

International Panel for Social Progress

Chapter 19 – The contribution of education to social progress

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Abstract

Education is the process of learning and expanding culture, and, as it contributes to the improvement of the human condition through better knowledge, health, living conditions, social equity and productivity, is a central tool for social progress. Education is expected to foster social progress through four different but interrelated purposes: humanistic, through the development of individual and collective human virtues to their full extent; civic, by the enhancement of public life and active participation in a democratic society; economic, by providing individuals with intellectual and practical skills that make them productive and enhance their and society's living conditions; and through fostering social equity and justice.

The expansion of formal education, which was part of the emergence of the nation states and modern economies, is one of the most visible indicators of social progress. In its expansion, education created a complex web of institutions distributed according to different paths along the life course, from early education through the school cycles to the final stages of higher education, continuing with the provision of forms of lifelong education. This web of institutions is subject to breaks and cleavages that reflect their diverse and multiple historical origins and purposes and the asynchronous developments in different regions. From primary schooling, education institutions grew horizontally (by learning fields, subjects, or

occupations) and vertically (by levels and credentials.) The allocation of children and young people to different tracks and institutions, by a mixture of choice and assignment, is a core process in formal education that often reflects and reproduces preexisting inequalities.

The chapter presents the main actions needed to allow education to fulfill its promise to promote social progress considering the four purposes of education. On a global level more research informed policy is required and a balanced approach to educational reform, including teacher education, by putting more emphasis on the civic and humanistic purposes. Governance structures that are flexible, participatory, and accountable considering the political and social context are recommended.

The new agenda of *Sustainable Development Goals for 2030* established in 2015 calls for a new cooperative paradigm based on the concept of “*full global partnership*” and the principle of “*no one will be left behind.*” Sustainable Development Goal 4 for Education aims “to ensure inclusive and quality education for all and promote lifelong learning”. This provides a broad framework for education’s contribution to social progress. To achieve this, it is necessary: (1) to expand access and improve the quality of early childhood education, as a precondition for life-long educational success in all its goals; (2) to improve the quality of schools, including in learners’ direct interactions with their peer groups, educators and the surroundings; in institutional characteristics such as group size, student-teacher ratio, teacher qualifications and spatial and material conditions, and in the provision of a meaningful and relevant curriculum; (3) to enhance the role of educators, considering that teachers are not just carriers of knowledge and information, but role models that have a significant impact on children’s dispositions towards learning and life more generally; (4) to make higher and vocational education more inclusive and socially relevant, thereby enhancing the opportunities for students of all sectors of society to further their education in a meaningful and practical ways, eliminating social and cultural restrictions to access and reducing the dividing lines between high and low prestige and esteem between institutions and careers. Additionally, appropriate use of the opportunities created by the new digital technologies is recommended. These are not a magic bullet that will replace existing educational institutions and create a new learning world. But they can be powerful instruments to improve the quality and relevance of education and its contribution to social progress.

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Education and social progress

Culture, classically described as "that complex whole which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits" (Tylor 1870), is the most distinctive feature of human societies. Education is the process of learning and expanding culture, and, as it contributes to the improvement of the human condition through better knowledge, health, living conditions, social equity and productivity, is a central tool for social progress. Education takes place informally, starting with the interaction of children with their parents and significant others and by learning by doing in life, but becomes to a large extent formal in complex societies, as it is codified (in primers, manuals, catechisms, handbooks) and provided by specialized institutions (religious organizations, schools, universities, professional guilds, academies, apprenticeships) according to different methods (collaboration, demonstration, experimentation, interpretation, lecturing, memorization, practice). This chapter deals with the complex field of formal education, which has always been closely related to the power of political institutions and is shaped and influenced by competing political parties, movements and processes that try to enact their purposes and programs.

Education is expected to foster social progress through four different but interrelated purposes. Historically, the first is the humanistic goal, the development of individual and collective human virtues to their full extent. Traditionally, the issues related to the **humanistic and enlightenment roles** of education have been considered in terms of the knowledge and values imbued in the European classical school curricula. More recently, the attention has shifted to the students' school and learning experience, and how these develop capabilities which learners and societies value as intrinsically worthy. In higher education, main issues are the use of **science and technology** for understanding and the improvement of human condition, the appreciation of the study of the **humanities**, emphasis on **human responsibility**, and, increasingly, the collective responsibility to **save the environment and other species** against the overuse of planetary resources.

The second contribution of education to social progress is the **enhancement of civic life and active participation in a democratic society**, not only by teaching the **contents** of civic education, but also through the **practical experience** of living and working with others in the school environment and community service. Well-educated persons are expected to be informed, responsible and engaged citizens, better able to understand and participate in the

broad tasks of **creating, maintaining and improving the complex institutions of contemporary societies.**

The third contribution is economic productivity. Education should provide individuals with intellectual and practical skills that make them productive and enhance their living conditions; societies with a better-educated citizenship tend to be richer and more productive. The links between education and productivity can be direct, as when students learn the **specific skills and competencies for a craft or a profession,** or more general, when they acquire the **broad humanistic, social and intellectual competencies** required by contemporary work organizations.

The fourth contribution is **furthering of social equity and justice.** Education is sought by individuals and their families and supported by governments and social organizations as a mechanism of social mobility and inclusion, expected to break the barriers of social, ethnic and cultural exclusion and fragmentation; but it may also contribute to reproducing divisions in society and to maintaining inequalities. Furthering social equity requires policies to counter the **discriminatory** effects of education, including the use of resources **to assure** **universal equitable access to quality education.**



The analysis of the contribution of education to social progress is thus both a normative and an empirical endeavor. We need to spell out what can be expected education to provide, how these expectations are met in different contexts and historical times, whether these expectations are still worth pursuing, and what can be done to achieve them, based on empirical evidence. The general assumption of this chapter is that all four purposes are important and interrelated, and that social progress is hindered when any of them is neglected to the benefit of others.

The chapter is structured as follows. Section one provides the broad historical and contemporary context in a global perspective, focusing on the two dominating trends of education expansion and differentiation at all levels. Section two deals with how education policies can contribute to the fulfillment of its main four purposes. Section three elaborates on the contribution of pedagogy and the curriculum, and section four with governance. The final fifth section presents the main actions needed to allow education to fulfill its promises to promote social progress.

1 The context: Expansion and differentiation

The expansion of formal education, which was part of the emergence of the nation states and modern economies, is one of the most visible indicators of social progress.

Gross Enrolment rates (*) in education by region (2014)				
	Preschool	Primary	Secondary	Tertiary
Arab States	27.0	99.8	73.0	28.3
Latin American and the Caribbean	73.0	108.4	94.1	39.0
Africa	23.3	99.6	48.3	13.1
Asia	41.3	106.8	75.5	31.1
Europe	92.4	103.0	109.1	63.6
Oceania	97.7	108.5	101.4	51.9
(*) compared with the relevant age cohort				
Source: Unesco Institute of Statistics, http://data.uis.unesco.org				

The notion that all persons should be able to read the sacred books was part of the Jewish, Protestant and Muslim traditions, but was never fully practiced and mostly limited to men (Hanna 2007, Vincent 2000, Gawthrop and Strauss 1984, Botticini and Eckstein 2012). This notion was adapted and spread out by the modern, industrialized Western nation states, and exported to their colonies and areas of influence. In other cultures, education institutions shaped societal divisions or selected elites, e.g. the Brahman educational monopoly or the Confucian examination system. By the end of the nineteenth century, the United States, Australia, Canada and New Zealand had already reached universal schooling, followed closely by Northern Europe. In Asia, expansion of primary education started in Japan, followed later by Taiwan, Thailand, Sri Lanka and the Philippines. In Latin America and Africa, it expanded first in areas with strong European immigration, such as Argentina, Chile, Uruguay and Southern Brazil, as well as in South Africa and Zimbabwe (Benavot and Riddle 1988). Socialist countries have historically put much emphasis on the set up of mass education, strongly linked to the planned economy, and imbued by their political ideology. In 1950, about 47% of the children aged 5-14 in the world were enrolled in school. In 2010, 89.1% were.

Secondary education, which used to be mostly a preparatory stage for universities, became part of the regular school system, starting with the "high school movement" in the United States in the early twentieth century, and spreading later to Europe and other countries.

Worldwide, the number of secondary school students went from 187 to 545 million between 1970 and 2010, a threefold growth, capturing 63% of the relevant age group.

Until the early nineteenth century, advanced learning was limited to a small elite of religious leaders, bureaucrats and specialists, educated in universities and other prestigious learning centers, usually associated with religious institutions. In the second half of the twentieth century, higher education became a mass phenomenon, reaching 32 million students worldwide in 1970 and 182 million in 2010 (World Bank 2015, Trow 2000, Schwartzman, Pinheiro, and Pillay 2015, Schofer and Meyer 2005, Goldin and Katz 1997).

This extraordinary expansion of formal education – in volume, reach and scope - resulted from a combination of factors. For the modern nation states, public education was considered a tool for social cohesion and citizenship, and a means to develop the human resources necessary for running the state and enhancing the economy. Religious organizations and churches continued to participate strongly in education, sometimes in partnership and sometimes in dispute with nation states. Business sectors also got involved, either creating their own systems of vocational education or participating in the shaping of education policies.

This growth was also a response to expanding aspirations. For a growing number of persons, access to education was perceived as a channel for social mobility. More than a tool for access to public and private jobs, education came to be seen as a personal right, expected to pave the way for other forms of participation, including the benefits of individual choice, good employment and income, as well as social prestige. After World War II, the right to education was enshrined in the Universal Declaration of Human Rights and embodied in the work of international organizations such as UNESCO, that not only spread the gospel of expanding education but also helped countries to organize their school systems. In 1990, the *Jomtien World Conference on Education for All* set the target to provide free and compulsory primary education for all children in the world, with the financial and technical support of public and private donors. This was expanded with UN Millennium Development Goal 2, which aimed to achieve universal completion of a full cycle of primary education, and by 2015 the new Sustainable Development Goal 4, that emphasizes the quality and learning dimensions. Since the 1990s, different institutions started to implement worldwide assessments of student achievement in language, mathematics and science, with the assumption that, beyond local languages and cultural traditions, all persons in the world were

supposed to acquire the same set of basic cognitive and non-cognitive competencies required for full citizenship in contemporary societies (Spring 2008, Kautz et al. 2014a, OECD 2004, Mullis et al. 2003).

In the following, we describe the differentiation of educational paths and institutions in more detail. Higher education and universities are presented in a distinct subsection as they differ in many directions from other institutions of formal education.

1.1 Differentiation: main issues and dilemmas

As education expanded, it created a complex web of institutions distributed according to different paths along the life course, from early education through the school cycles to the final stages of higher education, continuing with the provision of forms of lifelong education. This web of institutions is subject to breaks and cleavages that reflect their diverse and multiple historical origins and purposes and the asynchronous developments in different regions. From primary schooling, education institutions grew horizontally (by learning fields, subjects, or occupations) and vertically (by levels and credentials.) The allocation of children and young people to different tracks and institutions, by a mixture of choice and assignment, is a core process in formal education that often reflects and reproduces preexisting inequalities.

1.1.1 Early education and care

Early education and care concerns the age span between birth and the beginning of primary education, in which the family is an important agent and has a high degree of responsibility, and the processes of socialization and informal learning are very prominent (Kamerman 2006). Early formal education starts at different points (between ages 3 and 7), and the participation rates vary widely among regions and countries. Here, formal education often still competes with the informal education processes in families, and with mere caring functions, and the drive for the expansion of early education is strongly related to the expansion of feminine work. There is growing evidence that good quality earlier education has multiplicative effects for further learning, but young children most in need are often deprived not only of access to early education, but also of several necessary background conditions and care, and one issue is how to balance the functions of education and care at the early age (Heckman 2006, Lubotsky and Kaestner 2016).

1.1.2 Primary education

Primary education is the first core part of compulsory education, and the goal of reaching universal access to primary education worldwide has improved but not been fully reached by 2017. Attention has over time shifted from access to equity, quality and persistence of learning, since high proportions of school children do not acquire basic competencies and often also drop out early, particularly among those coming from low-income communities. This shift of emphasis required the development of methodologies for measuring and assessing learning results, which depends on the mapping and definition of needed basic competences, with increasing attention given to those beyond basic literacy and numeracy (the so-called non-cognitive skills). More recently, character education and civics are also gaining ground (Learning Metrics Task Force 2013).

1.1.3 Secondary education

Secondary education, that builds on primary education, is much more differentiated, often first by stages of lower and upper cycles (which provides credentials of different paths inside or outside formal education), and then within these cycles. Participation at lower secondary level is close to primary education (85% globally; however, only at 50% in least developed countries and in Sub-Sahara Africa). At the upper secondary level, various configurations of sub-sectors arise according to the career patterns in education and the world of work. Differentiation between academic and vocational strands or sub-sectors, and between groupings or tracks of different aspirations, perceived ability and levels, may start already at the lower secondary level. Main issues are the common school agenda vs. the degree of differentiation at the lower secondary level, and how this relates to the further academic-vocational divide; how the increase of access and expansion at the upper secondary level can be guided and managed; and the purpose, orientation, and distribution of programs.

1.1.4 Vocational education

Vocational education might be situated in or outside the mainstream secondary education system, related to employment (as in the European systems of dual apprenticeship, that combine public and private actors in complex ways) or to labor market institutions (as in the Mediterranean and Latin regions), or to postsecondary or tertiary levels (as with further education or community colleges in the Anglophone world). Indeed, a main trend is that vocational education and higher education increasingly overlap. About one third of young

people have already terminated their formal education career at the stage of upper secondary education globally, and the controversy about whether the expansion of secondary education should be directed towards the academic or vocational strands is still alive (Heikkinen and Lassnigg 2015).

1.1.5 The apprenticeship model

The apprenticeship model developed in Europe from a long tradition of professional guilds, expanded with industrialization and, at least in some countries, has been adopted successfully to the challenges of the service economy. While there are certainly significant differences across countries in the importance of vocational education and training (VET) compared to general academic education, the former remains an important pathway to the labor market for a substantial proportion of youth. In 2014, 48 percent of secondary students in OECD countries were enrolled in VET programs at the upper secondary level (OECD 2016, p. 294). This is, on average, the same level as in the late 1990s (OECD 2000, p. 146). The United States never developed a distinctive vocational education sector, but, in practice, provided it within high schools and community colleges, as an option for students unwilling or not able to follow the path to full college education.

As the relative size of employment in the industrial sector diminished and access to higher education expanded, maintaining the attractiveness of VET as an alternative to academic education becomes more challenging. Much emphasis is currently put on the further development of vocational education and training in adapting it to the new circumstances (Lassnigg 2016), eliminating or postponing tracking to the end of compulsory education, creating paths from vocational to higher education, creating comprehensive schools expected to combine general and vocational education, and putting more emphasis on general skills, such as language and mathematics, in vocational schools. Hence, even in the age of the service-oriented knowledge economy, vocational education remains a popular alternative to general academic education at the secondary level.

Less developed countries often lack the established industrial and business sectors that facilitate good quality vocational education in richer countries. For them, formalized vocational education remains at best very limited in size, and at worse a second-class education for the poor. However, as the manufacturing and service sectors becomes important sources of employment growth in many developing and transition economies, there

is potential for further developing VET as an instrument to promote both economic growth as well as social inclusion.

1.1.6 Teacher education

Teacher education can be conceived as a distinct sector of formal education. There is strong evidence that the main driver of education quality is the professional qualification of teachers (Barber and Mourshed 2007). Well-prepared teachers are key not only in terms of good teaching, supporting the learning process, but also in supporting and enhancing cultural and intellectual values.

There is no standard approach to where and how teachers should be prepared and a lack of studies on that topic. The IEA Teacher Education and Development Study in Mathematics (TEDS-M) showed considerable variation in national policies related to quality assurance, entry requirements, program length, and the opportunities to learn as well as differences in the organization and types of teacher education programs within and across the participating countries. Countries with programs providing the most comprehensive opportunities to learn university and school-level mathematics tended to have higher scores on the TEDS-M tests. The data further indicated a positive relationship between the strength of quality assurance arrangements and future teachers' mathematics and pedagogy knowledge (Ingvarson et al., 2013). But the debates on teacher education are not just a matter of identifying the best practices, since they are intermingled with the interests of powerful players in the education sectors, such as governments, public and private teaching networks, publishing corporations, governmental and non-governmental organizations, religious movements and teacher unions (Grubb and Lazerson 2004).

The overlap of secondary and higher education in vocational and professional education is reflected in the institutional development of teacher education. Institutions of teacher education are interlinked to the professional profile of teachers that in turn reflects the divisions within education systems, the power division among various stakeholders, and the political emphasis given to education. Big debates include to what extent teacher education should be included in universities, and how it should be related to research on the one hand, and how the relationship to education policies should be organized on the other. Teacher education also is important for the spread of lifelong and lifewide learning behaviors,

reflected in the access of teachers themselves to further and continuing education, as well in the focus on skills required for continuous learning.

1.1.7 Lifelong education

Since the 2000s, the expanding notions of lifelong and lifewide learning emphasize the demand and necessity for broad and diversified learning through life. Learning does not necessarily have to be provided by formal education. The previous visions of the late twentieth century of building an additional formal adult education sector are being replaced by much more fluid and market oriented visions, including self-oriented learning and digital provisions, making extensive use of the new information and communication technologies. Despite the strong rhetoric about the benefits of adult learning, even its economic benefits are disputed, as in the seminal “Heckman curve” that postulates that the life-cycle returns for adult education are mostly negative (Singh, Schuller, and Watson 2010).

1.2 Higher education and universities

The higher education sector is undergoing a very expansive development, starting from few homogenous elite universities and emerging into a wide, diverse and differentiated higher education or tertiary sector comprised of several types of organizations and institutions (Trow 2006). The university is still the core institution, combining, at its best, high quality teaching and research, and, more recently, expanding towards the ‘third missions’ of technological innovation and community outreach. Universities, as cultural, professional and political institutions, reach far beyond the education system, and are thus – beyond their economic role – more closely involved in the processes of wider societal and political development and change than other educational organizations. Consequently, these institutions are often at the center of critical political movements, as well as being the target of authoritarian policies.

The medieval religious teaching universities were already internationally oriented; today, science, research and higher education are to a large extent global endeavors, and the leading universities are global institutions in their impact, personnel and student bodies. However, the sector is tremendously diverse, and overlaps with vocational education. The Bologna Process, supported by the European Union, is seeking to develop a common framework for the combination and integration of different types and levels of higher education, and has spread to 48 countries far beyond Europe.

1.2.1 The impact of modern universities

Universities played a central role in the rapid socio-economic development of the 1950s and 1960s in North America, Western Europe, and Australasia. University research produced much of the knowledge that led to the biotechnology, nanotechnology and information and communication technology revolutions, and university graduates became the core knowledge workers in the industries that emerged and blossomed in the wake of these revolutions (Mazzucato 2013). In addition, new types of higher education institutions and sectors emerged, focusing on welfare professions in the public and private sectors, spreading professional models of work life, enrolling first generation students in higher education, and bringing them and their families into the middle classes.

Somewhere along the line the trust-based relationship between social progress and higher education was altered. The first reason was the dramatic increase in the size of higher education: massification of student numbers was followed by rapidly increasing staff numbers and new higher education institutions, leading to a dramatic costs explosion. Second, from the 1960s on, the belief in the linear relationship between the publicly funded products of higher education (knowledge, early stage new technologies, and qualified graduates) and social progress became increasingly challenged. Third, in several regions, including the USA, South America and various East Asian countries, a large private, for-profit higher education sector emerged. While private, not-for-profit higher education has a long history and is, like public higher education, anchored in enlightenment values, for-profit higher education is a new phenomenon, and differs in its basic values fundamentally from the traditional not-for-profit institutions and systems, which are also being infiltrated by this new ethos (Altbach and Levy 2005, Levy 2006, Marginson 2016).

1.2.2 International competitiveness and world class universities

The growing focus on the economic role of higher education led many governments to strengthen the governance of their higher education systems to increase their universities' links to the economy and contribution to the global competitiveness of their countries. While there are variations among these national reform agendas, there are also clear similarities related to the ideas of strengthening the 'third mission' of higher education: universities should become 'integrated strategic actors', led by professional leaders and managers, expected to guide their institution into a fitting 'niche', and make sure that their institution's

engagement with society intensifies. All institutions are expected to be socio-economically relevant, to contribute to the innovative capacity of private sector companies and public-sector organizations, to the creation of jobs, and to the solving of the grand challenges that are confronting our societies.

Part of this trend are the efforts of some leading universities, such as Harvard, MIT and Columbia, to become global institutions, establishing branches and offices in different countries, and of governments to concentrate resources into a selected group of institutions to reach “word class” excellence in teaching and research, as in the National Universities Research Program in Russia, the “excellence initiative” in Germany and the “double first class” plan in China. This drive was spurred by the enormous attention gathered by the first global university ranking in 2003 (the so-called Shanghai Ranking) that inspired the introduction of various global and regional rankings, some of which have a commercial character.

On the positive side, this movement has stimulated many institutions to improve their standards of teaching and research and to introduce improved governance practices. The actual ability of these initiatives to make universities truly global and to increase their countries’ international economic competitiveness, however, is still to be seen. At the same time, there are cautious views pointing to indications of over-education, mismatch and potentially inflationary effects of global competition (Altbach and Balán 2007, Altbach and Salmi 2011, Brown 2000) and the risks associated with the development of a globalized, technocratic “scientistic” elite around the culture of science and technology in higher education (Drori and Meyer 2006). Other contested topics are the issues related to ‘academic capitalism’, ‘entrepreneurial universities’ and the enforcement of privatization and the market, supposedly required to foster the “knowledge triangle” of education, research and innovation (Lassnigg et al. 2017, Maassen and Stensaker 2011, Brunner and Uribe 2007), and the apparent decline of the cultural mission of the university in democratic societies, including strong humanities and social sciences to support critical intellectual discourses.

2 The purposes of education

The four different but interrelated purposes through which education is expected to foster social progress are briefly described in the introduction. This section aims at a more concrete presentation of how they have been attained so far, and might be further achieved. A common

understanding today is that policies should be assessed by their achievements, in terms of access to schooling, academic proficiency, professional credentials, and integration to the labor market. Broader impacts, such as economic benefits at various levels, social positioning and mobility, and wider cultural outcomes as civic participation or value patterns, cannot be achieved by education alone. The understanding of these wider economic, social, and cultural outcomes is, moreover, affected by difficulties and controversies in measurement, and policies in education have been driven by untested beliefs in its wider results for a long time.

Since the mid-twentieth century, sociological research has started to analyze the wider impact of education on social structures and mobility, and, in parallel, economics has applied the models of growth accounting and the production function to education, and has developed the understanding of human capital, both with strong and controversial effects on policy related discourses. The main indicators for these analyses were the data on access, participation and finance, to which was added, more recently, large-scale data on student achievement. This has changed the political focus towards the results of learning, still limited however by a bias towards cognitive outcomes, a narrow understanding of the ‘production function’ (how education ‘produces’ the learning results), and of the impact of the results on social progress more widely. These latter include economic growth, innovation, social stratification and further aspects of well-being, political participation and deeper cultural dimensions.

Besides the cognitive outcomes, educational settings develop tacit personal “soft skills” such as self-regulation, behavioral management, and social and communication skills. Research shows that those with such traits are more likely to take better care of their own health (not to smoke, for instance), and less likely to be depressed or to commit crimes. Educated individuals are also more likely to interact more positively in social networks and local governments (*Vorhaus et al. 2008, p. 13*). Additionally, a review of the economics research evidence on the social externalities of education in cities found that “increases in the aggregate stock of human capital can benefit society in ways that are not fully reflected in the private return of education. Human capital spillovers can in theory increase aggregate productivity over and above the direct effect of human capital on individual productivity. Furthermore, increases in education can reduce criminal participation and improve voters' political behavior” (*Moretti 2003*). An extensive review of the evidence on the links between education and social cohesion finds a very significant association between equity in

education and the presence of trust, civic cooperation and low crime in society, which are core components of a well-functioning civic society. Effective education on pluralism, global citizenship, patriotism and elections seems to lead to higher levels of tolerance, but there was no relationship to levels of trust, which depends very much on the countries' contexts (*Green, Preston, and Janmaat 2006*).

2.1 The humanistic and enlightenment roles of education

In the current humanistic understanding of education's purpose, the emphasis is not on human beings' usefulness to the state or the economy or to a religious order, but on their own personal development and the sustaining and growth of cultural traditions as goods in themselves and necessities for social progress. The origins of this goal, in the Western tradition, can be traced back to the Greek concept of *Paidea* and the European classical curriculum of grammar, poetry, rhetoric, history, and moral philosophy, which were deemed necessary to infuse students with values, knowledge and the abilities required to flourish as human beings and participate fully in their society. With the Enlightenment, education in the West became imbued with the values of rationality, science and human progress, including pragmatism and more practical orientations.

In higher education, the main issues are research and innovation, reflection and the humanities. The modern research university, which emerged after centuries of scholastic stagnation, gradually started to be a carrier of enlightenment values, such as rationality, scientific attitudes and the intellectual traditions of scholarship. Its classical model was the Humboldtian university of the early 19th century, glorifying *Wissenschaft* and creativity, in the sense of education through the creation of new knowledge, as preconditions for meaningful thinking, sound judgements and drivers of social progress. The German research university, together with the French model of high quality professional *Grandes Écoles*, became the main templates for modern universities worldwide, carrying enlightenment values into the 20th century (Ben-David 1977). The US invention of the graduate school is seen as a next institutional step that has further improved the research function and contributed to differentiation of levels and functions in universities (Geiger 1993, 2004). Most higher education institutions throughout the world in the twenty first century are adaptations, not always very successful, of the German, French and American models.

There are also a few cases of new universities which seek to develop an alternative, “postcolonial” culture, through the recovery, creation and recreation of the knowledge and language of original nations and peoples, supported by social movements and intellectuals in different parts of the world. Examples include a Zapatista-supported school in Chiapas, México, Universidad de la Tierra; the Universidad Indígena Boliviana Aymar Tupak Katari; and the Universidad Indígena Tawantineyu, in Bolivia. The Gawad Kalinga Village Farm University in the Philippines, while not a formal degree-awarding institution, shares some of the same goals in celebrating traditional ways of life and in distancing itself from Eurocentrism (Burman 2016, De Oliveira et al, 2015, Takayama, Sriprakash and Connell, 2017).

2.2 The place of the humanities in the academic culture

The academic cultures of science and technology, on one hand, and the humanities and literature, on the other, and more recently that of the social sciences, are very often in tension and do not communicate well, but are all key components of the enlightenment tradition (Snow 1959, Lepenies 1988). Humanities and the social sciences overlap to some extent, but, while the social sciences rely on empirical approaches similar to those of the natural sciences, as in economics, sociology and political science, the humanities tend have a different approach, that includes, among others, the study and interpretation of language, linguistics, literature, history, jurisprudence, philosophy, ethics, esthetics and their use for the reflection on the human environment, with particular attention to our diverse heritage, traditions, and history (United States Congress and House Committee on Education and Labor 1965). The humanities are important not only for their own sake, but for their potential to place the overwhelming priority given to economic and technological rationality in a broader context, that includes the preservation of the environment, a responsible way of dealing with innovation, as well as securing a just and equitable access to cultural goods. By upholding the principles of non-discrimination and multi-culturalism, the humanities contribute to the purposes of identity building, the support of esteem and recognition, helping young people to deliberate about their plans and potentials, a key dimension of a just and progressive society.

2.3 The students' experience and identity

If we extend the humanistic purpose to include psychological perspectives on personal identity, a more recent consideration is the role of education and the school experience in building this.

Who am I? What shall I do with my life? Questions of identity can and do arise at many points in life, and are particularly intense during adolescence. Individuals have multiple identities: one can be Indian, female and planning to be a teacher, which, together, defines one's personality, or "self" (Spiel, 2017; Schwartz, Zamboanga, and Jarvis 2007). In addition to being shaped by dispositions, motivations and individual experiences, the process of identity development can be influenced by the social and cultural environment. Schools, as the place where students spend much of their waking time, can play a crucial role in helping them to sort out who they are and their places in society (Zimmermann et al. 2015).

As the transition from adolescence to adulthood becomes far more extended, individualized and complex than in the past, schools need to provide opportunities for students' exploration of life and support identity formation in domains such as occupation, culture, religion, politics and gender roles.

Cultural background and gender are central aspects of identity, in which schooling plays a significant role. In contexts of diversity, shared learning places provide opportunities for prolonged first-hand contact with people from different cultures and ethnic backgrounds, and have the potential to afford positive opportunities like friendships, learning about other cultures, understanding other ethnic groups; as well as negative experiences such as prejudice and racism, rejection and social exclusion, bullying and victimization (Schofield 1995).

2.4 Education and citizenship

The civic purpose of education is clearly stated in the internationally-agreed Sustainable Development Goals, with the expectation that, by 2030, "all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, thorough education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development" (United Nations 2017).

The initial drive for the expansion of public education in the modern era was a concern for the need to imbue the population with the knowledge, values and habits of citizenship. Thomas Jefferson believed that “if a nation expects to be ignorant and free, it expects what never was and never will be.” In Latin America, Andres Bello and Domingo Sarmiento established the first public school systems in Chile and Argentina in the 1840s, arguing for the importance of public education for nation building and economic well-being (Jaksic 2006). Since the 1918 Reform Movement in the city of Cordoba, Argentina, demanding university autonomy and governance with strong participation of students, academics and alumni, universities in Latin America have played a crucial role in replacing the traditional oligarchic regimes with democratic governments, expanding enfranchisement and paving the way for a new generation of leaders groomed in the university benches and student organizations (Levy 1981, Altbach 1981, Walter 1968, 1969, Bernasconi 2007). In 1968, in Paris, Berkeley and Prague, students went to the streets to demand more participation, less war and more democracy, changing forever the post-war political consensus that may have existed in their countries (Judt 2006, chapter 13).

The role of schools, as expressed by Émile Durkheim in France in the early 20th century, was to make students understand their country and their times, to make them feel their responsibilities, to initiate them into life and thus to prepare them to take their part in collective tasks, providing a link between private life in the family and public life in society; fully educated citizens should be disciplined, attached to their social group, and endowed with autonomy and self-determination, provided by rationality (Durkheim 1922, Wesselingh 2002, Nisbet 1965). Sociologists developed the concepts of civic culture, social cohesion, social trust and social capital as key ingredients for the proper functioning of modern democracies and complex economies (Almond and Verba 1963, Putnam 2002, 2001, Harrison and Huntington 2000). Reactions to the conservative tone of the Durkheimian tradition, in the context of a changing world, led to alternative pedagogical approaches putting more emphasis on critical thinking, communitarian values, and individual liberation and self-determination (Peterson 2011, Biesta, De Bie, and Wildemeersch 2014, Benson, Harkavy, and Puckett 2007, Apple 1996, Freire 1970, Dalton and Welzel 2014).

Thus, the main thrust of promoting citizenship via education is towards social engagement, democratization and enlightenment, but it should also be kept in mind that non-democratic regimes might purposefully use the education system as a propaganda instrument to bolster

support for authoritarian forms of government. Hence, the contents of civic education in the school curricula depend very much on the prevailing cultures and ideologies in different countries and times; they can be strongly nationalistic, cultivating national glory and heroes; driven by notions of obedience to family and nation; or shaped by the current worldviews of the teaching profession.

An analysis of the official school curricula in of seven Latin American countries in the 1990s found a clear decline of strong symbolic contents related to the national community, replaced by a new emphasis on general values and local identities; and found that history has lost its role of forging national identities and horizontal solidarity, since the past was replaced by expectations about the future (Cox, Lira, and Gazmuri 2009). In the 1990s, the *International Association for the Evaluation of Education Achievement* carried out a comparative survey of civic education in 38 countries, assessing to which extent 14-year-old students gained the knowledge, engagement and attitudes expected from citizenship in a modern society. One of their findings was that "in most countries, young people's views of political parties are relatively negative. In place of giving allegiance to parties and to what many perceive as hierarchical political organizations ruled by an older generation, they are instead gravitating to social movements as the arenas in which good citizenship can be manifested" (Torney-Purta et al. 2001 p. 189).

This disaffection with the political establishment is likely to be a consequence of the malaise affecting the political institutions in general, rather than a negative effect of education. What the evidence shows is that, while good education can improve the student's intellectual and personality tools to take part more fully in social life, the content of this participation depends more on the broad social and political context than on the school curricula as such.

In general, it has to be considered that formal public education, provided or guided by the state, is always embedded in the wider processes of informal learning and socialization, which de facto provide the main thrust of civic education through everyday life. The processes of school life and governance, and the role model activities of adults, also provide civic education through the hidden curriculum. Schools should provide space for reflecting these experiences, and learn participatory and solidarity practices, including the curriculum as well as setting up appropriate procedures of school life.

2.5 Education and the economy

Economists coined the expression "human capital" to refer to their interpretation of education as a factor of production. Since the pioneering work of Schultz, Becker and Mincer (Becker 1973, Schultz 1970, Mincer 1974), empirical research has shown again and again that investments in education leads to higher income, and that countries that expand and improve the quality of education are more likely to develop their economy (Sianesi and Reenen 2003, Harmon, Oosterbeek, and Walker 2003).

If education is an economic investment, it should be possible to measure its rates of return, both for individuals and for societies, and actors are expected to decide their investments accordingly. If this is so, data on rates of return could be used to establish priorities in education policy by finding out where the return is higher, in primary, secondary or higher education, as practiced by the World Bank in the 1990s and still widely used (Leslie 1990, Psacharopoulos 1994).

A recent study found that, across 140 countries, there has been a significant shift in the rate of private (individual) returns to education. They found that returns to schooling have declined from the early 1980s to post-2011 (from 13% to around 10%) and they ascribe this to the unprecedented increase in schooling (three more years globally). The study also found that, except for high-income economies, primary education has higher returns than secondary education and that higher education has the highest private returns, despite the large increase in the number of students and graduates, with sub-Saharan Africa with the highest rates in the world (21% vs. 14.6%) (Montenegro and Patrinos 2014).

Despite its intriguing findings, the use of rates of return for setting up priorities and assessing the quality of investments in education is controversial, because of its underlying assumptions and policy implications. The rates of return are calculated from the wages the individuals get in their life-time, compared with their investments to complete their education. In most countries, education is subsidized with public resources, and the social benefits are calculated as private returns net of public costs. However, Heckman and associates show that "people do not only (or even mainly) make their schooling decisions by looking at their monetary returns in terms of earnings" (Heckman, Lochner, and Todd 2006), Also, how policies should deal with differentials in returns is not trivial. A strict market-based approach would leave the investment-return logic on its own. An interventionist

approach must deal with the question of why the public should support areas where the returns that are high anyway, or should support areas where they are low and risk efficiency losses. Thus, policy choices are necessary in any case. A fundamental question is: which factors contribute to the levels and differences of returns, and how are these differences influenced by the degree of income inequality and social reproduction of educational credentials in a region? As the British sociologist Alison Wolf argues, “wages reflect a great deal more than productivity. The amount paid to different groups and different individuals also depends heavily on the way in which a society is organized overall: how it runs services such as health and education; how much its public and civic culture values equality; how professionals’ fees are regulated” (Wolf 2002).

2.5.1 Education and the regulation of the market place

There are important differences in the ways the labor market is organized and relates to the education sector, depending in part on whether countries have a tradition of market coordination or liberalization, and how they react to the technological changes related to deindustrialization and the expansion of the services sector (Thelen 2007, 2012).

In some countries, the regulation and protection of the job and professional markets and of education may be part of a broader political consensus on the values of social equity, implemented by the prevailing political parties; in others, the segmentation of the job market may derive from the political power of specific professional and economic groups.

In the former Soviet Union, education was tightly linked to the productive sector and unemployment, by definition, did not exist, but this arrangement proved to be inefficient and did not survive the opening of the economy (Froumin and Kouzminov 2015, Soltys 1997). A usual pattern is for countries to protect the better organized sectors of the market with the legal provisions of job stability and unemployment benefits, while allowing other parts of the labor market to remain unprotected, with low salaries, in the “informal” economy, or excluded from the labor market altogether, establishing segmented job markets enforced by legal and sometimes ethnic or social barriers (Carnoy 1978, Wilkinson 2013).

When the labor market is regulated, it also extends this regulation to education. A classic example is the link between the industrial sector and the apprenticeship system in Germany, Austria and Switzerland, and the role played by medical and legal associations in defining the

numbers, duration, resources and content of education in their respective careers, while others may be left unattended and unfunded (Rosenbaum 2001, Lassnigg 2016).

2.5.2 Higher education and the economy

Higher education contributes to economic development both in general, by enabling the population to participate more fully and evenly as producers and consumers in the complex industrial and services society, and, more specifically, by providing the skilled staff required by different sectors of the modern, knowledge intensive economy. In higher education, a key issue is innovation and the role of science for economic competition in different parts of the world. Prominent approaches that focus on the ‘race between education and technology’ put very high emphasis on university education (Acemoglu and Autor 2011). The expansion of application and development-oriented higher education institutions has several important consequences. First, new study programs are introduced in areas such as agriculture, engineering, business, forestry, education, architecture, education and mining. Second, it brings new forms of professional training to higher education through the introduction of discussion classes, experiments, field trips, and laboratories, as well as through the emphasis on national languages as the language of instruction (instead of, in the distant past, Latin and Greek). Third, it stimulated a more direct coupling of higher education with economic and political actors and agendas (Gibbons et al. 1994, Etzkowitz 2008, Mazzucato 2013). Finally, it opens higher education to non-traditional students.

A comprehensive analysis of the relationships between higher education and economic development showed that expanding higher education may promote faster technological catch-up and improve a country’s ability to boost its economic output (Bloom, Canning, and Chan 2006). Their detailed study of sub-Saharan Africa suggests that a one-year increase in the higher education stock would raise the long-run steady-state level of African GDP per capita by 12.2%. They estimate that a one-year increase in higher education stock may boost incomes by 3% after five years and by 12% eventually. Considering that incomes have been falling in some African countries, such growth would be significant, and strongly suggests that higher education can play a recognizable role in promoting economic growth. However, it must be said that higher education can only be built on the earlier stages of education, and presupposes the necessary contextual conditions for the development of quality education; thus, there is no real policy alternative between these different sectors, and the whole system must be considered.

2.5.3 Policy choices

In sum, the broad links between education and productivity are clear in principle, and must be considered in the contribution of education to social progress. However, there are many policy choices left that do not directly follow from the economic evidence as such. Policies must embed the expected economic impacts into the broader potential impacts of education, and consider the controversial economic approaches. Traditional growth theory and market-led reasoning give much less weight to education for economic growth and competitiveness than new growth theory and more institutional and innovation oriented approaches. The former sees much more danger in over-education, as when education keeps expanding and the economy changes or stagnates, leaving educated people without jobs, uncertain of their places in society and having to migrate or find work in activities below their qualifications (Hersch 1991). The more innovation-led approaches see higher education lagging in the race with technology, even in the US of today, with its large system and its already high participation, and see rising inequality as an effect of this lag.

Striving for social progress requires the placing of the imperatives of economic growth and innovation into a broader framework of well-being beyond GDP, and dealing with the dark sides of innovation and the limits of growth.

2.6 Education and equity

As education expands, it also plays a role in sorting people according to their education attainment and the social prestige of the places they study and the careers of their choice. Beyond its value in terms of skills and competencies, formal education is also a "positional good", meaning that individual benefits depend on one's position within the distribution of access and attainment. This results in intense pressure and competition for more education and credentials, which may conflict with the actual requirements or possibilities of the job market (Brighouse and Swift 2006, Brown 2003, Hollis 1982). Education systems are stratified in terms of the prestige and opportunities provided by different types of schools and universities, and access and achievement are strongly correlated with the social conditions of students and their families, leading some authors to argue that the main effect of education is to maintain and even reinforce existing social inequalities and the monopolies of social status through the administration of credentials. Education credentials can be a useful mechanism to signal one's competencies for potential employers in a competitive job market, but can also

be associated with market segmentation and professional monopolies (Spence 1973, Bourdieu and Passeron 1970, Collins 1979, Wolf 2002).

2.6.1 The global efforts to reduce inequality

To deal with the problems of access and quality of education in the world, with emphasis on low-income countries, the United Nations has been promoting important collective actions, starting with the 1990 *Jomtien World Conference on Education for All*, continuing with the 2000 *Millennium Development Goals* and culminating in the 2030 *Agenda*, in the form of 17 *Sustainable Development Goals* (SDGs), aimed at a shift in the economic and political relationships between high, middle and low-income countries.

Between 1999 and 2012, the number of out-of-school children dropped from approximately 115 to 57 million. Among all regions, South Asia experienced the most accelerated progress. However, the rate of progress has significantly stagnated since 2007. Almost 30% of low-and middle-income countries are off-track to meet goal of universal primary education and more than 20% are off-track to meet the goal of gender parity (World Bank 2012). Those remaining out of school are among the most disadvantaged: children in conflict-affected countries; children with disabilities; and children from the poorest families. In West and Central Africa, children of primary school age from the poorest quintile are on average six times more likely to be out of school as those from the richest.

2.6.2 Gender parity

Progress has also been made toward gender parity in terms of primary school enrolment, with approximately 70% of countries reaching this quantitative goal, but local cultural perspectives on the value of education to girls in some contexts have also led to exclusion. Providing girls with an education helps break the cycle of poverty: educated women are less likely to marry early; less likely to die in childbirth; more likely to have healthy babies; and more likely to send their children to school. Poverty and other forms of social disadvantage magnify gender disparities. In most sub-Saharan African countries, girls from the poorest households remain most disadvantaged in terms of school participation. The *World Development Report on Gender Equality and Development* (World Bank 2012) shows that there are still 31 million girls out of school, nearly 4 million “missing” women annually (meaning the number of women in low-and middle-income countries who die relative to their counterparts in high-income countries). The systematic exclusion of girls and women from

school and the labor force translates into a less educated work force, inefficient allocation of labor, lost productivity, and diminished progress in economic development. This is particularly worrisome in some Gulf States countries, where gender inequality in access to education is very high (United Nations Development Programme 2017).

However, even in egalitarian societies, gender differences still exist in students' performance and motivation, in vocational aspirations, in salaries and in participation in different fields. Men are expected to develop traits related to agency (as aggressive, forceful, independent, and decisive), whereas women are expected to develop traits related to communal virtues (as kind, helpful, beautiful, and concerned with others) (Kite, Deaux, and Haines 2008); and these expectations lead to self-fulfilling prophecies that perpetuate biases (Jussim, Eccles, and Madon 1996). In the context of education, gender-stereotyped expectations occur in the interests, abilities and vocational aptitudes attributed to girls and boys (Kollmayer, Schober, and Spiel 2016).

2.6.3 The role of schools in reducing inequality

The role of education in reducing inequality depends on schools' ability to compensate for the effects of the student's preexisting social and individual disadvantages, providing them with equal opportunities for learning, social participation and work. The *Coleman Report*, published in 1968 in the US, influenced research and policies for decades by showing that public schools had little or no effect in reducing the inequalities associated with race. However, school characteristics were specified only narrowly, e.g. by resources, and the results were always contested. Since then, the assessment of the "school effects" on student achievement, compared with preexisting conditions, and the expansion of opportunities through social inclusion, better schools and teaching, became a major subject of education research (Hanushek 1986, Coleman 1966, 1968). These studies, primarily taken up through econometric modeling by economics of education, are being in turn criticized for neglecting the processes in place within schools. A similar controversial study (Rutter 1982) has set a counterpoint by trying to point out 'that school would matter' and has stimulated more emphasis on processes and inner school factors. These gaps between different methodologies still exist, and result in different kinds of policy recommendations (Hedges et al. 2016). Alternative types of modeling have also been developed in economics of education that take a wider perspective on the whole structure of education and on different kinds of longer term

impacts, with quite different results on peer effects, tracking, and vocational education (Brunello and Checchi 2007).

There are many strategies to make education more attractive, meaningful and accessible, but the fact remains that millions of students, in rich and mostly in low income countries, go through school without learning to read and understand a simple text, to solve a simple arithmetical problem, or to have a grasp of very simple scientific facts. Inequality of outcomes is impacted by lack of equity in access to distinct forms/types of schooling (public fee-paying, public no fee-paying, self-funded private or grant-funded private schools); by inequity in provision in respect to dosage (class size, student-teacher ratios, teaching and learning time, ability to learn at home, language choice, technology, infrastructure); and by inequity in quality (teaching standards, pedagogical methodology, materials, curriculum and curriculum coverage). Educational governance, institutions (schools) and educators, curriculum and pedagogy all matter a great deal. Where students from poor or marginalized communities are exposed to less rigorous content and expectations or to a less engaging pedagogical method, the risk of inequality in the opportunity to learn is high. Grade attainment (completing more grades) will not improve educational outcomes or downstream income earnings if little learning happens per grade. More schooling is therefore not necessarily equal to a better education (Hanushek et al. 2015, Hanushek and Woessmann 2012).

Inequality in preschool and primary education

Inequality in education achievement starts in the early years, and can be cumulative: “reading acquisition is a process that begins early in the preschool period, such that children arrive at school having acquired vastly differing degrees of knowledge and skill pertaining to literacy. Attention has thus turned to whether preschool differences in language and literacy development are reliable prognostic indicators, and perhaps direct causes, of later reading (dis)abilities” (Scarborough 2009, p. 23). Good quality preschool education is crucial to reduce these differences, combined with literacy methods emphasizing phonological awareness, letter recognition, print concepts, retention of verbal material, and oral language skills (Goswami and Bryant 1990, Brady and Shankweiler 2013) In primary education, inequality can increase if students arriving with different conditions are not supported with differentiated action to ensure that they acquire the required competencies in reading, writing and arithmetic in the first one or two years. In highly unequal societies with decentralized

school systems, poor students may end up enrolled in local schools with less resources and lower teacher quality, which can increase the gap between them and those coming from richer and better educated families that go to better equipped and pedagogically stronger schools (Park and Kyei 2011, Lee and Burkam 2002).

Inequality at secondary and vocational education

At the secondary school, a central issue is the existence of separate academic and vocational study streams. The fact that students reach secondary education with widely different interests, motivations and competencies means that they cannot be required to follow the same curricula and be assessed by the same standards. To deal with this issue, several countries have developed highly differentiated systems, with general and vocation education tracks going up to the tertiary level. One common criticism on this differentiation is that tracking often takes place too early in the students' life, and is related more with the students' social origins than with their intellectual potential, worsening class biases in access to education (Pfeffer 2008, Hanushek and Wössmann 2006, Van de Werfhorst and Mijs 2010). However, the separation between academic and vocational tracks might have beneficial effects, since it allows for the inclusion of a large variety of students in schools, increases the supply of vocational skills in the economy, and facilitates the transition from school to work (Shavit and Muller 2000, Hall and Soskice 2001, Schwartzman 2011). Furthermore, there is empirical evidence that levels of socio-economic, not educational, inequality are lower in countries with extensive vocational training systems (Busemeyer and Thelen 2015, Estevez-Abe, Iversen, and Soskice 1999, Solga et al. 2014) because vocational training opens access routes to well-paid and secure employment for those with few academic skills.

Inequality in higher education

Higher education can contribute to inequality by providing additional benefits to those that are successful in completing secondary education and going through the selective processes of university admissions. In general, the wage differential between those with higher education and those without it is affected by the relative scarcity of persons with high education in a country and the demands for highly skilled persons in the economy, but also by the ability of persons with less education to protect their income through strong union organization and minimum wage legislation. Historical data for the US shows that the earning gap in favor of higher education in that country has been increasing since 1979,

which is explained by the limited growth of higher education participation, the expanding demands for highly skilled personnel and the deterioration of the earnings of less skilled workers (Autor 2014).

3 The contribution of pedagogy and the curriculum

The role of education in promoting social progress is enhanced by pedagogy and the curriculum. Pedagogy is a complex and highly culture-bound process, and this is part of the explanation for the limited attention it receives by researchers and funders. The traditional Western curriculum, and the way it is presented to students, used to be taken for granted as the only appropriate direction. Sociologists of education, however, have shown that the school curricula are related to the values, culture and social standing of specific social groups, and, as education expanded, new groups and sectors started to criticize the standard practices and demand alternative curricula, more meaningful for them (Whitty 1985, Beyer and Liston 1996, Bowles and Gintis 1973). There is a permanent and lively debate among educators about the contents and ways in which the teaching of virtues such as criticism, feminism, personal identity, pluralism, empathy and tolerance should occur (Noddings 1995, White 2003). Post-colonial perspectives also signal the need for alternative views of ‘the good life’ and the very foundations of knowledge, which move beyond dominant Western definitions and ways of seeing the world.

3.1 Pedagogy

Pedagogy consists of the observable methods and interactions that take place in educational settings. It also includes the beliefs, philosophies and theories that underpin these in the minds of educators. All lessons have shared and familiar ingredients: tasks, activities, teacher judgments, and interactions, structured through the use of time, space and student institutions, and, in the school context, over the cycles of the school year, routines, rules, and rituals (Alexander 2001b, Alexander 2001a).

Despite cultural variations and recurring controversies, among different pedagogic traditions, learner-centered education has gained prominence as a policy and promoted practice. The broad term ‘learner-centered education’ (LCE) is an umbrella for a wide range of practices which emphasizes inquiry-based learning, activity-based learning, and critical pedagogy. Its best-known expression was the “progressive education movement”, started in the late nineteenth century in Europe and related to well-known names in the education literature

such as Johann Heinrich Pestalozzi as a forerunner, Maria Montessori, Jean Piaget, Lev Vygotsky and John Dewey (Reese 2001, Hayes 2006). What they all have in common is their reaction against teacher-centric approaches such as lecturing and drilling, and their emphasis on learner participation in what is studied and how.

LCE has been associated with social progress in many ways (Schweisfurth 2013). By encouraging active participation by all individual learners, and by giving them greater control over the curriculum, it upholds children's rights conventions and is assumed to facilitate the development of democratic skills. Critical versions of LCE encourage questioning of received knowledge and authority, deemed essential for democracy and social progress. By acknowledging and accommodating individual differences in terms of interests, talents and preferred approaches to learning, LCE has, in theory, the potential to stimulate engagement with schooling, by generating and channeling motivation, thereby raising achievement across all groups of learners. LCE is also expected to prepare all learners for the knowledge economy by creating flexible, lifelong learning practices that can respond to rapid change and the information revolution.

Whatever the potential of LCE, it cannot be implemented within mainstream schooling where teachers and educational organizations are not well prepared or where it does not embed into local systems. And in many lower-income countries where it has been an import, there have been unintended consequences of the introduction of LCE through policy reform.

Research in the UK has suggested that not all learners are equally equipped to participate in learner-centered lessons, with already advantaged learners being more accustomed to stimulating learning activities and more practiced at expressing themselves (Bernstein 1971). It has also been argued that if it draws primarily on learners' pre-existing understandings, LCE can reduce access to knowledge and skills disadvantaged learners need to flourish (Young 2013). This condition applies to most students in public schools in low and middle-income countries, where the adoption of extreme constructivist approaches that deny the importance of phonological awareness in literacy and the more structured and content-laden teaching of mathematics, literature and science, is considered one of the causes for the extremely high levels of functional illiteracy among school children (Mascolo 2009, Hyslop-Margison and Strobel 2007, Boghossian 2007, Brady and Shankweiler 2013, Goswami and Bryant 1990). In this regard, the successful experience of public schools in Ceará, Brazil, by the adoption of a combination of high expectations, strong involvement of students, teachers,

principals and structured curriculum in one of the poorest regions of the country, is an important example (Gall 2016).

Despite the challenges, it is striking how successful LCE has been in alternative schools outside of the mainstream, such as those that follow the Montessori model, and in some public experiences such as the *Escuela Nueva* initiative in Colombia (Psacharopoulos, Rojas, and Velez 1992, Schiefelbein 1992). What is needed is a broader understanding of the learning process and how to approach it. Contents vs. processes are often depicted as opposite and conflicting education ideologies, but can best be considered two indispensable faces of any successful education system.

A synthesis of hundreds of meta-analyses of research related to student achievement confirms that education works best when teachers have explicit goals and high expectations about what the students should and can learn, including the necessary fluency in reading, writing and mathematical reasoning, which can only be obtained through practice; when the students are actively engaged in the education process; and when teaching is aimed at three equally important “worlds of achievement”. These ‘three worlds’ are: “surface knowledge of the physical world, the thinking strategies and deeper understanding of the subjective world, and the ways in which students construct knowledge and reality for themselves as a consequence of this surface and deep knowing and understanding” (Hattie 2008, p. 26).

Policymakers and teachers can embrace the potential of student-centered and critical education to uphold rights, encourage critical thinking and democratic exercise, and support the development of love for learning. However, it is essential that educational reform does not impose individualistic approaches where more collectivist ways of working are more culturally valued and have been educationally successful. Cultural awareness, in turn, should not be used to condone pedagogical practices that violate rights, such as the use of corporal punishment, or perpetuate or create inequalities, such as excluding girls and students with less cultural capital.

3.2 The curriculum

A significant part of the current debates on the curriculum relates to decisions by governments to establish national mandatory curricula, mostly for primary and secondary education, but in some cases including also vocational and higher education. Such curricula describe the subjects and themes that are considered the basis for the individual and social

competencies required for twenty-first century life and progress (Rotherham and Willingham 2010, Trilling and Fadel 2009).

National curricula set out the knowledge that learners are expected to command, define the skills they should acquire and sometimes the values that are intended to be inculcated. The level of detail varies among countries, ranging from minute listing of ‘facts’ to be covered and learned and competencies to be attained, to very loose guidelines within which schools and teachers make some of the most important decisions, allowing for differentiation for and by individual learners based on their needs and interests. When the national curriculum is tightly framed, it is also common to have state-prescribed textbooks that buttress this control over content.

The core curriculum

Despite the large national differences, it is possible to talk about an emergent global curriculum, which is being implemented worldwide by imitation or the influence of international organizations and technical assistance. In 2006, the European Community proposed a framework of eight *Key Competences for Lifelong Learning* that included (1) communication in the mother tongue; (2) Communication in foreign languages; (3) Mathematical competence and basic competences in science and technology; (4) Digital competence; (5) Learning to learn; (6) Social and civic competences; (7) Sense of initiative and entrepreneurship; and (8) Cultural awareness and expression (Halász and Michel 2011). In 2012 it created the *European Qualifications Framework*, to establish equivalences among the qualification frameworks of the different countries, according to 8 levels, from basic general knowledge to the advanced frontiers of scholarship and research (Bohlinger 2008, Grollmann, Spottl, and Young 2008).

Whereas post World War II international education policies concentrated mostly on basic literacy, currently the global core curriculum includes a much-expanded list of subjects and themes. Chief among them is STEM (science, technology, engineering and mathematics), adjusted per education level to build the required general science and math knowledge and skills. In its expanded form, STEM also includes environmental education, chemistry, physics, and computer sciences (Trilling and Fadel 2009). The global core curriculum may also include citizenship education, such as civic and political skills, studies of international relations and human rights, multiculturalism and tolerance (Cogan and Derricott 2014); and contents related to life-long learning and non-formal education, acknowledging the ever-

changing conditions of global society and the need for continuous education and skilling of the labor force (Jakobi 2009, Tuijnman and Boström 2002). These three general curricular areas – STEM, citizenship and lifelong learning – differ in their worldwide appeal. STEM is the most internationally standardized curricular area, whereas citizenship and lifelong subjects are treated with greater sensitivity to local traditions. And still, overall, all three curricular areas are included in international policy recommendations regarding education and progress.

Much discourse around curriculum reform is couched in terms of preparing students for economic productivity, whether that means learning ‘the basics’ of literacy and numeracy, studying vocational subjects as preparation for specific jobs, or focusing on the so-called twenty-first century skills. The nature of civics as a subject area or cross-curricular theme – for example whether it is limited to knowledge about governmental structures and prescriptions about obedient citizens, or through critical approaches that question inequalities and power – shapes understandings of the possibilities and limits of democratic political and civic participation. The curriculum has the potential to contribute to the redistribution of opportunity by debunking myths of in-group superiority; equally, it can reinforce social stratification when different curricula are offered to different groups of students and those groups align with preexisting privilege. Textbooks and other curricular resources can communicate messages to students that build or undermine their confidence in terms of what they can achieve. While the curriculum can potentially support equity by equalizing entitlement, the use of imposed state curricula to oppress citizens in totalitarian or racist regimes is also well-documented.

Whatever the explicit learning outcomes might be, the contents of teaching and learning also have an implicit dimension, known as the hidden curriculum, which conveys strong but tacit messages. For example, the ways that women are portrayed in textbooks – the jobs they do, the ways they communicate, the clothes they wear, who is loved and who is not – set out a normative framework that has deep effects on the student’s own identities and understandings of what to expect from others, even if the official line advocates equality for women as a learning goal; likewise, school textbooks carry implicit cultural norms regarding tolerance, rights, and equity (Meyer, Bromley, and Ramirez 2010).

3.3 The assessment of learning

The implementation of national or core standards in the curricula requires external assessments that are used to establish benchmarks, often linked to international assessments such as OECD's PISA and TIMMS, to identify underperforming sectors or schools, the factors that may explain the differences, and to guide policies aimed at improving the quality of education. This trend has been criticized as being too intrusive and threatening to the autonomy of schools and the teaching profession. Other controversies concern the role of formative and summative assessment, high or low stakes testing, the relationship of assessment to motivation, and the distinction between intrinsic and extrinsic motivation. The notion that the focus on outcomes and assessment would, through sanctions and material rewards, change practices in education, is opposed by more professionally oriented approaches, that focus on the improvement of the processes. The focus of these assessment on core competencies such as language, mathematics and STEM is criticized as leading to the neglect of other dimensions of education such as the humanities, the social sciences and civic education, and of replacing education in a broad sense to teaching to the tests, which in fact may occur (Ravitch 2016, Schwartzman 2013).

To avoid these risks, the Finnish National Core Curriculum, implemented since 2016, combines strong standards with local autonomy and flexibility. A key factor is the presence of a highly qualified teaching profession, which is often missing in lower-income countries and regions, where the adoption of a combination of explicit standards, the provision of structured teaching materials and accountability of schools and teachers seems to work best (Bruns, Filmer, and Patrinos 2011).

4 Governance and public policy

Public policies seek to steer the educational processes happening in the classroom by, for example, regulating the training and employment conditions of teachers, establishing standards and external evaluation procedures, providing moneys to finance buildings and salaries as well as many other things. Policy-makers shape the governance and institutional set-up of education by defining the variety of educational pathways, the conditions of access and the involvement of stakeholders such as teacher unions and parents in governance. Educational policy-making does not play out in a political vacuum: Decisions about

governance are often contested between different actors. Therefore, the mobilization of public support for education policies is a critical factor.

4.1 Public support in education: differences and benefits

In most societies, there is strong consensus about the promises of education to contribute to social progress. Studies of election programs in Western Europe and public opinion pools in Asia, Africa and Latin America show that no political parties openly oppose the expansion of education opportunities, and education tends to be the most popular policy program, along with health care (Jakobi 2011, Kosack 2014, Busemeyer, Lergetporer, and Woessmann 2017, World Values Survey Association 2014)

The apparent widespread support for public education contrasts with the fact that, in many countries, persistent educational inequalities are still unresolved. Furthermore, levels of public investment in education and efforts to expand enrolment and educational opportunities are often below expectations. For instance, in the OECD countries, public spending on education has been more negatively affected by fiscal pressures related to austerity than spending on other social policy programs (Breunig and Busemeyer 2012, Streeck and Mertens 2011).

There are two potential explanations for why the gap between aspirations and actual policy-making might be larger in education compared to other sectors. First, public support for education might be less robust than assumed. Expanding educational opportunities creates benefits in the long rather than the short term, both for individuals and for society. The long-term maturation of educational investments stands in contrast to the short-term benefits of many other social policies such as health care, social transfer programs and old age pensions (Busemeyer et al. 2017). Second, political parties might agree on the need to expand education in general, but, when it comes to the details, education is a highly-contested policy area. Conservative and liberal parties tend to support education policies that limit the role of the state in financing and provision of education, while encouraging the involvement of non-state actors. Left-wing parties, in contrast, are more in favor of a strong role for the central state.

The institutional design and capacity of education systems vary dramatically among countries, levels of government and sectors. Political conflicts about the institutional design

or the governance of education systems are related to underlying material interests of those affected (Ansell 2010, Dobbins and Busemeyer 2015, Iversen and Stephens 2008). Historical conflicts about the shape of education systems have strong implications for present governance, since, once established, institutions create powerful path dependency effects, constraining the leeway for large-scale changes (Pierson 1993, Thelen 1999). The feedback effects of established institutions affect strategies, preferences and power resources of individual and collective actors. Once policy choices for the design of education systems have been made at critical junctures, large-scale change is unlikely thereafter (Dobbins and Busemeyer 2015).

Ideally, democracy, education and economic development can positively reinforce each other, with education promoting both citizenship and economic skills, which promote the further development of democratic structures. These in turn can ensure a continued opening of access to higher levels of education (Ansell 2010, Ansell 2008). But there is no deterministic association between the institutional structure of education and economic development. Western countries with similar levels of economic development can have hugely different institutional arrangements for their education: more or less centralized, with differentiation among academic and vocational tracks in secondary and higher education and unified or diversified higher education systems, which are often more related to historical paths than to recent policy options.

Countries differ regarding how much they invest in education and how they distribute funding across the different sectors. However, there is no apparent association between the total level of investment on education and educational performance (Castles 2013). In addition, there is significant cross-national variation in the division between public and private sources of funding (Wolf 2009, Wolf and Zohlnhöfer 2009) which mostly include tuition and school fees. There are indications that very high tuition fees effectively block students from low-income backgrounds from participating in higher education (Mettler 2014). Furthermore, high levels of private spending can also have feedback effects on citizens' expectations vis-à-vis the welfare state: When individuals have invested a considerable amount of money in acquiring their education, they are less likely to support high levels of taxation and redistribution, since this would lower the returns on their educational investments (Busemeyer 2013).

4.2 Decentralization in the provision of education

Another important dimension in the governance of education is how different stakeholders are included in decision-making. In some countries, decision-making is centralized in the hands of governmental bureaucrats, while in others, different stakeholders are involved, e.g. parents and students, in the running of local schools, as well as representatives of trade unions and employers' association in the administration of vocational training schemes.

Since the 1980s, many education systems have undergone a process of decentralization in the provision of education. Decentralization of education governance means that decisions over management, financing, curriculum design and personnel are delegated to regional and local governments as well as to schools and school districts. The rationale is that decentralization allows for greater involvement of local stakeholders, parents, teachers and students, in designing the pedagogical content of the curriculum, stimulating good performance and in promoting their local embeddedness.

Even though decentralization is a powerful international trend, national contexts influence how it plays out in different countries. In the US and the United Kingdom, the governance of education was already decentralized before the 2000s, with many powers transferred to local education authorities or school districts. In this context, further decentralization amounts to the delegation of responsibilities to individual schools that are independent from the local educational authorities (e.g., charter schools in the US or academies in England). In other cases, for instance Germany, decentralization implied the delegation of autonomy to individual schools within existing governance structures, i.e. from the *Land* to the school level. In Sweden, far-reaching reforms in the 1990s paved the way for the emergence of “independent schools”, which are run by private providers, though financed with public moneys (Klitgaard 2008). In some cases, decentralization is accompanied and conditioned by a parallel trend towards privatization (Gingrich 2011). Examples are African countries, Brazil, India and the Russian Republic (Schwartzman 2015). In these places, private households were increasingly willing and able to pay for education, while state institutions often lack the fiscal and administrative capacities to meet this increasing demand both from households and employers. Hence, private institutions increasingly play an important role in filling this gap.

4.3 The regulation of private education

The traditional structures of formal public education are being challenged by new trends that blur the distinctions between public and private education and create new divisions and structuring within education. Private formal education has always coexisted with the public sector in most countries, managed by religious, philanthropic or communitarian associations, and supported in whole or in part with public funds, as with the Catholic schools in Canada and Ireland, the Catholic University in Chile and the Madrassa schools in many Muslim-majority countries (Levy 1986, Levy 2006). The new trends include the growth of a large for-profit private education industry, the move to replace public by charter schools, the introduction of student vouchers and loans instead of direct subsidies to public schools, the charging of tuition in public schools and universities, and the adoption of business-like practices in management. In low-income countries, when public schools are failing because of governance problems related to mismanagement, corruption and lack of accountability, private schools may be considered as an attractive alternative, delivering better teaching and achieving better learning outcomes at lower costs (Ashley et al. 2014). In higher education, private education fills the niches created by failures of the public sector, either by improving access to low-cost, barebones professional qualifications for students who cannot access the best elite universities, or, on the contrary, providing elite education when the public sector is bloated, inefficient and politicized.

These issues are often debated in strong ideological terms, as if they were all part of the same package, but need to be assessed in terms of their different impact on equity, the quality and relevance of education provision for the broad purposes of education. Not surprisingly, the evidence is contradictory, depending very much on the context and the way these policies are implemented (Ashley et al. 2014, Angrist et al. 2002, Somers, McEwan, and Willms 2004, McEwan and Carnoy 2000, Howell and Peterson 2006, Elacqua 2015). Education is not an exclusive task of public institutions and cannot be considered a service business like any other: it is the role of public governance to seek a proper balance for each context, looking for the best mix that enhance the goals of relevant content, equity, the enhancement of civic values and economic productivity.

4.4 Research-informed policy-making

Public policies in education, healthcare and welfare are being increasingly informed by research-based evidence, which is promoted as providing a solid and more rational – namely, professional and value-neutral – basis for decision-making on matters of supervision, control, capacity, efficiency, operations and structure (Drori and Meyer 2006, Espeland and Sauder 2007). The assumption is that partisan and ideological conflicts are best addressed by delegating decisions to well-informed experts. The problem of distinguishing scientific evidence from other kinds of knowledge and information has been currently seemingly resolved with the adoption of a ‘gold standard’ of randomly controlled trials or highly sophisticated quasi-experimental econometric methodology. However, the model of evidence-based or evidence-informed policy is still very sparsely understood and controversial (Lassnigg 2012). Applied to education, it is heavily biased towards certain aspects and understandings of the education field; i.e. it has primarily looked at and introduced practices of assessment (such as measurement of education outcomes, in terms of comparative performance) and of education provision and administrative capacity (such as management of financial and human resources). Facts and certain kinds of evidence are often reified towards value-neutral ‘truths’ at the expense of a proper understanding of the need for theory and concepts to give the ‘facts’ sense and meaning.

The idea of using research knowledge for policy making is an old one and has undergone several waves in Western history, being inspired by the enlightenment and, in the US, by the empirical turn to evaluation and operations research in the 1960s driven by the US *Great Society* programs (Wells and Roda 2016). The more recent turn towards ‘evidence-based-policy’ in the 2000s is more specifically inspired by ideas of the knowledge society and a better use of research based knowledge, as in medicine. Globally, most evident is the policy fascination with internationally comparative testing, such as PISA and TIMSS, under the assumption that curricula and student achievements are indeed universal and comparable (Kamens and McNeely 2009, Meyer and Benavot 2013, Crossley 2014, Lingard et al. 2015). The rise of this international assessment and accountability regime has encouraged the diffusion of practices for the assessment of education also at the national and sub-national levels, bringing the mode of “governing by numbers” to all world regions (Grek 2009) and many countries (Sung and Kang 2012, Feniger, Livneh, and Yogev 2012). A softer version is

to give priority to “evidence-informed’ policies, rather than to “evidence-based’ (Burns and Schuller 2007).

The shift towards research-based or research-informed policy can lead to changes in the main actors responsible for policy implementation, since government agencies usually lack the extensive research capability required to substantiate policy-making and may need to outsource it to outside experts and think-tanks (Sellar and Lingard 2013). However, major policy cannot and should not be delegated to technocratic committees as they have distributive and normative implications that can only be decided in democratically elected decision-making bodies. While few would doubt that policy decisions should be informed by research and evidence as far as possible, it is also important to be aware of its conceptual and political limitations, which are often neglected by the rhetoric of technocratic discourse. Education is a field that is heavily driven by diverse ideological and political influences which cannot be bridged by ‘facts’ but only by careful and serious discourses that secure deliberate judgement, and a balancing between the basic actors of the state, the private sector, parents/students and professionals (Gutmann and Ben-Porath 2015).

Finally, there is no guarantee that policy solutions proposed by experts and researchers will automatically be supported by the public. In fact, there are many cases where this is not the case. For example, even though empirical educational research has produced robust evidence that early tracking of students onto separate academic and vocational tracks in secondary education enhances educational inequality, reforming school structures on the secondary level has been very contentious politically in many countries (Dobbins and Busemeyer 2015)). Thus, to advance educational reforms promoting social progress, it is not sufficient to identify good policy solutions, but also to ensure that these policies will be supported by public and influential stakeholders.

4.5 Global governance

Education is formally enshrined in numerous international treaties as a human right guaranteed to all, and policies are set – nationally, internationally and transnationally – in accordance with this spirit. In Europe, the Bologna process, which started out as an effort of international coordination in higher education governance, has contributed to the establishment of a transnational governance framework based on voluntary cooperation between governments. This framework achieves some sort of coordination in higher

education policy, such as the introduction of Bachelor and Master degrees throughout Europe and the establishment of common quality management procedures, while also respecting national peculiarities. Hence, it is a good example of how complex governance arrangements in the global era are both necessary and possible (Voegtler, Knill, and Dobbins 2011).

Education worldwide is promoted by a transnational advocacy network, composed of both intergovernmental and transnational nongovernmental organizations. This diverse set of organizations, which have proliferated in the last decades, has been instrumental in formulating transnational objectives, most notably the Global Campaign for Education and the Education for All agenda, as well as placing education as a pinnacle of the Millennium Development and Sustainable Development Goals. While intergovernmental organizations affect national education agendas through the activation of inter-state treaties, most other transnational organizations influence education agendas through “soft law” mechanisms, for example by setting standards in the form of comparative assessments (Kamens and McNeely 2009, Meyer and Benavot 2013). This international and transnational education governance intersects with national and sub-national education policy-making in numerous ways and influences its trajectory. They establish what is taken to be “best practice”, defining universal standards for curriculum, pedagogy, evaluation and the like. Global organizations have imprinted curricula worldwide by introducing discourses of social sciences (Wong 1991), environmentalism (Bromley, Meyer, and Ramirez 2011) and human rights (Suárez 2007) to textbooks in schools worldwide and by promoting programs for girls’ education (Vaughan 2013) and lifelong learning (Jakobi 2009). They also drove the rapid institutionalization of universal mass schooling (Boli, Ramirez, and Meyer 1985, Meyer, Ramirez, and Soysal 1992) and of higher education (Schofer and Meyer 2005), particularly in poorer countries with weaker national polities (McNeely 1995, Steiner-Khamsi and Stolpe 2006, Vaughan 2013). And still, the worldwide isomorphism that resulted from the decades of policy borrowing and lending has nevertheless preserved cross-national differences in education capacities and outcomes (Baker and LeTendre 2005).

Whereas global and cross-national education policies focused until the 1980s on mass schooling and, with the advent of the global knowledge economy, also on higher education and innovation, the focus today is on lifelong learning. The orientation towards education as a continuous, and often also self-motivated, learning and skilling is spurred by the rapid changes of the global economy and the labor force. Such changes include the longevity of

individuals, which extends the employability of working adults; they also introduce great uncertainty as to the competencies that are required for future gainful and productive employment. These uncertainties, and the “over the horizon” planning that they impose, call not only for promotion of continuous learning but also for changes in contents of education. Indeed, contemporary education policies globally and cross-nationally advocate a paradigm shift in pedagogy – towards flexible and non-formal education, towards digital literacy, and towards agentic learners. This global governance regime regarding lifelong and lifewide learning is formalized in such intergovernmental initiatives as the 2010 *Belém Framework for Action*, coordinated by such intergovernmental programs as the *UNESCO Institute for Lifelong Learning*, and advocated by the European coalition of nongovernmental organizations known as *The Lifelong Learning Platform* (formerly, EUCIS-LLL).

5 Moving forward: bolstering the contribution of education to social progress

This final section presents the main actions needed to allow education to fulfill its promise to promote social progress considering the four purposes of education. On a global level for moving policy forward, we recommend a balanced approach to educational reform including teacher education by putting more emphasis on the civic and humanistic purposes. More research informed policy is required taking into account different methodological approaches focusing on all four purposes of education – beyond PISA and university rankings – that combine global and local research perspectives. Concerning governance structures, we recommend that they are flexible, participatory, and accountable considering the political and social context.

In the following we present six specific recommendations bolstering the contribution of education to social progress and coping with 21st century challenges.

5.1 Implementing the Sustainable Development Goals

One key area of international debate revolves around the development and implementation of initiatives and agendas such as Education for All and the Millennium Development Goals. It has been frequently argued that international efforts have focused far too narrowly on increasing access to formal education, without attending to the quality and contents of learning taking place in schools. Another criticism is that international initiatives to expand and improve education may tend to rely on a ‘Western’ view of what constitutes ‘development’. Authors such as Amartya Sen, Martha Nussbaum, Arturo Escobar, Robert

Chambers and James Ferguson have argued for a range of alternative conceptualizations of the term, capable of providing space for indigenous and local knowledges; diverse understandings of what constitutes a ‘good life’; and acknowledgement of the effects of unequal global relationships (Sen 1999, Hulme 2007, Alkire 2005). This shift in academic discourse has also run parallel to a shift in international development policy, which is increasingly moving away from an idea of ‘development’ being organized *for* the Global South *by* actors in the Global North (Skinner, Blum, and Bourn 2013).

Notwithstanding the validity of many criticisms, the nature of globalization demands that educational programs in all countries prepare young people to understand global relationships and concerns, cope with complex problems and live with rapid change and uncertainty. Insufficient recognition of the importance of these issues, undermines international efforts to engage all citizens around the world with developmental processes and debates in providing quality education to all.

The new agenda of *Sustainable Development Goals for 2030* calls for a new cooperative paradigm based on the concept of “*full global partnership*” and the principle of “*no one will be left behind*.” The scale and scope of the ambition requires particularly strong partnerships at every level with young people, who are already engaged in making the goals a reality (United Nations 2016).

The stated Sustainable Goal for education is to ‘*ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*.’ This goal greatly expands the ambitions of the previous agendas in scope, geographical coverage and policy focus: from access to primary education to quality learning opportunities at all levels of education in a lifelong perspective; from low-income and conflict-affected areas to a universal agenda applicable to all countries; from formal education to a concern for equitable access to post-basic education and training for youth and adults through equitable access to appropriate learning opportunities; and a strong focus on the relevance of learning outcomes for work and citizenship in a global and interconnected world. The knowledge, skills, values and attitudes required by citizens should be acquired through education for sustainable development and global citizenship education, which includes peace and human rights education, as well as intercultural education and education for international understanding (UNESCO 2016).

Implementing these goals at country level implies an effort to align national policies and plans to the targets and focus areas reflected in the 2030 agenda for sustainable development.

UNESCO has started a series of regional meetings to build a common understanding of the Sustainable Development Goals for education and to set the foundation for supporting its implementation. However, international agreements reached at international conferences do not translate easily into actual policies by individual countries or the international community, since it depends more on internal conditions of the countries than on their commitment to the goals.

5.2 Expanding access and improving the quality of early childhood education

Numerous studies demonstrate that early childhood education brings a wide range of benefits, both social and economic: better child well-being and learning outcomes; more equitable outcomes and a reduction in poverty; increased intergenerational social mobility; greater female labor market participation and gender equality; decreased fertility rates; and better social and economic development for society at large (OECD, 2006; Campbell et al., 2002). The health, wellbeing and economic benefits are particularly strong in lower-income countries (Unicef 2007).

However, not only the length of attendance matters, but even more so the quality (Sheridan 2007, Espinosa 2002, Tietze 2010, Britto, Yoshikawa, and Boller 2011). In the short term, a good supportive environment contributes to the child's linguistic-cognitive development. In the long run, it leads to better final school degrees, higher income and lower rates of criminality. High-quality preschool education leads to better cognitive, language and math performance, broader scholastic abilities and the ability to cope with everyday situations. Children from disadvantaged families and migrant backgrounds who attend high-quality early education have reduced rates of grade retention in their study life. However, if the subsequent school has low quality, the positive effects of high quality preschool education is reduced (Campbell et al. 2002).

As money invested in early childhood development and education can yield significant public returns, governments are increasingly working to assist families and support children (Gertler et al. 2013). Between 1998 and 2011, public expenditure on young children in the form of childcare and preschool increased 55% on average across OECD countries. However, there are large differences in the percentage of the GDP that countries spent on childcare and preschool. Even in the OECD countries, preschool places for very young children are lacking (OECD 2015). Furthermore, the quality of childcare and preschool education is very mixed.

For moving forward the contribution of education to social progress expanded access to early childhood education is needed and as well as improvement in its quality.

5.3 Improving the quality of schools

Despite the large differences among countries and cultural settings, there is a strong consensus on what makes education institutions to perform well and meet their expected goals, in three broad quality areas: *quality of processes*, the learners' direct interactions with his or her group, with the educator, and with surrounding; *quality of structures*, institutional characteristics such as group size, student-teacher ratio, teacher qualifications and spatial and material conditions; and *quality of orientation*, curriculum, institutional-specific concept, educational approach, staff goals and values. Sustainably successful schools need to combine these as they are highly related. This classification scheme of quality is primarily used in research on early childhood education (Tietze, Roßbach, and Grenner 2005) but also applies to general education (Scheerens 2000).

Research on the quality of schools tends to deal mostly with the effectiveness and the quality of school management, and the findings of a vast literature can be summarized in six dimensions: (Bonsen and Bos 2010, Scheerens, Glas, and Thomas 2003): (1) Achievement orientation: high but appropriate expectations for both teachers and students provide a positive stimulus for the school's pedagogical work. (2) Well-structured learning atmosphere: students learn better and take responsibility for themselves in an environment where everybody feels valued and secured. This includes a positive school climate among students as well as between students, teachers and the teaching staff. (3) Professional cooperation among teachers: there should be broad consensus among the teaching staff in terms of pedagogical goals; teachers should work together in formulating goals and in planning and developing their classroom instruction. (4) Pedagogical leadership: The school's leadership should go beyond purely administrative matters. The responsibilities of school leaders include supporting, evaluating and developing teaching quality; goal-setting, assessment and accountability; strategic financial and human resource management; and collaborating with other schools. (5) Quality of the enacted curriculum: schools need to ensure alignment between the intended, enacted and received curriculum. This requires school-level reflection regarding its pedagogical work. (6) Evaluation focus: Evaluation is important, and systematic monitoring of student performance, feedback on instruction and internal as well as external evaluations need to take place at the institutional level.

Effective schools are *results-oriented, output-oriented, and competency-oriented*, and educators and school leaders are required to define learning goals, take targeted measures to achieve these goals, measure and assess whether and to what extent goals have been achieved, derive new measures as a consequence of this, initiate and conduct internal evaluations (i.e. effectiveness analyses), and handle and make use of the results of external evaluations. (Schober et al. 2012). Consequently, investment should be made in high-quality training for teachers and leaders with differentiated quality assurance arrangements providing a multitude of comprehensive learning opportunities (Ingvarson et al., 2013).

5.4 Enhancing the roles of educators

There is high consensus worldwide about the crucial role of teachers for reaching the four purposes of education. Teachers are not just carriers of knowledge and information. They have a significant impact on children's quality of life – including their relationships with peers and adults, and their dispositions towards learning and life more generally. They are role models and conveyors of implicit values and modes of behavior, which cannot be simply codified in books or transmitted through new technologies (Sachs 2003).

Not all teachers are effective, not all teachers are experts, and not all teachers have powerful effects on students (Hattie 2008, Hanushek and Rivkin 2006, Rivkin, Hanushek, and Kain 2005). In the most successful education systems, teaching is a prestigious and well-paid profession, and teachers are recruited among the best educated students. In others, particularly in low and middle-income countries, teaching does not attract the most talented. In these contexts, teaching education institutions tend to be also of low prestige and less endowed than other higher education institutions, and teachers are often not properly prepared to deal with the high expectations and often difficult tasks of providing good-quality education for children coming from poor socioeconomic environments.

A common reaction, well-documented in Latin America and elsewhere, is that teachers, particularly in the public sector, get organized in trade unions and political movements which allow them to assure some benefits in terms of salary, job stability and working conditions, but oppose the establishment of external standards and assessments, placing the responsibility for poor outcomes on the general conditions of the population or the lack of support from their governments (Bastick 2000, Sachs 2003, Vaillant 2004, Murillo et al. 2002, Liang 2000). In this situation, in countries like Mexico and Brazil, which have some of the worst

results in international assessments such as PISA, efforts to reform and improve public education alternate between entering in confrontation with the teachers' unions, as in Mexico, or attending their demands without the corresponding responsibilities, as in Brazil. In these situations, many families that can pay prefer to put their children in private schools, which often can recruit the best teachers, further depressing the quality of the public sector. In other countries such as Finland, teacher unions and/or professional organizations have become important supporters and drivers of progressive educational reform. Hence, it is important to design governance arrangements in such a way as to ensure that stakeholders engage in collective problem-solving rather than zero-sum bargaining for particularistic benefits.

5.5 Making higher and vocational education more inclusive and socially relevant

Access and quality issues in general education in low and middle-income countries, led governments and international organizations to give priority to investments on primary education. This view that was supported by studies, since the 1970s, showing that the rates of return were higher at this level than for higher education (Psacharopoulos and Hinchliffe 1973), often perceived as a diversion of public money to the benefit of small elites.

This understanding has changed since the year 2000 with the publication, by an international task-force convened by UNESCO and the World Bank, of a report which stressed the importance of higher education. The report questioned the use of rates of return to justify existing education priorities, arguing that they were inadequate to capture the broad social and cultural impact of higher education, and also its role in innovation (The Task Force on Higher Education and Society 2000). The task force argued that higher education was essential to provide increasing numbers of students, especially those from disadvantaged backgrounds, with specialized skills; produce a body of students with a general education that encourages flexibility and innovation; teach students not just what is currently known, but also how to keep their knowledge up to date, and increase the amount and quality of in-country research.

To fulfill these purposes, higher education would need to develop a set of core qualities, including: sufficient autonomy, with governments providing clear supervision, while avoiding day-to-day micro-management; explicit differentiation, allowing institutions to play to their strengths and serve different needs, while competing for funding, faculty, and students; cooperation as well as competition; and increased openness, encouraging higher

education institutions to develop knowledge and revenue sharing links with business and to deepen dialogue with society, which would lead to stronger democracy and more resilient nation states.

This broad view of the importance of higher education is shared by scholars and significant sectors of the higher education communities in the United States and Europe, who are concerned with the trend to give extreme priority to the role of higher education institutions as agencies for manpower training and technological innovation, to the detriment of the classical values of academic quality, collegiality, autonomy and intellectual freedom, which were the basis for the development of the best university traditions in many countries. Studying the new entrepreneurial universities, Burton C. Clark finds that, at their best, they provide “new foundations for the rebuilding of internal collegiality and external autonomy. It finds ways to integrate its many disparate parts around the assertion of a distinctive character” (Clark 2001 p. 23). The same need to rebuild its core foundations occurs in Europe, where “the University has had to re-think its rationale, identity and foundations, its ethos, codes of behavior and primary allegiances and loyalties. There has been a need to explain and justify foundational institutional principles and rules and, for example, to give policy makers and citizens good reasons for accepting university autonomy and individual academic freedom” (Gornitzka et al. 2007 p. 184).

Besides higher education, scholars and policy-makers should pay more attention to the potential of vocational as an alternative to academic higher education. Both in the OECD world as well as in lower-income countries and transition economies, VET can promote social inclusion and labor market participation for youth who do not make it to college or university. However, maximizing the potential of VET hinges on several conditions: VET needs a significant degree of commitment both from the public sector as well as from employers to become an attractive choice for youth. It also needs to be well-connected to pathways towards higher and further education to avoid becoming a ‘dead end’ for the ambitious.

5.6 Fulfilling the promises of digital technologies

The diffusion of microcomputers and the Internet in the 1990s was perceived by many as heralding a profound revolution in education. The opportunity to communicate via technology was supposed to mark a massive shift in the experience of teaching and learning,

breaking the schools' walls and freeing students and teachers from the rituals of sequential education and rote learning, to be replaced with individualized education and the ability to have all the world's information at one's fingertips. In 2005, the *Media Lab*, of the Massachusetts Institute of Technology, announced the "One Laptop Per Child" program, which was expected to start with the production of one million computers by 2007, initially priced at one hundred dollars each, and was soon adopted by many governments in low and middle-income countries. In the 2000s, many universities, non-profit organizations and private companies started to roll out "Massive Open Online Courses" (MOOCs) that were supposed to provide opportunities for access to high quality learning opportunities, often for free anywhere in the world and at any time.

Assessments of these first experiences replaced the original enthusiasm with cautious optimism. It was clear, from the onset, that a major obstacle for the dissemination of these technologies in low and middle-income countries was the lack of appropriate communications and support infrastructure, raising concerns about an emerging "digital divide". (Norris 2001, Warschauer 2004, Sorj 2003). A careful analysis of the One Laptop Per Child Program in Peru in 2002 did not find any evidence of impact of the program in school participation or improvement in achievement in language and mathematics, although it did find some improvement in general cognitive abilities (Cristia et al. 2013). An analysis of the links between access to computers and student achievement using data from PISA in 2004 found that, once family background and school characteristics were controlled for, the relationships between student achievement and the availability of computers was negative for home computers and insignificant for school computers (Woessmann and Fuchs 2004). The initial enthusiasm for MOOCS was dampened by the large number of enrolled students who never completed their courses, which is also true for the more traditional distance education programs.

The recent spread of low cost mobile phones, even in poorer regions, softened concerns about the digital divide, though high-quality internet in schools is still a challenge. But the current consensus is that sheer availability of communications hardware does not replace the need for good teaching, proper school environment, effective learning tools and standards.

The earlier priority of providing access is being replaced by efforts to develop science-based software to deliver the required contents to the students in the best possible way and teaching methodologies to turn the technological devices into instruments that engage students with

learning. Instead of individualized, distance learning or unsupervised networking, the current emphasis is on blended learning, which combines digital media with new teaching methodologies in the classroom, attempting to reach a diversity of student needs through a combination of group and individualized work. Personal interaction of students with teachers remain indispensable, but the new technologies can provide even less-qualified teachers with tools and support to improve their performance (Arnett 2016), while students can be guided in their learning process by software that adjusts the lessons to their specific needs.

Two recent reports by the *New Media Consortium*, an international network of experts of education technology, present an updated outline of what to expect from the contribution of technology to education. For primary and secondary education, more important trends are in redesigning learning spaces, rethinking how schools work, the development of collaborative learning, coding as literacy, and making the students creators; and the main challenges are the development of authentic learning experiences and the need to rethink the role of teachers. For higher education, the main trends are the development of blended learning designs and collaborative learning, the redesigning of learning spaces and the growing focus on measuring learning; and the main challenges are improving digital literacy and integrating formal and informal learning (Adams Becker et al. 2017).

In the same vein, the Office of Educational Technology of the US Department of Education lists as central trends the engagement and empowerment of learning through technology, the combination of teaching with technology, the importance of leadership in the new digital context, and assessment of results (US Department of Education 2017). For UNESCO, the main issues related to ICT in education are developments in teacher education, mobile learning, open educational resources, lifelong learning and the development of management information systems to guide education policies (UNESCO 2017).

The new information and communication technologies are not a magic bullet that will replace existing educational institutions and create a new learning world. But they can be powerful instruments to improve the quality and relevance of education and its contribution to social progress, once they grow from the current early stages of experimentation, trial and error into more established and proven practices.

6 References

- Acemoglu, Daron, and David Autor. 2011. "Skills, Tasks and Technologies: Implications for Employment and Earnings." *Handbook of labor economics* 4:1043-1171.
- Adams Becker, S., M. Cummins, A. Davis, A. Freeman, C. Hall Giesinger, and V. Ananthanarayanan. 2017. MC Horizon Report: 2017 Higher Education Edition. Texas: The New Media Consortium.
- Alexander, Robin J. 2001a. "Border crossings: Towards a comparative pedagogy." *Comparative Education* 37 (4):507-523.
- Alexander, Robin J. 2001b. *Culture and pedagogy: International comparisons in primary education*: Blackwell Oxford.
- Alkire, Sabina. 2005. *Valuing freedoms: Sen's capability approach and poverty reduction*: Oxford University Press on Demand.
- Almond, Gabriel Abraham, and Sidney Verba. 1963. *The civic culture; political attitudes and democracy in five nations*. Princeton, N.J.,: Princeton University Press.
- Altbach, Philip G, and J. Salmi. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. Washington DC: World Bank Publications.
- Altbach, Philip G. 1981. *Student politics, perspectives for the eighties*. Metuchen, N.J: Scarecrow Press.
- Altbach, Philip G., and Jorge Balán. 2007. *World Class Worldwide: Transforming Research Universities in Asia and Latin America*. Baltimore: The Johns Hopkins University Press.
- Altbach, Philip G., and Daniel C. Levy, eds. 2005. *Private Higher Education: A Global Revolution*. Rotterdam: Sense Publishers.
- Angrist, Joshua, Eric Bettinger, Erik Bloom, Elizabeth King, and Michael Kremer. 2002. "Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment." *American Economic Review* 92 (5):1535.
- Ansell, Ben W. 2008. "University challenges: Explaining institutional change in higher education." *World politics* 60 (02):189-230.
- Ansell, Ben W. . 2010. *From the Ballot to the Blackboard: The Redistributive Political Economy of Education*. Cambridge: Cambridge University Press.
- Apple, Michael W. 1996. *Cultural politics and education, The John Dewey lecture*. New York: Teachers College Press.
- Arnett, Thomas. 2016. Teaching in the machine age: how innovation can make bad teachers good and good teachers better. Christensen Institute.
- Ashley, Laura Day, Claire Mcloughlin, Monazza Aslam, Jakob Engel, Joseph Wales, Shenila Rawal, Richard Batley, Geeta Kingdon, Susan Nicolai, and P Rose. 2014. "The role and impact of private schools in developing countries." *Rigorous Literature Review*.
- Autor, David H. . 2014. "Skills, education, and the rise of earnings inequality among the "other 99 percent"." *Science* 344 (6186):843-851.

- Baker, David, and Gerald K LeTendre. 2005. *National differences, global similarities: World culture and the future of schooling*: Stanford University Press.
- Barber, Michael, and Mona Mourshed. 2007. How the world's best-performing school systems come out on the top. McKinsey & Company.
- Bastick, Tony. 2000. "Why teacher trainees choose the teaching profession: Comparing trainees in metropolitan and developing countries." *International Review of Education* 46 (3):343-349.
- Becker, Gary Stanley. 1973. *Human capital -A Theoretical and Empirical Analysis, with Special Reference to Education*. 3 ed. Chicago and London: The University of Chicago Press.
- Ben-David, Joseph. 1977. *Centers of learning : Britain, France, Germany, United States : an essay*. New York: McGraw-Hill.
- Benavot, Aaron, and Phyllis Riddle. 1988. "The expansion of primary education, 1870-1940: Trends and Issues." *Sociology of Education*:191-210.
- Benson, Lee, Ira Richard Harkavy, and John L. Puckett. 2007. *Dewey's dream : universities and democracies in an age of education reform : civil society, public schools, and democratic citizenship*. Philadelphia: Temple University Press.
- Bernasconi, Andrés. 2007. "Is there a Latin American model of the university?" *Comparative Education Review* 52 (1):27-52.
- Bernstein, Basil. 1971. *Class, Codes and Control. Volume 1: Theoretical Studies Towards A Sociology of Language*.
- Beyer, Landon E, and Daniel P Liston. 1996. *Curriculum in Conflict: Social Visions, Educational Agendas, and Progressive School Reform*: ERIC.
- Biesta, Gert, Maria De Bie, and Danny Wildemeersch. 2014. *Civic learning, democratic citizenship and the public sphere*: Springer.
- Bloom, D.E., D. Canning, and K. Chan. 2006. *Higher education and economic development in Africa*: World Bank.
- Boghossian, Paul. 2007. *Fear of knowledge: Against relativism and constructivism*: Clarendon Press.
- Bohlinger, Sandra. 2008. "Competences as the Core Element of the European Qualifications Framework." *European journal of vocational training* 42 (1):96-112.
- Boli, John, Francisco O Ramirez, and John W Meyer. 1985. "Explaining the origins and expansion of mass education." *Comparative education review* 29 (2):145-170.
- Bonsen, M., and W. Bos. 2010. "Bildungspsychologie auf der Mesoebene: Die Betrachtung von Bildungsinstitutionen [Educational psychology on the mesolevel: Considering educational institutions]." In *Bildungspsychologie*, edited by C. Spiel, B. Schober, P. Wagner and R. Reimann. Göttingen, Germany: Hogrefe.
- Botticini, Maristella, and Zvi Eckstein. 2012. *The Chosen Few*. Princeton University Press, Princeton, New Jersey.
- Bourdieu, Pierre, and Jean Claude Passeron. 1970. *La reproduction; éléments pour une théorie du système d'enseignement*. [Paris]: éditions de Minuit.

- Bowles, Frank Hamilton, and Herbert Gintis. 1973. *Schooling in Capitalist America*. New York: Basic Books.
- Brady, Susan A, and Donald P Shankweiler. 2013. *Phonological processes in literacy: A tribute to Isabelle Y. Liberman*: Routledge.
- Breunig, Christian, and Marius R Busemeyer. 2012. "Fiscal austerity and the trade-off between public investment and social spending." *Journal of European Public Policy* 19 (6):921-938.
- Brighouse, Harry, and Adam Swift. 2006. "Equality, Priority, and Positional Goods." *Ethics* 116 (3):471-497.
- Britto, Pia Rebello, Hirokazu Yoshikawa, and Kimberly Boller. 2011. "Quality of Early Childhood Development Programs in Global Contexts: Rationale for Investment, Conceptual Framework and Implications for Equity." *Social Policy Report* 25 (2).
- Bromley, Patricia, John W Meyer, and Francisco O Ramirez. 2011. "The worldwide spread of environmental discourse in social studies, history, and civics textbooks, 1970–2008." *Comparative Education Review* 55 (4):517-545.
- Brown, Phillip. 2003. The Opportunity Trap: Education and Employment in a Global Economy. In *Working Paper Series*: School of Social Sciences, Cardiff University.
- Brown, Phillip 2000. "The Globalisation of Positional Competition?" *Sociology* 34 (4):633-653.
- Brunello, Giorgio, and Daniele Checchi. 2007. "Does school tracking affect equality of opportunity? New international evidence." *Economic policy* 22 (52):782-861.
- Brunner, José Joaquín, and Daniel Uribe. 2007. *Mercados universitarios: el nuevo escenario de la educación superior [University markets: the new scenario of higher education]*. Santiago: Ediciones Universidad Diego Portales.
- Bruns, Barbara, Deon Filmer, and Harry Anthony Patrinos. 2011. *Making schools work: New evidence on accountability reforms*: World Bank Publications.
- Burman, Anders. "Damnés Realities and Ontological Disobedience: Notes on the Coloniality of Reality in Higher Education in the Bolivian Andes and Beyond." *Decolonizing the Westernized University* (2016): 71-71.
- Burns, Tracey, and Tom Schuller. 2007. "The Evidence Agenda." In *Evidence in education: linking research and policy*, edited by OECD, 15-32. Paris: OECD.
- Busemeyer, M. R., J. L. Garritzmán, E. Neimanns, and R. Nezi. 2017. "Investing in Education in Europe: Evidence from a Survey of Public Opinion in Eight European Countries." *Journal of European Social Policy* forthcoming.
- Busemeyer, Marius, Philipp Lergetporer, and Ludger Woessmann. 2017. Public Opinion and the Acceptance and Feasibility of Educational Reforms. In *European Expert Network on Economics Education*. Luxembourg: Publications Office of the European Union.
- Busemeyer, Marius R. 2013. "Education funding and individual preferences for redistribution." *European Sociological Review*:jcs085.
- Busemeyer, Marius R, and Kathleen Thelen. 2015. "Non-standard employment and systems of skill formation in European countries." *Non-Standard Employment in Post-Industrial Labour Markets: An Occupational Perspective*:401.

- Campbell, Frances A, Craig T Ramey, Elizabeth Pungello, Joseph Sparling, and Shari Miller-Johnson. 2002. "Early childhood education: Young adult outcomes from the Abecedarian Project." *Applied Developmental Science* 6 (1):42-57.
- Carnoy, Martin. 1978. *Segmented labor markets a review of the theoretical and empirical literature and its implications for educational planning, IIEP working paper*. Paris: UNESCO, International Institute for Educational Planning.
- Castles, Francis G. 2013. "The Real Issue for Future Comparative Policy Research: Does Government Matter?" In *Staatstätigkeiten, Parteien und Demokratie*, 185-204. Springer.
- Clark, Burton R. 2001. "The Entrepreneurial University: New Foundations for Collegiality, Autonomy, and Achievement." *Higher Education Management* 13 (2):9-24.
- Cogan, John, and Ray Derricott. 2014. *Citizenship for the 21st century: An international perspective on education*: Routledge.
- Coleman, James S. 1966. *Equality of educational opportunity*. Washington: US. Department of Health, Education, and Welfare.
- Coleman, James S. 1968. *Equal educational opportunity*. Cambridge, Mass.: Harvard Educational Review.
- Collins, Randall. 1979. *The credential society*. New York: Academic Press.
- Cox, Cristián, Robinson Lira, and Renato Gazmuri. 2009. "Currículos escolares e suas orientações sobre história, sociedade e política: significados para a coesão social na América Latina." In *Políticas Educacionais e Coesão Social - uma agenda latinoamericana*, edited by Simon Schwartzman and Cristian Cox, 229-288. Rio de Janeiro, São Paulo: Elsevier; Instituto Fernando Henrique Cardoso.
- Cristia, Julián P., Pablo Ibararán, Santiago Cueto, Ana Santiago, and Eugenio Severín. 2013. Tecnología y desarrollo en la niñez: Evidencia del programa Una Laptop por Niño [Technology and Child Development: Evidence from the One Laptop per Child Program]. In *IDB Working Papers*. Washington: International Development Program.
- Crossley, Michael. 2014. "Global league tables, big data and the international transfer of educational research modalities." *Comparative Education* 50 (1):15-26.
- Dalton, Russell J, and Christian Welzel. 2014. *The civic culture transformed: from allegiant to assertive citizens*: Cambridge University Press.
- de Oliveira Andreotti, Vanessa, Sharon Stein, Cash Ahenakew, and Dallas Hunt. "Mapping Interpretations of Decolonization in the Context of Higher Education." *Decolonization: Indigeneity, Education & Society* 4, no. 1 (2015).
- Direction générale de l'enseignement scolaire. 2006. Le socle commun de connaissances et de compétences - tout ce qu'il est indispensable de maîtriser à la fin de la secondaire obligatoire. Paris: Ministère Éducation Nationale Enseignement Supérieur Recherche
- Dobbins, Michael, and Marius R Busemeyer. 2015. "Socio-economic institutions, organized interests and partisan politics: the development of vocational education in Denmark and Sweden." *Socio-Economic Review* 13 (2):259-284.

- Drori, Gili S, and John W Meyer. 2006. "Global scientization: an environment for expanded organization." *Drori, G. Meyer, J. and Hwang, H.(eds) Globalization and Organization*:50-68.
- Durkheim, Émile. 1922. *Éducation et Sociologie*. Edited by Jean-Marie Tremblay, *Les Classiques des Sciences Sociales*: Université du Québec à Chicoutimi.
- Elacqua, Gregory. 2015. "Chile: the quality of for-profit schooling." In *Education in South America*, edited by Simon Schwartzman, 221-248. London: Bloomsbury Academic.
- Espeland, Wendy Nelson, and Michael Sauder. 2007. "Rankings and Reactivity: How Public Measures Recreate Social Worlds 1." *American journal of sociology* 113 (1):1-40.
- Espinosa, Linda Marie. 2002. *High-quality preschool: Why we need it and what it looks like*: National Institute for Early Education Research.
- Estevez-Abe, Margarita, Torben Iversen, and David Soskice. 1999. "Social Protection and the Formation of Skills: A Reinterpretation of the Welfare State." 95th American Political Association Meeting, Atlanta.
- Etzkowitz, Henry. 2008. *The triple helix : university-industry-government innovation in action*. New York ; London: Routledge.
- Feniger, Yariv, Idit Livneh, and Abraham Yogev. 2012. "Globalisation and the politics of international tests: the case of Israel." *Comparative Education* 48 (3):323-335.
- Freire, Paulo. 1970. *Pedagogy of the oppressed*. New York: Herder and Herder.
- Froumin, Isak, and Yaroslav Kouzminov. 2015. "Supply and Demand Patterns In Russian Higher Education." In *Higher Education In The Brics Countries:Investigating the pact between higher education and society*, edited by Pundy Pillay, Romulo Pinheiro and Simon Schwartzman. Springer.
- Gall, Norman. 2016. "Shakespeare in Quixeramobim: Ceará goes to school." *Braudel Papers* 49.
- Gawthrop, Richard, and Gerald Strauss. 1984. "Protestantism and literacy in early modern Germany." *Past and Present*:31-55.
- Geiger, Roger L. 1993. *Research and Relevant Knowledge American Research Universities since World War II*: Oxford University Press.
- Geiger, Roger L. 2004. *To advance knowledge: The growth of American research universities, 1900-1940*. New Brunswick: Transaction Publishers. Original edition, Oxford University Press, 1986.
- Gertler, Paul, James Heckman, Rodrigo Pinto, Arianna Zanolini, Christel Vermeerch, Susan Walker, Susan M Chang, and Sally Grantham-McGregor. 2013. "Labor Market Returns to Early Childhood Stimulation: a 20-year Followup to an Experimental Intervention in Jamaica."
- Gibbons, Michael, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, and Martin Trow. 1994. *The new production of knowledge: The dynamics of science and research in contemporary societies*: Sage.
- Gingrich, Jane R. 2011. *Making markets in the welfare state: the politics of varying market reforms*: Cambridge University Press.

- Gornitzka, Åse, Peter Maassen, Johan P. Olsen, and Bjørn Stensake. 2007. "“Europe of Knowledge”: Search for a new pact." In *University Dynamics and European Integration*, edited by P. Maassen and J. P. Olsen, 181-214. Springer.
- Goswami, Usha, and Peter Bryant. 1990. *Phonological skills and learning to read*: Wiley Online Library.
- Green, Andy, John Preston, and J Janmaat. 2006. *Education, equality and social cohesion: A comparative analysis*: Springer.
- Grek, Sotiria. 2009. "Governing by numbers: The PISA ‘effect’ in Europe." *Journal of education policy* 24 (1):23-37.
- Grollmann, Philipp, Georg Spottl, and Michael Young. 2008. "Towards a European qualifications framework: some cautionary observations." *Journal of European Industrial Training* 32 (2/3):128-137.
- Grubb, W. Norton, and Marvin Lazerson. 2004. *The education gospel : the economic power of schooling*. Cambridge, Mass.: Harvard University Press.
- Gutmann, Amy, and Sigal Ben-Porath. 2015. "Democratic Education." *The Encyclopedia of Political Thought*.
- Halász, Gábor, and Alain Michel. 2011. "Key Competences in Europe: interpretation, policy formulation and implementation." *European Journal of Education* 46 (3):289-306.
- Hall, Peter A, and David Soskice. 2001. *Varieties of capitalism: The institutional foundations of comparative advantage*: OUP Oxford.
- Hanna, Nelly. 2007. "Literacy and the ‘great divide’ in the Islamic world, 1300–1800." *Journal of Global History* 2 (02):175-193.
- Hanushek, Eric A. 1986. "The economics of schooling: Production and efficiency in public schools." *Journal of economic literature* 24 (3):1141-1177.
- Hanushek, Eric A, Guido Schwerdt, Simon Wiederhold, and Ludger Woessmann. 2015. "Returns to Skills around the World: Evidence from PIAAC." *European Economic Review* 73:103-130.
- Hanushek, Eric A, and Ludger Wössmann. 2006. "Does Educational Tracking Affect Performance and Inequality? Differences-in-Differences Evidence Across Countries*." *The Economic Journal* 116 (510):C63-C76.
- Hanushek, Eric A., and Steven G. Rivkin. 2006. "Teacher Quality." 2:1051-1078. doi: 10.1016/s1574-0692(06)02018-6.
- Hanushek, Eric A., and Ludger Woessmann. 2012. "Schooling, educational achievement, and the Latin American growth puzzle." *Journal of Development Economics* 99 (2):497-512. doi: 10.1016/j.jdeveco.2012.06.004.
- Harmon, Colm, Hessel Oosterbeek, and Ian Walker. 2003. "The returns to education: Microeconomics." *Journal of economic surveys* 17 (2):115-156.
- Harrison, Lawrence E., and Samuel P. Huntington. 2000. *Culture matters : how values shape human progress*. 1st ed. New York: Basic Books.
- Hattie, John. 2008. *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*: Routledge.

- Hayes, William. 2006. *The progressive education movement : is it still a factor in today's schools?* Lanham, Md.: Rowman & Littlefield Education.
- Heckman, James J. 2006. "Skill Formation and the Economics of Investing in Disadvantaged Children." *Science* (312):1900-1902.
- Heckman, James J., Lance J. Lochner, and Petra E. Todd. 2006. "Earnings Functions, Rates of Return and Treatment Effects: The Mincer Equation and Beyond." In *Handbook of the Economics of Education*, edited by Eric A. Hanushek and Finis Welch, 307-458.
- Hedges, Larry V, Terri D Pigott, Joshua R Polanin, Ann Marie Ryan, Charles Tocci, and Ryan T Williams. 2016. "The Question of School Resources and Student Achievement: A History and Reconsideration." *Review of Research in Education* 40 (1):143-168.
- Heikkinen, Anja, and Lorenz Lassnigg, eds. 2015 *Myths and Brands in Vocational Education*. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Hersch, Joni. 1991. "Education match and job match." *The Review of Economics and Statistics*:140-144.
- Hollis, M. 1982. "Education as a positional good." *Journal of Philosophy of Education* 16 (2):235-244.
- Howell, William G, and Paul E Peterson. 2006. *The education gap: Vouchers and urban schools*: Brookings Institution Press.
- Hulme, David. 2007. "The making of the millennium development goals: human development meets results-based management in an imperfect world."
- Hyslop-Margison, Emery J, and Johannes Strobel. 2007. "Constructivism and education: Misunderstandings and pedagogical implications." *The Teacher Educator* 43 (1):72-86.
- Ingvarson, Lawrence, John Schwille, Maria Teresa Tatto, Glenn Rowley, Ray Peck, eSharon L Senk. *An Analysis of Teacher Education Context, Structure, and Quality-Assurance Arrangements in Teds-M Countries: Findings from the Iea Teacher Education and Development Study in Mathematics (Teds-M)*. ERIC, 2013.
- Iversen, T., and J. D. Stephens. 2008. "Partisan Politics, the Welfare State, and Three Worlds of Human Capital Formation." *Comparative Political Studies* 41 (4-5):600-637. doi: 10.1177/0010414007313117.
- Jakobi, Anja P. 2009. "Global education policy in the making: international organisations and lifelong learning." *Globalisation, Societies and Education* 7 (4):473-487.
- Jakobi, Anja P. 2011. "Political parties and the institutionalization of education: A comparative analysis of party manifestos." *Comparative Education Review* 55 (2):189-209.
- Jaksic, Ivan. 2006. *Andrés Bello: scholarship and nation-building in nineteenth-century Latin America*. Vol. 87: Cambridge University Press.
- Judt, Tony. 2006. *Postwar: A History of Europe Since 1945*: Penguin Books.
- Jussim, Lee, Jacquelynne Eccles, and Stephanie Madon. 1996. "Social perception, social stereotypes, and teacher expectations: Accuracy and the quest for the powerful self-fulfilling prophecy." *Advances in experimental social psychology* 28:281-388.

- Kamens, David H, and Connie L McNeely. 2009. "Globalization and the growth of international educational testing and national assessment." *Comparative Education Review* 54 (1):5-25.
- Kamerman, Sheila B. 2006. A Global History of Early Childhood Education and Care. In *Paper commissioned for the Education for All (EFA) global monitoring report 2007*. Paris: UNESCO.
- Kite, Mary E, Kay Deaux, and Elizabeth L Haines. 2008. "Gender stereotypes." *Psychology of women: A handbook of issues and theories* 2:205-236.
- Klitgaard, Michael Baggesen. 2008. "School vouchers and the new politics of the welfare state." *Governance* 21 (4):479-498.
- Kollmayer, Marlene, Barbara Schober, and Christiane Spiel. 2016. "Gender stereotypes in education: Development, consequences, and interventions." *European Journal of Developmental Psychology*:1-17.
- Kosack, Stephen. 2014. "The logic of pro-poor policymaking: Political entrepreneurship and mass education." *British Journal of Political Science* 44 (02):409-444.
- Lassnigg, Lorenz. 2016. Apprenticeship policies in comparative perspective. ET-structures, employment relationship, export. In *Sociological Series Working Papers*. Vienna: Institute for Advanced Studies.
- Lassnigg, Lorenz 2012. "'Use of Current Best Evidence' – Promises and Illusions, Limitations and Contradictions in the Triangle of Research, Policy and Practice.", in: , Vol. 10, Issue 3, pp. 179-203. ." *International Journal of Training Research* 10 (2):179-203.
- Lassnigg, Lorenz, Jakob Hartl, Martin Unger, and Iris Schwarzenbacher. 2017. "Higher Education Institutions and Knowledge Triangle: Improving the interaction between education, research and innovation."
- Learning Metrics Task Force. 2013. Toward Universal Learning: What Every Child Should Learn. UNESCO Institute for Statistics (Montreal) and Centre for Universal Education at Brookings.
- Lee, Valerie E, and David T Burkam. 2002. *Inequality at the starting gate: Social background differences in achievement as children begin school*: ERIC.
- Lepenies, Wolf. 1988. *Between literature and science: The rise of sociology*. Vol. 10: Cambridge University Press.
- Leslie, Larry L. 1990. *Rates of return as informer of public policy with special reference to World Bank and Third World countries, HIGHER EDUCATION (NETHERLANDS)*.
- Levy, Daniel C. 2006. "The unanticipated explosion: Private higher education's global surge." *Comparative Education Review* 50 (2):217-240.
- Levy, Daniel C. 1981. "Student Politics in Contemporary Latin America." *Canadian Journal of Political Science* 14 (2):353-376.
- Levy, Daniel C. 1986. *Higher education and the state in Latin America : private challenges to public dominance*. Chicago: University of Chicago Press.

- Liang, Xiaoyan. 2000. *Teacher pay in 12 Latin American countries: how does teacher pay compare to other professions?: what determines teacher pay?: who are the teachers?* World Bank, Latin America and the Caribbean Regional Office.
- Lingard, Bob, Wayne Martino, Goli Rezai-Rashti, and Sam Sellar. 2015. *Globalizing educational accountabilities*: Routledge.
- Lubotsky, Darren, and Robert Kaestner. 2016. "Do Skills Beget Skills"? Evidence on the effect of kindergarten entrance age on the evolution of cognitive and non-cognitive skill gaps in childhood." *Economics of Education Review* 53:194-206.
- Maassen, Peter, and Bjørn Stensaker. 2011. "The knowledge triangle, European higher education policy logics and policy implications." *Higher Education* 61 (6):757-769.
- Marginson, Simon. 2016. *Higher Education and the common good*. Melbourne: University Publishing Limited.
- Mascolo, Michael F. 2009. "Beyond student-centered and teacher-centered pedagogy: Teaching and learning as guided participation." *Pedagogy and the Human Sciences* 1 (1):3-27.
- Mazzucato, Mariana. 2013. *The entrepreneurial state: Debunking public vs. private sector myths*. London: Anthem.
- McEwan, Patrick J, and Martin Carnoy. 2000. "The effectiveness and efficiency of private schools in Chile's voucher system." *Educational evaluation and policy analysis* 22 (3):213-239.
- McNeely, Connie L. 1995. "Prescribing national education policies: The role of international organizations." *Comparative education review* 39 (4):483-507.
- Mettler, Suzanne. 2014. *Degrees of inequality: How the politics of higher education sabotaged the American dream*: Basic Books.
- Meyer, Heinz-Dieter, and Aaron Benavot. 2013. "PISA, power, and policy: The emergence of global educational governance."
- Meyer, John W, Francisco O Ramirez, and Yasemin Nuhoğlu Soysal. 1992. "World expansion of mass education, 1870-1980." *Sociology of education*:128-149.
- Meyer, John W., Patricia Bromley, and Francisco O. Ramirez. 2010. "Human rights in social science textbooks: Cross-national analyses, 1970–2008." *Sociology of Education* 83 (2):111-134.
- Mincer, Jacob. 1974. *Schooling, experience, and earnings, Human behavior and social institutions*, 2. New York,: National Bureau of Economic Research; distributed by Columbia University Press.
- Montenegro, Claudio E, and Harry A Patrinos. 2014. "Comparable estimates of returns to schooling around the world." *World Bank Policy Research Working Paper* (7020).
- Moretti, Enrico. 2003. Human capital externalities in cities. In *Working Paper*. Cambridge, MA: National Bureau of Economic Research.
- Murillo, Victoria, Mariano Tommasi, Lucas Ronconi, and Juan Sanguinetti. 2002. "The economic effects of unions in Latin America: teachers' unions and education in Argentina."

- Nisbet, Robert A. 1965. *Makers of Modern Social Science: Émile Durkheim*: Prentice Hall.
- Noddings, Nel. 1995. *Philosophy of education*: Westview Press.
- Norris, Pippa. 2001. *Digital divide: Civic engagement, information poverty, and the Internet worldwide*: Cambridge University Press.
- OECD. 2000. *Education at a Glance: OECD indicators*. Paris: OECD.
- OECD. 2015. *Education at a Glance. OECD indicators*. Paris, OECD
- OECD. 2016. *Education at a Glance: OECD indicators*. Paris: OECD.
- Park, Hyunjoon, and Pearl Kyei. 2011. "Literacy gaps by educational attainment: A cross-national analysis." *Social forces; a scientific medium of social study and interpretation* 89 (3):879–904.
- Peterson, Andrew. 2011. "Civic Republicanism and Civic Education: The Education of Citizens." *Palgrave Macmillan*.
- Pfeffer, Fabian T. 2008. "Persistent inequality in educational attainment and its institutional context." *European Sociological Review* 24 (5):543-565.
- Pierson, Paul. 1993. "When effect becomes cause: Policy feedback and political change." *World politics* 45 (04):595-628.
- Porter, Andrew, Jennifer McMaken, Jun Hwang, and Rui Yang. 2011. "Common core standards the new US intended curriculum." *Educational Researcher* 40 (3):103-116.
- Psacharopoulos, George. 1994. "Returns to investment in education: a global update." *World Development* 22 (9):1325-1343.
- Psacharopoulos, George, and Keith Hinchliffe. 1973. *Returns to education An international comparison, Studies on education*. Amsterdam; New York: Elsevier Scientific Pub. Co.
- Psacharopoulos, George, Carlos Rojas, and Eduardo Velez. 1992. *Achievement evaluation of Colombia's Escuela nueva is multigrade the answer?, Policy research working papers*. Washington, DC: Technical Dept. Latin America and the Caribbean Region, World Bank.
- Putnam, Robert D. 2001. *Bowling alone: the collapse and revival of American community*. New York: Touchstone.
- Putnam, Robert D. 2002. *Democracies in flux : the evolution of social capital in contemporary society*. Oxford ; New York: Oxford University Press.
- Ravitch, Diane. 2016. *The death and life of the great American school system: How testing and choice are undermining education*: Basic Books.
- Reese, William J. 2001. "The origins of progressive education." *History of Education Quarterly* 41 (1):1-24.
- Rivkin, Steven G, Eric A Hanushek, and John F Kain. 2005. "Teachers, schools, and academic achievement." *Econometrica* 73 (2):417-458.
- Rosenbaum, James E. 2001. *Beyond college for all : career paths for the forgotten half, American Sociological Association's Rose series in sociology*. New York: Russell Sage Foundation.

- Rotherham, Andrew J, and Daniel T Willingham. 2010. "'21st-Century' Skills." *American Educator* 17.
- Rutter, Michael. 1982. *Fifteen thousand hours: Secondary schools and their effects on children*: Harvard University Press.
- Sachs, Judyth. 2003. *The activist teaching profession*: Open University Press.
- Scarborough, Hollis S. 2009. "Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice." In *Approaching difficulties in literacy development: Assessment, pedagogy, and programmes*, edited by Felicity Fletcher-Campbell, Janet Soler and Gavin Reid, 23-38. Sage.
- Scheerens, J., C. Glas, and S. M. Thomas. 2003. *Educational evaluation, assessment, and monitoring – a systematic approach*. Lisse: Swets & Zeitlinger.
- Scheerens, Jaap. 2000. *Improving school effectiveness*: UNESCO International Institute for Educational Planning.
- Schiefelbein, Ernesto. 1992. *Redefining basic education for Latin America lessons to be learned from the Colombian Escuela Nueva, Fundamentals of educational planning*. Paris: UNESCO, International Institute for Educational Planning.
- Schober, B., J. Klug, M. Finsterwald, P. Wagner, and C. Spiel. 2012. "Ergebnisorientierte Qualitätsentwicklung von Schule: Spezifische Kompetenzen von Lehrkräften, Schulleiterinnen und Schulleitern [Outcome-oriented quality development in schools: Specific competencies of teachers, students and principals]." In *Nationaler Bildungsbericht Österreich 2012, Band 2: Fokussierte Analysen bildungspolitischer*, edited by B. Herzog-Punzenberger. Graz, Austria: Leykam.
- Schofer, Evan, and John W Meyer. 2005. "The worldwide expansion of higher education in the twentieth century." *American sociological review* 70 (6):898-920.
- Schofield, Janet Ward. 1995. "Improving Intergroup Relations among Students."
- Schultz, Theodore William. 1970. *Investment in human capital; the role of education and of research*. New York,: Free Press.
- Schwartz, Seth J, Byron L Zamboanga, and Lorna Hernandez Jarvis. 2007. "Ethnic identity and acculturation in Hispanic early adolescents: Mediated relationships to academic grades, prosocial behaviors, and externalizing symptoms." *Cultural Diversity and Ethnic Minority Psychology* 13 (4):364.
- Schwartzman, Simon. 2011. "Academic Drift in Brazilian Education." *Pensamiento Educativo. Revista de Investigación Educativa Latinoamericana* 48 (1):14-26.
- Schwartzman, Simon. 2013. "Uses and abuses of education assessment in Brazil." *Prospects*:1-20. doi: 10.1007/s11125-013-9275-9.
- Schwartzman, Simon. 2015. "Demand and Policies for Higher Education." In *Higher Education in the BRICS Countries - Investigating the Pact between Higher Education and Society*, edited by Simon Schwartzman, Rómulo Pinheiro and Pundy Pillay, 13-42. Dordrecht: Springer.
- Schweisfurth, Michele. 2013. *Learner-centred education in international perspective: Whose pedagogy for whose development?:* Routledge.

- Sellar, Sam, and Bob Lingard. 2013. "The OECD and global governance in education." *Journal of Education Policy* 28 (5):710-725.
- Sen, Amartya. 1999. "Commodities and capabilities." *OUP Catalogue*.
- Shavit, Yossi, and Walter Muller. 2000. "Vocational secondary education - Where diversion and where safety net?" *European Societies* 2 (1): 29-50.
- Sheridan, Sonja. 2007. "Dimensions of pedagogical quality in preschool." *International Journal of Early Years Education* 15 (2):197-217.
- Sianesi, Barbara, and John Van Reenen. 2003. "The returns to education: Macroeconomics." *Journal of economic surveys* 17 (2):157-200.
- Singh, Madhu, Tom Schuller, and David Watson. 2010. *Learning Through Life. Inquiry into the Future for Lifelong Learning*. JSTOR.
- Skinner, Amy, Nicole Blum, and Douglas Bourn. 2013. "Development education and education in international development policy: raising quality through critical pedagogy and global skills." *International Development Policy/ Revue internationale de politique de développement* (4.3).
- Snow, C. P. 1959. *The two cultures and the scientific revolution, The Rede lecture, 1959*. Cambridge [Eng.]: University Press.
- Solga, Heike, Paula Protsch, Christian Ebner, and Christian Brzinsky-Fay. 2014. The German vocational education and training system: Its institutional configuration, strengths, and challenges. In *WZB Discussion Paper: WZB Berlin Social Science Center*.
- Soltys, Dennis. 1997. *Education for decline : Soviet vocational and technical schooling from Khrushchev to Gorbachev*. Toronto ; Buffalo: University of Toronto Press.
- Somers, Marie-Andree, Patrick J McEwan, and J Douglas Willms. 2004. "How effective are private schools in Latin America?" *Comparative Education Review* 48 (1):48-69.
- Sorj, Bernardo. 2003. *Brazil@digitaldivide.com : confronting inequality in the information society*. Brasília, DF: Unesco Brasil.
- Spence, Michael. 1973. "Job market signaling." *The quarterly journal of Economics* 87 (3):355-374.
- Spiel, Christiane "Education and the Shaping of Identities", in Peter Webinger & Alexander Shahbasi." In *Who Are You? States and the Quest for Identity*, edited by Peter Webinger e Alexander Schahbasi, 114-25. Bitterfeld: ECHOVERLAG, 2017.
- Steiner-Khamsi, Gita, and Ines Stolpe. 2006. *Educational import: Local encounters with global forces in Mongolia*: Springer.
- Streeck, Wolfgang, and Daniel Mertens. 2011. "Fiscal austerity and public investment: Is the possible the enemy of the necessary?".
- Suárez, David F. 2007. "Human rights and curricular policy in Latin America and the Caribbean." *Comparative Education Review* 51 (3):329-352.
- Sung, Youl-Kwan, and Mi Ok Kang. 2012. "The cultural politics of national testing and test result release policy in South Korea: A critical discourse analysis." *Asia Pacific Journal of Education* 32 (1):53-73.

- Takayama, Keita, Arathi Sriprakash, eRaewyn Connell. "Toward a Postcolonial Comparative and International Education." *Comparative Education Review* 61, no. S2 (2017): 000-00.
- The Task Force on Higher Education and Society. 2000. *Peril and promise higher education in developing countries*. Washington, DC: World Bank.
- Thelen, Kathleen. 1999. "Historical institutionalism in comparative politics." *Annual review of political science* 2 (1):369-404.
- Thelen, Kathleen. 2007. *How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States, and Japan*. Cambridge: Cambridge University Press.
- Thelen, Kathleen. 2012. "Varieties of Capitalism: Trajectories of Liberalization and the New Politics of Solidarity." *Annual Review of Political Science* 14.
- Tietze, W., H., G. Roßbach, and K. Grenner. 2005. *Kinder von 4 bis 8 Jahren. Zur Qualität der Erziehung und Bildung in Kindergarten, Grundschule und Familie [Children from 4 to 8. Towards higher quality education in preschool, elementary school and in the family]*. Weinheim, Germany: Beltz.
- Tietze, Wolfgang. 2010. "Bildungspsychologie des Vorschulbereichs [Educational psychology in early childhood education]." In *Bildungspsychologie. Göttingen*, edited by C. Spiel, B. Schober, P. Wagner and R. Reimann, 50-69. Göttingen, Germany: Hogrefe.
- Torney-Purta, Judith, Rainer Lehmann, Hans Oswald, and Wolfram Schulz. 2001. *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen*: ERIC.
- Trilling, Bernie, and Charles Fadel. 2009. *21st century skills: Learning for life in our times*: John Wiley & Sons.
- Trow, Martin. 2006. "Reflections on the Transition from Elite to Mass to Universal Access: Forms and Phases of Higher Education in Modern Societies since WWII." In *International Handbook of Higher Education*, edited by James J. F. Forest and Philip Altbach, 281-292. Dordrecht: Springer.
- Tuijnman, Albert, and Ann-Kristin Boström. 2002. "Changing notions of lifelong education and lifelong learning." *International Review of Education* 48 (1):93-110.
- Tylor, Edward Burnett. 1870. *Researches into the Early History of Mankind and the Development of Civilization*: London, John Murray.
- UNESCO. 2016. Unpacking Sustainable Development Goal 4 Education 2030. Paris: UNESCO.
- UNESCO. 2017. "ICT in Education." Unesco, accessed May 24. <http://www.unesco.org/new/en/unesco/themes/icts/policy/>.
- Unicef. 2007. A Human Rights-Based Approach to Education for All: A framework for the realization of children's right to education and rights within education. New York: Unicef.
- United Nations. 2016. "Global Sustainable Development Report 2016." [https://sustainabledevelopment.un.org/content/documents/2328GSDR 2016.pdf](https://sustainabledevelopment.un.org/content/documents/2328GSDR%202016.pdf).

- United Nations. 2017. "Sustainable Development Goals - Goal 4 - Ensure inclusive and quality education for all and promote lifelong learning." UNESCO, accessed April 15. <http://www.un.org/sustainabledevelopment/education/>.
- United Nations Development Programme. 2017. Arab Human Development Report 2016. Youth and the Prospects for Human Development in a Changing Reality. New York: UNDP.
- United States Congress, and House Committee on Education and Labor. 1965. *National Foundation on the Arts and the Humanities act of 1965*. Washington,: U. S. Govt. Print. Off.
- US Department of Education. 2017. Reimagining the Role of Technology in Education: 2017 National Education Technology Plan Update. Washington.
- Vaillant, Denise. 2004. *Construcción de la profesión docente en América Latina: tendencias, temas y debates*. Vol. 31: Preal.
- Van de Werfhorst, Herman G, and Jonathan JB Mijs. 2010. "Achievement inequality and the institutional structure of educational systems: A comparative perspective." *Annual review of sociology* 36:407-428.
- Vaughan, Rosie Peppin. 2013. "Complex collaborations: India and international agendas on girls' and women's education, 1947–1990." *International Journal of Educational Development* 33 (2):118-129.
- Vincent, David. 2000. *The rise of mass literacy: reading and writing in modern Europe, Themes in history*. Cambridge: Polity.
- Voegtle, Eva M, Christoph Knill, and Michael Dobbins. 2011. "To what extent does transnational communication drive cross-national policy convergence? The impact of the Bologna-process on domestic higher education policies." *Higher education* 61 (1):77-94.
- Vorhaus, John, Kathryn Duckworth, David Budge, and Leon Feinstein. 2008. The social and personal benefits of learning: A summary of key research findings. Centre for Research on the Wider Benefits of Learning, Institute of Education, University of London.
- Walter, Richard J. 1968. *Student Politics in Argentina: the university reform and its effects, 1918-1964*. Vol. 2: New York: Basic Books.
- Walter, Richard J. 1969. "The Intellectual background of the 1918 university reform in Argentina." *The Hispanic American Historical Review* 49 (2):233-253.
- Warschauer, M. 2004. *Technology And Social Inclusion: Rethinking the Digital Divide*. Cambridge, MA: The MIT Press.
- Wells, Amy Stuart, and Allison Roda. 2016. "The Impact of Political Context on the Questions Asked and Answered: The Evolution of Education Research on Racial Inequality." *Review of Research in Education* 40 (1):62-93.
- Wesselingh, Anton A. 2002. "Durkheim, Citizenship and Modern Education." In *Durkheim and Modern Education*, edited by William SF Pickering and Geoffrey Walford, 30-41. Routledge.
- White, John. 2003. *Rethinking the school curriculum: Values, aims and purposes*: Routledge.

- Whitty, Geoff. 1985. *Sociology and school knowledge: curriculum theory, research and politics*. London: Methuen & Co. Ltd.
- Wilkinson, Frank. 2013. *The dynamics of labour market segmentation*: Elsevier.
- Woessmann, Ludger, and Thomas Fuchs. 2004. "Computers and student learning: Bivariate and multivariate evidence on the availability and use of computers at home and at school."
- Wolf, Alison. 2002. *Does education matter? myths about education and economic growth*. London: Penguin.
- Wolf, Frieder. 2009. "The division of labour in education funding: A cross-national comparison of public and private education expenditure in 28 OECD countries." *Acta Politica* 44 (1):50-73.
- Wolf, Frieder, and Reimut Zohlnhöfer. 2009. "Investing in human capital? The determinants of private education expenditure in 26 OECD countries." *Journal of European Social Policy* 19 (3):230-244.
- Wong, Suk-Ying. 1991. "The Evolution of Social Science Instruction, 1900-86: A Cross-National Study." *Sociology of education*:33-47.
- World Bank. 2012. *World Development Report 2012: Gender Equality and Development*. Washington: The World Bank.
- World Values Survey Association. 2014. *World values survey wave 6 2010–2014 official aggregate v. 20141107*. Madrid: Asep/JDS.
- Young, Michael. 2013. "Overcoming the crisis in curriculum theory: a knowledge-based approach." *Journal of curriculum studies* 45 (2):101-118.
- Zimmermann, Grégoire, Lyda Lannegrand-Willems, Claire Safont-Mottay, and Christine Cannard. 2015. "Testing new identity models and processes in French-speaking adolescents and emerging adults students." *Journal of youth and adolescence* 44 (1):127-141.