) tests, and other transnational educational comparisons influencing traditional national education policy, has been evident for many years., This tendency has been prevalent in Denmark and the United States for years as well. A range of prominent educational philosophers and educators have challenged these trends, pointing to the fact that the unintended implications have been a narrowing of curriculum to focus on teaching to the test activities and resulting in a decline in critical thinking among students. Many educators and educational philosophers have joined the critique towards recent transnational education policy. In reference to ongoing and intense discussions, the aim of this paper is to discuss and rethink new approaches. Based on revisiting educational ideas of educational thinkers such as Dewey, Klafki, and Biesta, the authors and others, attempt to develop a notion of a more balanced education system, named “the ecological approach”. An ecological approach in education and teacher education focuses on uniqueness, integrity, resilience, and personal development of students in combination with a skill-focused training of the student as a whole person.*

Keywords: neoliberalism, neoconservative, education, ecological approach, curriculum, educational theory

Introduction

Recent decades of education policy worldwide have witnessed a transformation in the understanding of education from welfare state concepts towards competition state concepts, in which neoliberal education policy is a cornerstone (Ball, 2006, 2015; Cerny, 2007). Neoliberal education policy as a cross-national education policy, partly set by the Organisation for Economic Co-operation and Development (OECD), the Programme for International Student’s Assessment (PISA) testing programme, Trends in International Mathematics and Science Study (TIMSS), the Progress in

International Reading Literacy Study (PIRLS), and other transnational educational comparison programs, has influenced nations’ education policy worldwide and has furthermore, been evident for many years (OECD, 2018; PISA, 2018; TIMSS & PIRLS, 2018). A range of prominent educational philosophers and educators have challenged these trends and joined the critique towards recent transnational education policy (Apple, 2006; Ball, 2006, 2015, 2015a; Berliner, 2009; Berliner & Glass, 2014; Biesta, 2007, 2010; Connell, 2013; Kapoor, 2011; McGregor, 2009; Nordenbo, 2008). In reference to the ongoing and intense debate worldwide—a debate that

has been prevalent in Denmark as well as the United States (Foucault, 1977, Nordenbo, 2008; Rahbek Schou, 2006, 2010)—the aim of this article is to set out to discuss and rethink experienced and new approaches to education policy and teacher education based on an introduction to neoliberal education policy, and some of the critique raised. We will introduce some of the educational thinkers and philosophers who have challenged the trends and set out to develop a more balanced education system. These theories and reflections lead to an introduction of an ‘ecological approach’ in teacher education and education policy.

Neoliberal Education Policy

Originally, the concept of neoliberalism has been associated to mostly economic policy focusing on privatization, free trade, and marketization in order to increase the role of the private sector in economy and society (Ball, 2006). In the 1980s and 1990s in England, neoliberalism was introduced in British education policy while Margaret Thatcher was head of the government (Ball, 2006). In the United States, the elementary and secondary education act, the so-called No Child Left Behind Act (NCLB) from 2001 (Klein, 2018)—introduced a neoliberal in American terms—described as a neoconservative education policy (Berliner & Glass, 2017; Klein, 2018; Nichols & Berliner, 2007). The NCLB Act and education reforms in the wake of a neoliberal education policy introduced standards-based education reforms, testing, and measurement that allowed the government to determine the priority of subjects to be taught, the way they might be taught, and reforms available to schools that do not perform without addressing funding inequalities that perpetuate the achievement gaps (Hursch, 2007; Torres, 2008). It also created a space for vouchers and charter schools, which was

a logical conclusion for education to become for-profit institutions (Trammel, 2005). Worldwide the neoliberal education policy eventually has been introduced to most countries in recent decades (Connell, 2013; Kapoor, 2011; McGregor, 2009). Denmark and the Scandinavian countries, being no exceptions, witnessed the consequences of neoliberal education policy in recent decades (Nordenbo, 2008; Rahbek Schou, 2006, 2010). Internationally, the globalized comparisons among students’ performance in different countries is essential, and the PISA (2018), TIMMS & PIRLS (2018) tests expose competition at a global level regarding students’ standards and performance in various subjects. Ball (2006) stated that the changes in the understanding of the purpose of education in the neoliberal education policy discourse have been significant throughout the world.

Critical Discussions and Negative Implications of Neoliberal Education Policy

Following the rise of neoliberal/neoconservative education policy, educators and educational researchers worldwide have started to criticize, register, and eventually point out unintended and negative implications. The critique has focused on various aspects ranging from general to specific. Many researchers have criticized the fact that education globally is transformed and being understood in concepts and terminology of economy, marketization, and competitiveness (Apple 2011; Ball, 2006; Biesta, 2007; McGregor, 2009).

First critique point: Education as a market. One of the main critique points with respect to neoliberal and neoconservative education policy is that education—in contrast to former welfare-based concepts—is being conceived of as a market. The

Australian researcher McGregor (2009) emphasized that, “global capitalism has placed education at the forefront of national competitiveness, and governments have responded with education policies primarily designed to serve the needs of the market. Such neo-liberal economic imperatives have been supported by a variety of neoconservative social forces calling for schools to become sites of cultural and moral restoration” (p. 345). The American researcher Apple (2011) commented on the “processes of ‘conservative modernization’ of education and the ‘complicated alliance behind the wave after wave of educational reforms that have centered around neo-liberal commitments to the market and a supposedly weak state” (p. 21). The British educational researcher Ball (2006) described the neoliberal development and outlined that,

the market solution (...) is a new master narrative, a deeply fissured but primary discourse (...) The discourse constructs the topic and as with any discourse, it appears across a range of texts, forms of conduct and at a number of different sites at any one time. (p. 74)

According to Ball, national economic issues are tied to consumer choice in education. He emphasized five main elements in the transformation of education policy in terms of neoliberal/neoconservative thought patterns:

- improving national economics by tightening a connection between schooling, employment, productivity and trade;
- enhancing student outcomes in employment related skills and competencies;
- attaining more direct control over curriculum content and assessment;
- reducing the costs of government to education;
- increasing (...) pressure of market choice. (Ball, 2006, p. 70)

Common for the critique is that the understanding of education has changed tremendously in the transition from welfare state to the post nation era and competition state. In the welfare-state-based understanding of the purpose of education—aiming at protecting the citizen—not only the European concept of ‘Bildung’ (education as being both human development shaping a sense of humanity as well as developing intellectual skills) but also the Dewey tradition of education as democracy are cornerstones (Dewey, Hahn, Boydston & Axetell, 1975). Welfare state conceptions of education perceived of education as a “non-positional good” (Nordenbo, 2008, p. 103), primarily focusing on learners’, students’, and adult participants’ personal and individual development.

Apple (2001) predicted that when education becomes a marketable commodity values for business seem to apply so that consumers want the same values, procedures, and performance indicators that work in the business world along with standardizing what is legitimate knowledge. This commodification of education then allows, Apple (2006) continued, “dominant economic groups [to] shift the blame for the massive and unequal effects of the own misguided decisions from themselves onto the state (p. 76). Furthermore, dominant or powerful figures incorporate the agency of others into their own actions and by doing so, give “power to a new elite of specialist managers in public-service institutions” (Chouliaraki & Fairclough, 1999) such as we now see in our schools.

Second critique point: Accountability and measurement as core elements in neoliberal education policy. Other researchers criticize the fact that accountability and measurement have been introduced as essential tools of control at all

levels in schooling. The Dutch-British educational researcher, Biesta (2010) criticized how measurement and accountability have replaced critical thinking, democracy, and judgement in teaching and schooling. Apple (2011) pointed to the fact that “new managerial proposals” have installed “rigorous and reductive forms of accountability in schooling at all levels” (p. 21). Ball (2015) outlined that neoliberal education policy has led to education, teaching, and teachers to being “governed by numbers” (p. 299). According to Ball, “numbers define our worth, measure our effectiveness and, in a myriad of other ways, work to inform or construct what we are today. We are subject to numbers and numbered subjects” (p. 299). The measurement, monitoring, and numbers have taken over our personal and work lives resulting in focusing on students’ test scores and other performances. In 2015, Ball wrote, Measurement and monitoring as techniques for reflection and representation play a particular role within the contemporary relationship between truth and power and the self that we call neoliberalism. As neoliberal subjects, we are constantly incited to invest in ourselves, work on ourselves and improve ourselves – drive up our numbers, our performance, our outputs – both in our personal lives and our work lives. (p. 299)

In contrast to the welfare state focus on individual meaningful development, according to the second critique point, measurement and accountability are negative implications of a neoliberal education policy that have partly dehumanized the understanding of teaching and learning and has turned mainstream teaching, teachers, and students into numbers.

Apple (2007) suggested that with new forms of accountability, policies are created that

enhance the status in moral crusades to legitimize particular types of expertise. When competition increases for these credentials, it allows some students to have less competition from other children and re-stratify a population so that cultural capital remains in the hands of those who already possess it. The English experience seems to be the same when neoliberal reforms due to marketization failed to create curriculum that was responsive and diversified but rather “radically altered the relationship of inequality that characterized schooling” (p. 70).

Third critique point: Controlling and narrowing the curriculum and focus on testing. Another critique focuses on a further negative implication points to a tendency to controlling and narrowing the curriculum. Apple (2011) criticized “neo-conservative emphases on stronger control over curricula and values” (p. 21). The democratic deficit in neoconservative educational policy and thinking desiring “to have total control over the educational process” is a critique outlined by Biesta (Winter, 2011, p. 539).

Further critique is raised regarding the intense focus on testing, and in particular, high-stakes testing. Ball (2015) mentioned the fact that measurement, statistics, and numbers introduced in education in some countries with the US being the most evident example have been closely connected to teacher salary based on students’ performance and testing scores. According to Ball (2015),

(in) teaching, the articulation of performance and improvement in terms of student test scores is more and more widely linked to another set of numbers—money—in the form of reward—that is performance-related pay. (p. 299)

American education researchers have provided evidence of how the introduction of

high-stakes testing in combination with accountability-thinking since the 1990s, and especially after the adoption of the education act, No Child Left Behind Act, has influenced education, teacher approaches, and school politics significantly (Wright, Wright, & Heath, 2003). The researchers had the opportunity to study implications of high stakes testing for several years. Most researchers show that high-stakes testing has had many negative consequences, one of which is an extended tendency to change all teaching into teaching-to-the-test activities in favour of non-test-related subjects and topics. Furthermore, a range of other negative consequences—even cases of teachers' and schools' cheating—have been listed and documented (see e.g., Berliner & Glass, 2014; Nichols & Berliner, 2007; Rahbek Schou, 2006, 2010). The American researcher, Berliner (2009), has evidenced how testing in formal education leads to both inequality and inequity, to higher drop-out rates, and to a narrowing of curriculum content with teachers and educators focusing on merely teaching-to-the-test activities and excluding disadvantaged students (Berliner & Glass, 2014; Nichols & Berliner, 2007). In Denmark, similar critique was raised, and researchers have pointed to the fact that experienced teachers in a child-centered approach have changed their focus towards testing students (Nordenbo, 2008, 2009; Rahbek Schou, 2006, 2010).

Despite initial intentions of wanting to raise students' standards by introducing standardized curriculum and testing in the wake of the neoliberal education policy, the researchers pointed to the fact that in many cases the opposite was evidenced; teachers, schools, and students focus on teaching-to-the-test activities instead of the knowledge and creative development of pupils (Klein, 2018).

Fourth critique point: Changing teacher roles. Finally, many critical researchers and educators emphasize how teaching, teachers, and their roles in neoliberal education policy are retold in new narratives in which the reflective and independent thinking teacher is replaced by the technically competent teacher (Ball, 2006). The neoliberal discourse penetrates the field of education and is combined with demands of efficiency and introduction of control over curriculum and assessment. According to Ball (2006) and Berliner and Glass (2014), and others, this contributes to classify teachers in the discourse of market economy in which not only the individual, e.g. the teacher, the headmaster, the student, but also teaching, school, and even research is retold in an understanding of governance as a means of disciplining (Wright, 2005). Foucault (1977) knew early on that “calculated gazes” or the disciplining of the body “makes possible the operation of a relations power that sustains itself by its own mechanisms” (p. 177). In 2014, Berliner and Glass introduced a book on 50 myths about the neoconservative education policy in America highlighting a range of critical points. Ball (2015a) emphasised that, “what we found in our case study schools is both forms of policy ad-hockery, borrowing, building, re-ordering, displacing, constructing and re-constructing, and patterns of compliance and standardization” (p. 308). Ball (2015a) continued that

the enactment of policy is not always linear and rational; policy work is often a piecemeal process of “fixing” problems. However, there is a ‘feedback’ process or a process of complex iterations between policies and across policy ensembles that generate forms of institutional transformation and regeneration. (p. 308)

Despite the intentions of many individual teachers' interest in students' all-round

development as whole persons, neoliberal education policy has been evidenced to influence day-to-day teaching and teachers in subtle ways beyond their personal intentions and understanding of good education.

During the past decades, the critique has been addressed in various ways. In many countries, the education reforms eventually have been changed and adjusted. For example, in 2017, the American NCLB Act from 2001 was changed to Every Student Succeeds Act (Klein, 2018), while in European countries suggestions toward more holistic and alternative approaches were raised.

Goal of Education: Three Historical and Philosophical Perspectives

Alternative and holistic approaches are however not new in the history of education policy. Before turning to the European scene, it is worth mentioning the American educational philosopher and psychologist from the early 20th century, John Dewey.

John Dewey's Educational Philosophy: Historical Roots

It is well known that one overall theme in Dewey's work was his belief in democracy politics, education, and communication. In 1888, Dewey stated "democracy and the one, ultimate, ethical ideal of humanity are to my mind synonymous" (Dewey et al., 1975, p. 138). Linking education to democracy, equality, and humanity is at the core of Dewey's ideas about the aim of education. In 1897 furthermore, in his *Pedagogic Creed*, Dewey forwarded many of his beliefs and ideas that might remind today's teachers and teacher educators about general aims of education, schools, teaching and teachers' roles. Dewey emphasized the importance of seeing schools as supporting both the

individual psychology of a single child *and* the child's social life. In fact, Dewey put the importance of social life and social activities in the foreground of education (Dewey et al., 1975).

The aim of education according to one of Dewey's creeds is to support children's development in their own social activities. Dewey wrote, "To prepare [a child] for the future life means to give him command of himself; it means so to train him that he will have the full and ready use of all his capacities" (Dewey, 1897/1959, pp. 19–20). Dewey continued "I believe therefore, that the true center of correlation on the school subjects is not science, nor literature, nor history, nor geography, but the child's own social activities" (p. 25). Dewey's critique of his own era's understanding of the teaching profession resonate with today's educational researchers' criticism of the distinctive focus on accountability, narrowed curriculum focus, and high-stakes testing, mentioned earlier in this article. Dewey stated, "I believe, that under existing conditions far too much of the stimulus and control proceeds from the teacher, because of the neglect of the idea of the school as a form of social life" (p. 24). In continuation of this, Dewey stated his opinion about education as follows, "I believe finally, that education must be conceived as a continuing reconstruction of experience; that the process and the goal of education are one and the same thing" (Dewey, 1897/1959, p. 27).

Along with Dewey, Vygotsky (1934/1987) too, theorized that children can regulate their own behavior. Dewey's idea of education as a continuing reconstruction of experience that gives students command of themselves so that they full use of all their capacities in the future mirror an alternative to mainstream educational policy at his own time but also reminds us today that education can be

conceived of in very different ways than current world-wide neoliberal education policy. Dewey's theory of education—often called learning by doing—has been influential in Europe and Scandinavia, as well (Keiding & Wiberg, 2013; Klafki, 2001, 2013).

Wolfgang Klafki's Approach: Categorical Education as a Sum of Material and Formal Education

Klafki (2001) the German post-WW II critical educational philosopher, was inspired by Dewey in developing his educational philosophy on education. In a current perspective, the synthesizing education theory of Klafki with the somewhat unfamiliar term “categorical education” can be seen as an alternative synthesizing approach to neoliberal education concepts and the critique raised. The theories of Klafki (2001/1983) played an important role in a European, Scandinavian, and Danish pedagogical context in the 1970s and into the first decade of the 21st century (Rahbek Schou, 2013). Klafki (1983) introduced the notions of material and formal education to separate two very different education traditions in Europe. Educators advocating for a material approach in education primarily turn their attention to the object of the educational process, towards its contents, that is to curriculum, learning objectives, measurement, and knowledge demands. In contrast, advocates of the formal approach and theories primarily focus on the individual or the student as a person (Klafki, 1983, cited in Rahbek Schou, 2013, p. 317). Historically, in Scandinavia and Denmark welfare state educators since World War II have mostly tended to focus on individual development and seeing education as a way to develop democratic and critical citizens. They hence focused primarily on what Klafki terms formal education. With a range of education

reforms in the 2000s-2010s in alignment with the ideas and intentions of a neoliberal education policy, the overall focus and understanding of education in Denmark and Scandinavian countries shifted to what Klafki might have called material education theory.

Klafki (1983), however, suggested a synthesis of the two approaches in which a curriculum approach focusing on learning objectives and measurable outcomes is combined with a more holistic approach focusing on the overall personal development of students. He called this approach “categorical education”: a synthesis between a standardized, test and curriculum focused education approach, launched in neoliberal education policy, a mostly material approach combined with a more holistic approach focusing on the individual learner, a formal approach. He hoped this categorical approach might inspire educators to rethink new approaches. Klafki's ideals are held similarly in America through Rose (1995), who after spending time in classrooms throughout the United States, determined that public schooling has been advanced through a “long history of educators working both within the mainstream and outside it, challenging it through workingmen's organizations, women's groups, Black schools, appropriating the ideal often against political and economic resistance, to their own emancipatory ends (p. 413). Klafki, in his theory on categorical Bildung, suggested a synthesis of a curriculum approach with a holistic approach focusing on the individual learner.

Gert Biesta: Possibilities for Teacher Professionalism: Coming into Presence in Uniqueness

The influential European educational researcher and philosopher, Biesta, in continuation of Dewey and Klafki, developed

their ideas further. In his direct critique of neoliberal tendencies in recent education policy, Biesta (2007, 2010; Winter, 2011) promoted the idea of education and students as coming into presence in their uniqueness. Biesta has criticized the implications of a neoliberal education policy in England, Europe, and worldwide in most of his works (Biesta, 2007, 2010; Winter, 2011). His critique of a democratic deficit in contemporary education may remind us about some of the core values of education forwarded by Dewey more than 100 years ago. In his critique of the neoliberal/neoconservative discourse of accountability, Biesta (2010; Winter, 2011) promoted his ideas about possibilities for future education and teachers in concepts of coming into presence, uniqueness, and pluralism. The idea of coming into presence is what is going on in the relational dimensions of a teaching process on a daily basis. When teachers and students come into the presence of each other, it leads to “an exploration of what one might call the relational dimensions of the event of subjectivity” (Biesta in Winter, 2011, p. 538).

Biesta emphasized that the idea of coming into presence is complemented by a notion of uniqueness. He described uniqueness as the special way in which teacher and student exist together. The uniqueness of a person is important in the situations in which this specific person cannot be substituted by any other person, e.g. in the situation in which it is important that this specific person is present (Biesta 2010). Winter (2011) outlined Biesta’s two ways in which uniqueness can be articulated,

one which brings us back to identity and questions about knowledge of the subject, and one which leads us to an existential argument. In my work, I have articulated this as the distinction

between uniqueness-as-difference and uniqueness-as-irreplaceability. (p. 539)

The possibility for teacher professionalism and for the dedicated teacher is to be aware of the moments in which persons are coming into presence in their uniqueness based on a plurality. Biesta (2010; Winter, 2011) promoted concepts and an idea of a pedagogy that disturbs the control and presumably normal order in evidence based education as the only existing way to understand the purpose of education. A pedagogy that disturbs the normal order according to Biesta may be able to revitalize teaching and the professionalism of the dedicated teacher as it makes it possible to consider the uniqueness rather than standards and tests.

Philosophical Approaches Summary

Common to the three educators is that they all at different historical points have criticized the mainstream way of educating children in schools. While Dewey opposed rote learning and advocated for connecting children’s learning to activities and experience, Klafki advocated for a schooling in which skills and learning objectives-oriented focus is combined with an awareness of children’s overall personal development. Biesta, in his critique of neoliberal education policy, advocates for an even more individual centered focus, emphasizing the necessity for schooling to let every individual child—besides being able to obtain knowledge—to come to presence in his or her uniqueness.

Dewey, Klafki, and Biesta represent critical voices to mainstream education at their respective time. Common for their critique is their educational philosophical approach. They primarily discuss overall goals of education with respect to the individual child’s development, rather than focusing on specific educational approaches to teaching and learning. Common for them is also the

focus on the individual child. At the center of their thinking is the interest in how each schoolchild may develop his or her potentials without being restricted by existing regulations that result in rote learning, narrowing of the knowledge based on standardized curriculum and high stake tests.

Dewey (1916) is however the only educational philosopher of the three, who *explicitly* has addressed social and societal aspects and general aims of education with his book entitled *Democracy and education: An introduction to the philosophy of education*". Dewey discussed what societal goals education should forward and advocated for the goal of education being the promotion of democracy—democracy in the schoolchild, in schools, in society, and as an overall goal of education. Increasingly, though, students and teachers alike are seeing themselves not so much as in what they do, but in who they are or believe they are, or in other words, educators, students, and their society are structured bipolarly oppositional between the Net and the Self where “social groups and individuals become alienated from each other, and see the other as a stranger, eventually as a threat” (Castells, 2000, p. 3) and where innovations are driven by the market towards educational materials that, based on the niches created by the democratic goals, are largely products and processes driven by passion and greed. Democracy, as viewed by Dewey, has a difficult task ahead in terms of education but there seems to be an uprising social connection or concern that may help in the promotion of the democracy he had hoped for that will bridge the gap between social groups.

Ecology and the Ecological Approach to Education and Teacher Education

Dewey’s ideas of the goal of education as democracy and his ideals of education as a democratic process supporting democratic societies are still immensely important in 2020, more than 100 years after the first publication of his book. However, the world has changed tremendously since then, and we face many new concerns and challenges with respect to societal, climate, and global development. We are global citizens. According to UNESCO (2015), global citizenship is defined as

a sense of belonging to a broader community and common humanity. It emphasizes political, economic, social and cultural interdependency and interconnectedness between the local, the national, and the global. (p. 14).

The United Nations and UNESCO (2015) promoted the publication, “Global citizenship education: Topics and learning objectives,” focusing on the goal of education world-wide as for schoolchildren to being able to address global challenges in the 21st century. The aims of global education are set in continuation of the UN Global Education First Initiative emphasizing that global citizenship education...

provides the understanding, skills, and values students need to cooperate in resolving the interconnected challenges of the 21st century, including climate change, conflict, poverty, hunger, and issues of equity and sustainability. (GEFI, n.d.)

Education is a global concern and must address societal and global challenges such as climate changes, conflict, poverty, equity, and sustainability.

Since 2015, many educational researchers and philosophers have developed the idea of sustainability, global responsibility, and

global citizenship further (Myers, 2016; Sklad, Friedman, Park & Omen, 2016). Educational researchers have promoted the idea of ecology as a way to implement and rethink education globally and nationally when we consider the sustainability and the sharing of resources throughout our future social evolution and what might constitute private wealth along with social programs. There needs to be revolutionary ideas that no longer are class-based decisions.

A range of educational researchers in various disciplines have discussed and forwarded ideas about ecology as being important also for education (Gibson, 1977, 1978; van Lier, 2000, 2004, 2007, 2010). The American linguist and educational researcher, van Lier (2004), emphasized that an ecological perspective on education, teaching, and learning at its core is ontological. Our world view in the way we know how to be and how to act in relation to others, and our environment is taught to us, and we learn it within the era of time it is given. Gibson (1978) explored the ecological perspective of students' relationships to the environment or ecosystem through considering the interactions we have with living elements. Van Lier (2010) suggested that the development of our ideological and political perspectives is part of the learning process. From an ecological perspective, hence, van Lier (2010) stated

all learning is the ability to adapt to one's environment in increasingly effective and successful ways ... An ecological perspective is not neutral since it explicitly includes a non-passive relationship between the ... learner and the environment, in all the spheres of physical, social and symbolic functioning. This then adds an ethical and moral dimension to learning. (p. 97)

Thus, we can balance neoliberalism and its focus on market values with neoconstructivism's tie to traditional values.

An Ecological Approach: Implications for Teaching and Learning

In his efforts to define which implications for teaching and learning an ecological approach would have, van Lier (2010) outlined that the understanding of interconnectedness and complexity are central. He emphasized that the very social, physical, and symbolic levels of both the teachers' and students' actions and activities are complex and intertwined with interactions and language that make up the network of interdependency. According to van Lier, learners need to make choices and employ agency in more self-directed ways. Learners must be active, and "activity in a meaningful environment generates affordances for enhancing that activity and subsequent activities" (Van Lier, 2010, p. 6). Relationships, quality and agency are core values in an ecological approach. Van Lier wrote that "ecology is the study of the relationships among elements in an environment or ecosystem, in particular the interactions among such elements" (p. 5).

Furthermore, in his description of quality as a core value in education, van Lier in alignment with Apple (2006), Berliner (2009), and Biesta (2010), criticized neoliberal education policy focus on testing. Instead he advocated for shifts in the system away from testing dependency to appraisal systems that promote, address, and document educational experiences. Also, the emphasis on testing and core curriculum that limits how teachers teach about the environment and ecological impact on the students' local communities, places accountability and effort inward rather the outward. Current place-based education (PBE) proponents (Woodhouse & Knapp, 2002; Zink, 2014)

find their roots in Dewey's focus on students' experiences with subject matter.

Finally, agency is seen as the third core notion. Van Lier (2010) wrote that agency has many manifestations that is more profound than autonomy, motivation and investment since these terms only apply to the manifestation of a person's agency.

Conclusion

An ecology perspective on education sets out to reflect education as a local, national, and global societal value-based active process, which addresses global challenges. Core values in an ecological education as a general education philosophy are sustainability, resilience, and a certain robustness of education in order to face new global demands of the 21st century. The perspective introduces an ecological philosophy of education, in which education is seen as essential and central to addressing global and local challenges that arise out of the new set of ways that the world of today is organized. An ecological education calls for responsibility for sustainable development within various areas of life. As such education is responsible for developing

resilient values and systems in flexible ways, in which social systems are reflected and understood as being able for change.

An ecological perspective on educational philosophical thinking addresses global and societal aspects with respect to the interconnected challenges and core concerns of the 21st century global communities, outlined in the UN Secretary General's First Global Education Initiative (GEFI, n.d.). Similar to the global citizenship education, an ecological perspective emphasizes "political, economic, social, and cultural interdependency and interconnectedness between the local, the national, and the global" (UNESCO, 2015, p 14). At the local level, other researchers have forwarded core concepts in an ecological approach (Gibson, 1977, 1978; Myers, 2016; Sklad et al., 2016; van Lier 2004, 2010) and.

Many aspects in an ecological approach, however, still need further reflections and development. The importance of setting out new ways of conceiving of education, aims and goals of education, teaching, teacher education, and learning in post nation state seem to be relevant.

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