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Education and the Reproduction of Inequalities

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1. Introduction[1]

It is one of the most fundamental and robust result of sociology of education research that the level of education one attains is strongly determined by the socio-economic status and education of his/her parents[2]. For example, children from industry or farm worker families attain lower education than children from higher social strata in all developed countries (Gambetta, 1987). In other words, education is reproduced from generation to generation.

Thus, for more than half a century, sociologists have posed research questions such as: Why is students' level of educational achievement correlated so strongly with their parents' educational attainment? What mechanisms underlie the reproduction of education from one generation to another? Since educational attainment represents one of the key factors of individual economic status (i.e., occupation, income etc.), the fact that it is strongly influenced by social background is perceived as an instance of social injustice. Therefore, many authors ask one more question apart from the above research and theoretical questions: How can we adapt education policy to ensure the weakest possible relationship between students' educational achievement and their social and economic background? And also, what institutional and organizational obstacles weaken the relationship between educational attainment and individual abilities/efforts?

However, the efforts to disentangle the complex set of factors behind the generation-to-generation education reproduction cannot avoid the questions of how exactly people obtain education and what processes are involved. In order to fully understand the process of education reproduction, we should not "only" analyze the relationship between the education of parents and their children but, unavoidably, we should delve into a vast array of other factors behind educational processes such as the education system's institutional design, parents and peers, teachers and teaching methods, school processes, school climate and many others.

Research evidence suggests that educational achievement is indeed determined by a large number of factors of different strengths. The strength of each factor can be best estimated by

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[2] Different operationalizations of the level of education exist. Primarily, it is distinguished between *educational achievement* such as school grades or test results and *educational attainment* such as receiving secondary or tertiary education certificate.

means of meta-analysis. For example, Hattie (1993, 2003) reviewed thousands of studies to analyze the influence of more than 30 factors on educational achievement. He ranked those factors by strength, type and percentage of variance explained. He reached an interesting conclusion: about 50% of variance was explained by student-related factors, about 5-10% by parent-related factors, 5-10% by school-related factors and another 5-10% by factors related to peers. The remaining variance, as much as about 30%, was attributed to teachers. Teacher-student feedback was considered the strongest single factor (its effect equaled to 1.13[3]). In contrast, making the student repeat a grade was the strongest single negative factor of academic achievement.

Nevertheless, research effort cannot stop at determining the approximate effect of the different factors behind educational achievement. This is because most factors are not isolated, and instead, they interact with and often determine one another. For example, individual educational aspiration, one of the main empirically identified factors behind one's choice of education track, is itself influenced by other factors like parents' education and socio-economic status. Thus, if we aim to *explain* the process of inequality reproduction, we must formulate the *mechanisms* behind such reproduction[4].

Given the large number of factors behind educational achievement and the nearly indefinite number of combinations thereof, a great many different theories of education inequality reproduction have been formulated. A brief review of education sociology literature reveals that researchers have formulated a very broad spectrum of alternative theories of education inequality. While some of those theories are mutually exclusive, most are rather complementary to one another, i.e. the fact that one theory is valid does not preclude the validity of another theory.

In this chapter, we will focus on theories which both (a) deal with the role of school and the education system and (b) have a direct relationship with education policy and the potential ways of addressing education inequalities (we will also focus on the empirical verifications of those theories). Our focus is also based on the fact that those theories have not received as much attention as others (e.g., the socialization theory) in scholarly discourse.

2. Theories of education inequality reproduction

A large number of different theories try to explain the reproduction of education from one generation to another. According to one well-known opinion that can also be identified within the scholarly discourse, the empirically observed correlation between the education of parents and their children is primarily determined by inherited genetic dispositions, or in other words, education reproduction follows the genetic transfer of intelligence and other personality traits between generations (Herrnstein, 1973; Herrnstein & Murray, 1994; Jensen, 1972).

While genetic factors clearly play an important role, the fact that children's education track and success are partially, perhaps even primarily, determined by a vast array of social and

[3] An effect equal to 1 indicated the growth of standard deviation by 1. Effects above 0.8 were considered strong and apparent.

[4] See Veselý & Smith (2008) for discussion of the concept of mechanism in social sciences, and particularly in the study of social stratification.

economic factors seems evidence-based and undisputed (Pfeffer, 2008: 543)[5]. However, it is subject of argument what specific social and economic factors cause the reproduction. Some theories (e.g., Sewell & Shah, 1967) look for the explanation in individual education aspirations that are formed by one's significant others, including family and close friends, throughout socialization. Other theories (e.g., Bourdieu, 2004; Bourdieu & Passeron, 1977) find the main cause in the so-called cultural capital and the fact that children from lower social strata lack some of the knowledge and competencies schools evaluate but do not provide. Further authors (e.g., Boudon, 1974) identify the main cause in the insufficient economic resources of lower education families. Another stream of theories (e.g., Gamoran, 1987; Oakes, 2005) approach the issue from a completely different perspective and try to demonstrate that inequality reproduction is built in the education system's organization.

Given the diversity of theories of education inequality reproduction, it is hardly surprising that some authors have attempted to systematize those theories by creating typologies thereof. Based on a classic article by Kerckhoff (1976), two fundamental theory approaches have often been distinguished: the socialization model and the allocation model. While the socialization model represented a dominant theoretical perspective in the mid-1970s, now both approaches are considered equally legitimate and complementary today.

Kerckhoff identified the "**socialization model**" in the so-called Wisconsin model (Sewell & Shah, 1967; Sewell et al., 1969). The key factor consists of adolescents' education aspirations that are formed by the family and significant others, including friends and peer groups, during socialization. This model focuses on individual-level education reproduction and builds on the implicit assumption that the sources of one's educational attainment and status lie in the individual—his or her abilities, ambitions and aspirations.

While Kerckhoff (1976) admitted that the socialization model was important and both theoretically and empirically justified, he inferred that it was only concerned with one side of the coin. He argued that the approach he called "**allocation model**" had to be added to our explanation. The allocation model holds that the individual is strongly influenced – or even determined – by social institutions; what he or she achieves depends on what those institutions allow. The attainment of a certain level of education or status is subject to structural constraints, selective criteria applied in the education system, and barriers individuals cannot influence.

As Kerckhoff (1976) argued, few social scientists would identify exclusively with either the socialization or the allocation model. Both models are complementary, rather than exclusive. For example, one's life plans and education aspirations are strongly determined by the broader social context and the level of education system stratification. On the other hand, the mere existence of institutional constraints cannot fully explain how inequalities are reproduced. Democratic societies cannot tolerate open discrimination of any particular group, and therefore, any systematic disadvantaging of certain groups has to take place through latent, often social-psychological processes.

[5] In this chapter we focus upon social and economic factors causing the reproduction of inequalities. Because of space limitation, the discussion of genetic factors is beyond the scope of this chapter (see e.g. Fraser 1995; Jacoby & Glauberman 1995).

Thus, while Kerckhoff (1976) called for a synthesis of both models, he personally became an important proponent of the allocation model. His work was strongly influenced by the idea that education institutions are a kind of societal "sorting machine" (Spring, 1976). According to this idea, it was one of the primary goals of the educational system to sort students into groups, creating a hierarchy based on educational attainment and formalizing it through established education certificates.

While the idea of sorting machine itself is rather trivial, Kerckhoff went on and placed it in a comparative perspective. He noticed the fact that entirely different systems of education certification, different ways of organizing education systems and different educational practices existed in different countries: "Not all 'sorting machines' work in the same way. Not only do they sort their students into different indigenous credential categories, but the ways in which these credentials are produced and affect adult outcomes also differ in important ways" (Kerckhoff, 2001: 4).

Thus, Kerckhoff witnessed the inception of large-scale comparative surveys about education system effects (Shavit & Blossfeld, 1993; Shavit & Müller, 1998) that contributed importantly to our understanding of the ways education institutions affect the reproduction of education inequalities. Shavit and Blossfeld (1993) demonstrated that while the strength of the relationship between educational attainment and social background is quite stable over time, some countries managed to weaken it (specifically, Sweden and The Netherlands). Thus, this kind of surveys shows us that while the reproduction of education inequalities is not automatic and may change over time, the phenomenon has a strongly long-term nature, resisting any attempts for change[6].

This does not alter the fact that all education systems include a more-or-less covert mechanism of student selection and differentiation which effectively reproduces education inequalities. They do so in different ways and to different extents. On the other hand, there is no system everyone would agree on as a model of justice with an acceptable strength of relationship between school achievement and the socio-economic background of one's family (e.g., OECD, 2004a).

The following parts of this chapter will deal with the allocation model as it was defined and studied by Kerckhoff. More specifically, it will outline how education inequalities are influenced by the institutional and organizational design of educational systems and schools. While this is a vast topic, we will not describe the entire spectrum of perspectives upon the role of school in reproducing inequalities; we will rather focus on factors in the **process of student differentiation and selection,** which is most prone to education policy intervention. However, there is no doubt that other, much less obvious ways schools reproduce inequalities, exist beside organizational factors[7].

For the purpose of clarity, we will distinguish between two parts of the discussion about the role of education institutions in reproducing education inequalities. First, we will deal with

[6] Even the positive developments in Sweden and The Netherlands are mostly explained by the effects of an extensive welfare state, and in particular, general decline of social inequalities, rather than by education reforms themselves. This led some authors to conclude that education policy changes must be accompanied by changes in social policy as well (Walters, 2000, 2001).

[7] For example, P. Bourdieu's theory of cultural reproduction or P. Willis's (1977) theory of antischool culture.

the ways inequalities are determined by the educational system's overall design and management. Second, we will deal with school- and class-level practices. But we will have to start by defining two key terms used in the following: external and internal differentiation.

3. External and internal differentiation: A terminological note

Some of the most contested issues of education policy lie in the following questions: How should we organize education and how should we divide students between schools and classes? Some people believe that students should be grouped based on their abilities (or other characteristics such as interest or motivation) as soon as possible. According to others, such grouping at lower levels of education cannot be justified. English writing scholars usually refer to the sorting of students into separate schools and classes as *tracking*. Some other terms are also used for the same phenomenon (see below). Because a relatively big terminological chaos exists in this area, we will first attempt to clarify the basic English terms related to tracking.

The word **tracking** is probably the most usual term in relevant English scholarly literature. Table 1 outlines the definitions of tracking by some recent scholarly dictionaries as well as the key authorities in the field (Gamoran, Hallinan, Oakes, Slavin). The Table 1 makes it clear that the perspectives of most authors are relatively similar. One might extract the following from their definitions of tracking: "Tracking is the sorting of students into separately educated groups with different curricula and different education programs. Such sorting may occur at the level of the education system or individual classes".

Definition of tracking	**Source**
Broad, programmatic divisions that separate students for all subjects	Gamoran (1992a)
The term tracking refers to the practice of assigning students to instructional groups on the basis of ability	Hallinan (1994)
Process whereby students are divided into categories so that they can be assigned in groups to various kinds of classes.	Oakes (2005)
Educational tracking refers to the placement of students into different kinds of educational programs according to a defined criterion of similarity or dissimilarity, such as interest, ability, or achievement	Dietrich (2008)
Tracking in schools involves differentiating the curriculum and organizing students for instruction based on perceived academic ability levels.	Ellison (2008)
Tracking refers to the practice of grouping students according to achievement levels, either between or within classrooms, for the purposes of instruction.	Kelly & Covay (2008)
Tracking is an instructional management practice in which students are assessed on achievement or intelligence and then assigned to differentiated curricula to match their abilities	Yang (2009)

Table 1. Definitions of tracking in English literature

However, there is less consensus among the authors about the *criteria* governing grouping. Some see purported abilities and education achievement as the only criterion, while others think that even personal motivation or interest may serve as a criterion. These dual perspectives on the term perhaps arise out of the history of its use. Originally, tracking referred to the differentiation of curriculum in line with students' interests, educational plans and ambitions. It was only later that the term began to refer to the differentiation of curriculum in line with students' abilities (Watt, 2006).

Ability grouping is another frequently used term. The Table 2 contains some of its definitions. The table makes it clear that the terms tracking and ability grouping are, in many ways, used synonymously. Nevertheless, ability grouping appears as somewhat more specific. First, it deals explicitly with grouping students according to their abilities (whether purported or real), thus making the process somewhat involuntary (what students can matters, as opposed to what they want). Second, a few authors (e.g., Rosenthal, 2008) use the term ability grouping to refer to dividing students *within* one class and the term tracking for separate classes within and between schools.

Definition of ability grouping	**Source**
Any school or classroom organization plan that is intended to reduce the heterogeneity of instructional groups.	Slavin (1990)
Divisions among students for particular subjects, such as special class assignments for math or within-class groups for reading.	Gamoran (1992a)
Ability grouping is a broad term used to describe a set of educational practices that sort students for instructional purposes based on their perceived learning capacity, as measured by achievement tests, cognitive ability tests, past academic achievement (i.e., grade point average), and teacher recommendations.	Robinson et al. (2005)
Ability grouping refers to the organizing of elementary and secondary students into classrooms or courses for instruction according to actual or purported ability	Vergon (2008)
Ability grouping is the practice of teaching homogeneous groups of students, stratified by achievement or perceived ability. Among the various forms of ability grouping are within-class ability grouping, crossgrade grouping, and between-class ability grouping, also known as tracking.	Rosenthal (2008)
Ability grouping is the practice of making student groupings based on ability and achievement in an attempt to provide instruction specifically relevant to each group's needs.	Davidson (2009)

Table 2. Definitions of ability grouping in English literature

As we mentioned above, most authors do not distinguish between the terms *tracking* and *ability grouping*, treating them as synonyms. Therefore, one must always find out what exactly any given author has in mind. We suggest that future authors define clearly which concept of differentiation they bear in mind. We generally recommend the term *tracking* for dividing students between different classes and schools and the term *ability grouping* for

dividing students within the same class. This is in line with our intuitive understanding of those terms: while *tracking* implies something rather long-term and binding (the student creates a certain track and begins to follow it), the term *grouping* implies something rather small-scale and short-term.

Let us complete the terminological review by mentioning the term **branching**, which refers to dividing students between different *types of schools,* a common practice in especially Central European countries, like Germany, Austria or the Czech Republic (Brint, 1998: 229[8]; Walters, 2001). While the term is not used as frequently, it appears as a favorable complement to the above terms as it implies dividing students between different types of schools in the way educational tracks *branch*[9]. There are two main types of branches: "academic" branch, which as a rule provides general education and prepare for further education, and vocational education branch preparing students for certain occupations[10]. Even more concepts contribute to the terminological chaos. Similarly as American English distinguishes between ability grouping and tracking, British literature also operates with two concepts. While *streaming* corresponds to the American *tracking,* the term *setting* is analogous to *ability grouping* (e.g., Hallam et al., 2003; Ireson & Hallam, 1999).

Other scholars use more general terms and distinguish between external and internal differentiation. For example, Greger (2004) defines **external differentiation** as the creation of homogenous student groups that are educated separately all day long and for all courses. He understands **internal differentiation** as the grouping of students for certain courses (e.g., language classes for beginner and advanced students; electives) or the grouping of students within a class (e.g., group learning, cooperative learning). Thus, internal differentiation also includes the cases when students form a heterogeneous body (class) and are only grouped for a certain (small) part of the school day or for certain courses.

Time and the permanence of grouping represent Greger's main criterion for drawing the line between external and internal differentiation. External differentiation occurs when ability grouping affects all or most courses (or most of the school day); internal differentiation takes place, as Greger suggests, when such grouping is less frequent (affecting a small part of the school day or some courses only). Thus, according to this definition, there is no clear boundary between external and internal differentiation.

To sum it up, we can distinguish between three types of differentiation: at the educational system, school, and class levels (see Table 3). We recommend leaving to empirical investigation the question to what extent students are grouped based on their abilities and educational achievement, on one hand, and personal preferences, on the other hand. This is because those factors are sometimes quite difficult to disentangle. For example, when students appear to be grouped based on their academic achievement at first sight, their personal aspirations and interest in a certain type of education may play a key role. It should be emphasized that practice is always richer than theory. In reality, we often observe

[8] Kerckhoff (2000: 468) uses a similar term, *career branches.*

[9] Brint uses the term *early branching system* for the education systems of German-speaking countries.

[10] The number of identifiable branches is different between education systems. Some systems distinguish between high, average and low tracks, while others between "selective" and "non-selective" branches only (cf. Greger, 2004).

several types of student differentiation and sometimes find it difficult to classify clearly as internal or external differentiation.

General terms	External differentiation at the education system level	External differentiation at the school level	Internal differentiation
American term	Branching (Tracking)	Tracking	Ability grouping
British term		Streaming	Setting
Definition	Students are grouped in different types of schools	A homogenous group of students (classes) is formed for all courses (e.g., a language class is formed) within a school	Students within a class are grouped for certain courses (e.g., beginner and advanced language classes)

Source: Author.

Table 3. Basic types of student differentiation.

We will divide further discussion on differentiation in two parts. First, we will deal with the overall structure of the education system and the ways it affects the reproduction of education inequalities (the problem of branching). Subsequently, we will focus on the school level and what we know about the processes of differentiation taking place there (the problem of tracking and ability grouping).

4. Inequality reproduction at the level of education system

4.1 A typology of education systems according to education inequalities

If we attempt to analyze the role of education systems in reproducing education inequalities and assume that different systems feature different mechanisms of reproduction, then we must identify the key differences between different countries' education systems. Given the great diversity of education systems, this task is more complex than it might appear at first sight.

There is a great deal of typologies and comparative analyses of education systems. Nevertheless, Kerckhoff's (2000, 2001) typology assumes key importance and is most often used when it comes to education inequalities. It basically builds on and specifies the two dimensions identified in Allmendinger's (1989) seminal work and labeled "standardization" and "stratification".

Allmendinger understood **standardization** as the level of uniformity of education provision in a given education system, i.e. the extent to which it is regulated by centrally defined standards. Here she primarily meant geographic standardization, i.e. to what extent aspects like teacher education, curriculum, school-leaving certificates or financing differ between and within the regions and areas of a given country, and to what extent they are determined by individual providers (i.e., schools). Thus, this dimension primarily refers to the levels of centralization and autonomy within education systems. Based on a comparison between Norway, US and Germany, Allmendinger demonstrated key differences in the level of autonomy, and thus standardization between those countries.

Stratification was understood as the level of internal and external differentiation (tracking) within an education system and the proportion of a given age cohort that attained the highest level of education available within the system (the highest possible number of years of education). The higher the proportion, the less stratified the system. Thus, education system stratification refers to the system's selective character, i.e. the fact that students are sorted into different tracks and how this affects their education prospects. Unsurprisingly, Allmendinger found the German education system to be highly stratified, as opposed to the US system.

Allmendinger's approach is helpful because it provides us with a simple but effective typology of education system, based on a combination of the above two dimensions. Every country's education system can be classified as one of the four resulting types (standardized and stratified, unstandardized and unstratified, unstandardized and stratified, standardized and unstratified). The advantage of this simple typology becomes clear once we realize, along with Allmendinger, that the degrees of standardization and stratification differ between levels of education within many existing education systems. For example, secondary education in the US is non-stratified (with no tracking and no diversity of diplomas) but tertiary education in the same country is highly selective, and thus stratified[11].

As we suggested above, Allmendinger's work had a great impact and was further developed and applied (e.g., Kerckhoff, 2000; Müller & Shavit, 1998). In the following section, we will describe and outline Kerckhoff's approach which adds a third dimension to Allmendinger's original two: the degree of specificity of vocational education[12]. Finally, it is worth mentioning that while the authors who went in Allmendinger's footsteps developed her approach in many respects, they also frequently introduced great simplification when attempting to operationalize the approach[13]. Therefore, we can only recommend a critical reading of the original work.

4.2 Stratification of education systems

Stratification is understood as "the degree to which systems have clearly differentiated kinds of schools whose curricula are defined as 'higher' and 'lower'" (Kerckhoff, 2001: 4). As such, stratification usually takes place at the (lower or higher) secondary level of education.

[11] At this point, Allmendinger's concept seems rather inconsistent. When studying stratification in secondary education, the author merely considered the formal existence of different tracks; in contrast, for the tertiary system, she added the criterion of quality and *informal* distinction between different colleges and universities. The question is, would the author label US secondary education as non-stratified if she approached it in the same way as tertiary education?

[12] One might object here that this dimension is already covered by the stratification level. Indeed, systems grouping students in the general and vocational education tracks are stratified. However, given its importance, we will deal with this aspect separately, along with Kerckhoff. In his latest article on the topic, Kerckhoff (2001) further mentioned a fourth dimension: "student choice". He understood it as the level of flexibility of decisions a given education system allows to students. This aspect is also strongly related to the system's stratification, and therefore, we will not deal with it separately.

[13] For example, Kerckhoff (2000) assessed standardization and stratification for education systems *as a whole,* rather than the individual levels of education like Allmendinger did. On the other hand, Müller & Shavit (1998) operationalized stratification simply as level of differentiation (tracking) in secondary education.

Germany is an example of a highly stratified education system. Compulsory school education begins at the age of six. After four years of mixed classes, pupils are divided into three different education tracks (Mortimer & Krüger, 2000). Only about 30% of the most successful enter the *Gymnasium* which provides nine years of education and prepares them for college. The Main School (*Hauptschule*) is the second education track for grades 5 through 9. While it provides general education, it is already oriented towards future vocational education for mostly manual labor. The third type, the Real School (*Realschule*) lies between the *Gymnasium* and the Main School. The Great Britain's system is also stratified and distinguishes between *Secondary Modern, Comprehensive* and *Grammar Schools.*

There is no such thing in countries like the US or France. All US high school graduates receive the same diploma and are able to go on to college. While there are different types of secondary schools in France, with either general or vocational orientation, all graduates obtain a *baccalauréat* and, in turn, access to college. (Interestingly, the French system used to be almost as stratified as the German one until the 1970s.) On the other hand, students with a *baccalauréat* from a general secondary school have better odds of entering college than those from technical or vocational schools.

Stratification primarily depends on the opportunities for further study any given type of study opens up. Since Kerckhoff meant merely a *formal* stratification of education systems (that is, what school-leaving certificates made possible), he found a low level of stratification in the US system. One might object that even in the US there is an important distinction between private, church and public schools, and the consequences of this distinction are much higher than in Europe. At the same time, private schools usually provide better quality than public schools. Thus, even in the US system, the *type* of school stratifies and differentiates students; simultaneously, the family's economic status is the main factor that determines whether one goes to a private school. As a result, it is generally true that "education inequalities are more likely to occur in more stratified education systems" but we should take into consideration both formal (legislated) stratification and informal stratification.

4.3 Standardization of education systems

While both Allmendiger and Kerckhoff considered standardization (i.e., ensuring certain proximity or comparability of education across a country's education system) to be a single dimension (i.e., more-or-less standardized systems can be distinguished), it may cover several different areas of an education system with different individual levels of standardization. In particular, it may cover the following aspects: (a) the ways and levels of financing, (b) the curriculum, (c) school-leaving certificates, (d) educational procedures, (e) teacher education and career growth, (f) monitoring and evaluation of educational achievement.

Generally speaking, centrally managed education systems exhibit higher standardization. For instance, standardization is typical for France where the national Ministry of Education is responsible for teacher education, student and teacher evaluation, and the specification of national curriculum (Kerckhoff, 2001). In contrast, the different administrative districts in Great Britain possess important powers and autonomy, while the financing and certification are rather standardized across the country. Kerckhoff found the least level of standardization in the US, where important competencies lie in the hands of different states and regions and the ways and levels of financing also differ between places.

Thus, the effects of standardization on education inequalities remain unclear. On one hand, vast literature covers the effects of stratification and the proportion between general and vocational education on educational achievement and inequalities. On the other hand, there is very little empirical evidence about the effects of standardization and we have to resort to a limited number of research studies or logical deduction. Generally we can assume that standardization ensures similar education and a minimum level of quality for all. Green (1997: 296) analyzed educational achievement in centralized and decentralized systems and concluded that "the high-achieving countries appear to have an 'inclusive learning culture' which is characterized by the high premium which society places on learning *for all groups* … [and whose education systems] institutionalize norms and expectations for everyone, and not just the élites" (emphasis in original). At the same time, he found necessary "a high degree of state 'regulation', where government acts in a concerted fashion at different levels to define and operationalize the system, including defining and enabling the roles of the different social partners within it" (Green, 1997: 296).

It is not difficult to deduce that greater autonomy expands freedom and room for innovation, on one hand, and increases the differentiation of educational achievement, on the other hand. For example, if individual administrative regions are given the responsibility for financing schools and the freedom to set their own money allocating mechanism, it they are highly likely to choose different strategies with different effects. Analogically, when schools get more discretion in designing the curriculum and teaching methods, one may expect school curricula to be better tailored to the abilities and interests of both students and teachers in each individual school. At the same time, differences between schools are likely to grow and while good students become even better, the average and under-average ones are likely to fall behind even more.

All of this has its pros and cons. No exact optimal level of standardization can be determined for the above dimensions. However, many countries have taken the road of increasing standardization, especially in the field of curriculum. As a typical example, the US introduced a standards-based reform at the turn of 1990s (Roeber, 1999). The reforms aimed at improving educational achievement by setting national standards for different subjects and raising the overall "education bar". Interestingly, the standardization effort was criticized from both sides: because advanced students would be slowed down by the necessary adaptation to general standards for all, and because disadvantaged and handicapped students failing to fulfill the general standards would suffer graver consequences (Roeber, 1999: 162).

Recently, most developed education systems have progressed from process standardization to outcome standardization (OECD, 2004b). Most developed countries' education systems substantially increased the autonomy of schools and administrative districts. Subsequently, some of them introduced additional control mechanisms. There is no agreement on the ways control mechanisms should be designed. Unless part of a larger plan, national testing initiatives and subsequent repression of "unsuccessful schools" do not seem to always produce the desired results in terms of quality or equal opportunities. Instead, cheating takes place and, as a result, schools become increasingly differentiated and classified as either good or bad. It is unclear whether test results improve due to exercise before the specific test or an actual increase in students' knowledge and skills in the given subject. Standardization through testing proves to have negative consequences for the achievement

of students at the left tail of the distribution because, in many systems, those students are increasingly obliged to repeat a grade, which discourages them and does not make their achievement better[14]. Therefore, there has been an ever stronger call for individualizing the education (caring for each individual student) and for increasing schools' and teachers' internal motivation (using standards as a feedback for schools and teachers, rather than an instrument of control and repression).

4.4 Education systems from the perspective of vocational education and training

Most education systems distinguish between "general" and "vocational or technical" education at the higher secondary level and up. The types and specifics of secondary schools differ country by country, yet there is one common feature: while general study programs prepare students for further study, vocational education primarily prepares them for entering the job market (Shavit & Müller, 2000). Countries differ substantially in the proportion between general and vocational education. English-speaking countries (US, Canada, Great Britain or Ireland) traditionally prefer general education, while Central European countries (Germany, Austria, or the Czech Republic) prefer vocational education. The latter is due to shared historical development during the industrialization era, which emphasized technical secondary education as a preparation for different occupations (Benavot, 1983)[15]. In general, however, most education systems used to reserve general education for a narrow elite, while the access to vocational education was open for larger groups of the general population. Even today, general secondary education continues to be mostly considered as more prestigious and providing better perspectives for further education and future success in the job market (Archer, 1979; Kerckhoff, 2000).

The ways vocational secondary education is organized are closely linked to the institutional design of a given country's market sector (size of businesses, organizational culture, type of management etc.) and social policy. Estevez-Abe et al. (2001) found empirical evidence of certain clusters of countries according to their education systems, social protection and economic systems. They stated that people tend to invest in general – thus portable – skills, rather than job-specific or field-specific skills. Without additional institutional measures, investment in specific skills is always risky. Thus the authors believed that important instruments of the welfare state (employment protection, unemployment welfare, collective wage bargaining) provide an incentive for workers to invest in specific, little portable skills. At the same time, such social protections increase their dependence on employers and vulnerability to market changes. In contrast, more uncertainty and less protection increase the willingness to invest in general skills that are the sources or individual mobility and flexibility, but also increase the economic competitiveness of businesses by making their labor force cheaper.

[14] Cf. Hattie's (1993) findings about the strongly negative effect of failing the grade above.

[15] Terminological note: Vocational education takes many quite different forms, including fully school-based education, on one hand, and training at both school and business premises, on the other hand. For that reason, the terminology is not always entirely clear. In practice, the acronyms VET (vocational education and training) or VOTEC (vocational and technical education and training) are used to cover all existing forms. The word *vocational* most often denotes occupational preparation or training for manual labor or similar vocations. The word *technical* denotes occupational education or preparation for carrying out middle-rank functions of different types and contents (OECD, 1998).

Systems built around specific skills tend to facilitate more egalitarian societies, with fewer differences between people. The above authors contend that this relationship is not primarily caused by the social protection itself but rather by the type of vocational education system. For approximately one-third of students with the worst study competence, vocational education ensures the best and only chance to increase their value on the job market (Estevez-Abe et al., 2001: 156). If general education was only available to those people, their labor market competitiveness would be much worse and they would drop to the level of unskilled jobs. In other words, systems without vocational education provide below-average secondary school graduates with much lower return on their education investment, compared to systems that prepare them for specific occupations. A little standardized and little structured system – like the US one – makes secondary school graduates who do not go straight to college suffer a relatively long time period of searching for the best occupation ("floundering"), a time period many consider extremely unproductive and ineffective in terms of maturation and employability (Hamilton, 1990). For others, however, this is a quality of an open system that facilitates perceived opportunities and upward mobility (Turner, 1960)[16].

One of the main controversial aspects of vocational education is whether vocational secondary education should be viewed as an "effective social security safety net" that increases the employability of graduates and decreases the risk of unemployment, or rather as a way of diverting students from higher education (Shavit & Müller, 2000). According to the former opinion that primarily relies on the theory of human capital, vocational education raises the employability and income of trainees and students by increasing their abilities and skills. Authors of this stream (Bishop, 1989; Blossfeld, 1992) assume that vocational education provides students with the knowledge and skills that increase their labor productivity, thus raising employers' demand for their work and the students' chances of earning a decent income. According to the latter opinion, a sharp division between general and vocational education represents an unjustifiable sorting of students into two hierarchical groups that lead to entirely different life courses and reproduce education inequalities across generations. Empirical research reveals that both opinions are partially right. As a rule, vocational education does lower the odds of proceeding to tertiary-level education but, at the same time, it decreases the risk of unemployment and increases the chances of obtaining a qualified manual job (Arum & Shavit, 1995)[17].

Another frequently discussed issue is to what extent participation in vocational education determines future education possibilities. Especially important here is the percentage of vocational school graduates who proceed to the tertiary level. According to one theory (Hilmert & Jacob, 2003), vocational education is a "detour", i.e. a longer track to college. It is precisely the length of this track that may deter talented students from going to college. Undoubtedly, countries with high proportions of vocational secondary education (Germany, Austria, France) have little percentages of tertiary level students, while countries with predominantly general education make massive investments in tertiary education (Estevez-Abe et al., 2000: 172).

[16] There is also the opinion that it facilitates flexibility in workers, making the systems less rigid than those with vocational education and increasing their innovation potential.

[17] Nevertheless, countries differ in the extent to which vocational education provides a "social security net". For example, the unemployment of apprenticeship graduates in Germany is much lower than in the Czech Republic.

5. Reproduction of inequalities at the school and class levels

5.1 History and current state of differentiation in the United States and other countries[18]

The idea of sorting students based on their stabilities appeared in early 19th century (Loveless, 1999a). In the US, an actual realization of grouping based on purported abilities was gradually introduced from the 1860s (J.A. Kulik & C.-L.C. Kulik, 1982). The differentiation practice experienced different waves of popularity (Vergon, 2008). From the beginning, ability grouping was expected to benefit all students because education would be tailored to their needs. Creating large schools with homogenous classes was found better and more effective than creating many small schools to provide education to different populations (Kelly & Covay, 2008: 405). Thus, schools offered a diverse selection of courses, from college preparation to less demanding classes. Education content differed from student to student but all students obtained the same high school diploma, and this arrangement was found satisfactory (ibid.)[19].

School-level student differentiation in the US peaked around the 1960s. Students were usually grouped for all courses. Students of academic tracks who aimed for college practically did not meet other students in class (ibid). Thus, students were in fact sorted into entirely different education programs at the higher secondary level, at the latest. Three education tracks were usually available: college preparatory, general, and vocational (Lucas, 2008: 406). The sorting of students into entirely different education tracks relied, *inter alia*, on the then predominant concept of human intelligence. People believed that only one type of general intelligence exists, and thus, students who are good in one field are likely to be good in other fields as well[20].

The vast differentiation within schools came under increasing criticism since approximately the mid-1960s. Gradually, schools abandoned the sorting of students into different education programs and instead, began to provide key subjects (English and mathematics) as well as other subjects at different proficiency levels. Between 1965 and 1975, schools stopped practicing "classical" tracking (i.e., in almost all courses), nevertheless, courses at different proficiency levels for different students remained (Lucas, 2008: 406). In our terminology, external differentiation was transformed into internal differentiation.

Differentiation continued to be criticized. A growing number of voices opposed the sorting of students into homogenous groups based on purported abilities and instead called for

[18] For the purpose of simplification, we use the term "differentiation" in this section to refer to school- and class-level differentiation – tracking. Here we primarily study the causes and effects of external differentiation, rather than the forms of short-term internal differentiation (e.g., grouping students in different readers' clubs).

[19] The fact that student differentiation was primarily realized *within* schools in the US, as opposed to Central European countries, was also caused by legislative developments. The US Supreme Court ruling in *Brown v. Board of Education* became a particular breakthrough by declaring the segregation of students based on race, ethnicity or gender unconstitutional. Since the segregation of students into different types of schools became illegal, sorting *within* schools came to be practiced more frequently (Watt, 2006: 1027).

[20] This concept endured for a long time and was only substantially undermined by Howard Gardner's (1983) theory of multiple intelligences.

mixed classes. Due to this criticism, schools indeed have been eliminating and restricting differentiation. Manlove & Baker (1995) found that 85% of US schools have a policy of open school choice and try to facilitate transitions between different types of courses. Also, a detailed study of school practices in California and Massachusetts by Loveless (1999a) showed a decreasing level of differentiation.

Nevertheless, tracking is very difficult to reduce because its practices have deep roots, and thus, some data about eliminating differentiation are not as positive. For example, Kelly & Covay (2008: 406) state that in the US, there are few schools with no differentiated classes at all. Furthermore, while ability grouping begins at a very young age, often in kindergarten, anti-differentiation measures are not usually aimed at that level. In contrast to, for instance, Japan or most European countries, pupils in the United States are normally tested for "readiness" at the age of 5 and according to their test results they are placed in academically oriented kindergartens or less demanding kindergartens and classes (Oakes, 1997: 395).

This leads us to a hypothesis that tracking continues to be widespread in spite of its changed character. It may also have become less visible, with external differentiation shifting towards internal differentiation as well as lower education levels. Undoubtedly, it has not become a less important issue or a less important source of education inequalities than it used to be. Let us, therefore, review the arguments for and against it.

5.2 Arguments for and against tracking

While almost all sociology of education experts share the view that differentiation is untenable in terms of equal access to education, many teachers, administrators and politicians continue to support it. Table 4 below outlines the principal arguments for and against differentiation[21].

Slavin (1990) stated that the arguments of differentiation supporters mostly evolve around *effectiveness*, while opponents focus on *equity*. Supporters primarily argue that differentiation is a rational practice that can be observed in all complex organizations. By separating a highly heterogeneous body of students into homogeneous groups, the school can fulfill its goal (education) more effectively, just as large organizations set up different departments or other structures dealing with specific types of work (Gamoran et al., 1995: 688). Thus, it is assumed that a group of similar talents can be educated better and more effectively, compared to a highly heterogeneous group. The proponents of differentiation also mean that each group necessitates different teaching methods, and therefore, differentiation helps both high-track and low-track students.

In contrast, the opponents of differentiation build their argument primarily around equal access to education. They emphasize that such segregation violates democratic values and it is not equitable if different groups of students receive different quality of education. As Slavin (1990: 474) argues, differentiation proponents "carry the burden of proof" in any case. The equality of all persons is fundamental in a society which relies on the principles of democracy and social justice, and therefore, undifferentiated education should be considered the natural point of departure.

[21] Here we attempt to summarize the different arguments we have encountered in the discussions of differentiation, rather than review their coherence or empirical validity.

Arguments for tracking	Arguments against tracking
- Students can develop in line with their abilities - Teaching methods can be adapted to group needs - Low achievement and grade failure are reduced - Smarter students remain interested and motivated because they are not slowed down by others - Slower students take a more active part in learning when not overshadowed by smarter ones - Teachers find teaching and learning much easier - Small groups of slower students can be taught individually - Students only enroll in certain programs temporarily - Slower students have a more positive self-esteem if not mixed with more talented students at school - Enrollment in certain programs is justified by reflecting educational achievement and inborn abilities	- Slower students necessitate the presence of talented ones in order to be stimulated and assisted by them - The stigma of less academic programs discourages their students - Teachers do not want to work with slower groups - Differentiation discriminates on the basis of ethnic identity or social background - Students of less prestigious programs are exposed to less stimulating, lower-quality, less demanding instruction, compared to students in high-track (academic) programs.

Table 4. Arguments for and against tracking (Oakes, 2005; Riordan, 2003; Slavin, 1990)

Thus, differentiation proponents should prove, above all, that grouping is *effective* and that it is advantageous to all groups of students. As Slavin (ibid.) infers, all other arguments in the above Table must be discounted if this is not proven. An empirical proof of differentiation effectiveness should demonstrate that students achieve better results *due to* differentiation, compared to results in undifferentiated school settings. Else, there is no reason for differentiation at all[22].

While differentiation proponents have not succeeded in demonstrating the effectiveness of the practice, one might also argue that the effectiveness criterion does not override the equity criterion. Gamoran et al. (1995) explain that there are two main problems with differentiation. First, students are not a "raw material" and sorting them, as opposed to sorting goods or services in large organizations, is not a neutral act. Effectiveness can be in conflict with the goal of social integration. Second, it is rather speculative to argue that differentiation makes it possible to apply different educational methods that are tailored to a given group rationally and effectively. This is because "there is little consensus about what

[22] Even differentiation opponents (e.g., Oakes, 1997) admit one empirically grounded argument: the fact that teachers prefer working with homogenous groups.

constitutes the best teaching methods, so it is difficult for educators to know precisely how to vary their teaching for different groups" (Gamoran et al., 1995: 689).

5.3 Factors affecting student enrolment in differential programs

In a meritocratic education system, students should be assigned to differential programs based on their abilities and efforts, if at all. No role should be played by factors such as gender, race, ethnicity or social background. Research demonstrates that educational achievement is, in line with the main idea of differentiation, a fundamental factor of student enrolment in programs. However, research also clearly demonstrates that factors like gender, race and socioeconomic status play important roles in education tracking as well.

Studies on the role of gender in education tracking have usually found that girls are somewhat advantaged, compared to boys (Gamoran & Mare, 1989). This is because girls usually get better grades and their school behavior is perceived more positively. Nevertheless, the gender factor is quite small, compared to others. The roles of socioeconomic status and parents' education are especially important in education tracking, even for children with similar educational achievement (Hallinan, 1992) and when controlled for observed abilities (Jones et al., 1995; Lucas, 1999). Hallinan (1996) even demonstrated that the level of mobility between different education tracks is determined by parents' SES, race and gender. Alexander et al. (1978) demonstrated the effects of SES, race and gender as well, even when controlled for academic ability. However, they found that the effect of those factors was rather indirect, through schools' and parents' expectations from children. However, other studies demonstrated that parents of higher social strata take a more active part in and try to influence school decisions about assigning students to different tracks (Useem, 1992).

Each individual school has an influence as well. For instance, it has been demonstrated that the number and extent of education programs is not always in line with the needs of a given school's students (Hallinan, 1992). Thus, different schools may assign students with the same abilities to different programs, thus launching them on different education tracks.

5.4 Empirical evidence on differentiation effects

5.4.1 Short-term effects of differentiation on educational achievement

The above makes it clear that the idea and practice of differentiation depend critically on proving sorting students improves their educational achievement, compared to non-differentiated education. Thus, the United States and other countries where differentiation exists have seen a large number of research studies on that question. Nevertheless, their results are somewhat ambiguous and do not allow a clear conclusion on the effects of differentiation. In general, it can be stated that few studies have concluded that differentiation has better overall effects than undifferentiated education. Metaanalyses of large numbers of studies have shown that differentiation either has no *overall* effects (Slavin, 1990) or its effects are negative (Hoffer, 1992).

The key empirical question we are facing here is: what achievement would students from differentiated (homogeneous) groups have if they were educated in undifferentiated

(heterogeneous) groups? Thus, we want to measure the effects of homogeneous versus heterogeneous education. Before dealing with the effects of differentiation on each individual group, we will briefly mention the methodological obstacles of measuring differentiation effects. The inconsistency of results is likely caused by divergent methodologies. However, a methodological discussion is also highly relevant in analyzing education inequalities at the system level (between schools), and therefore, we will briefly deal with that discussion first.

In principle, there are three different approaches to measuring the effects of differentiation (Betts & Shkolnik, 2000a; Slavin, 1990;)[23]. In the first approach, research compares students of different education programs (academic, general and vocational) *within* a school and the growth of their educational achievement over time (Gamoran & Mare, 1989). This kind of studies tracks students over time and determines whether the academic achievement of students in different education tracks grows at different speeds. Since students in different tracks are expected to have different characteristics, their achievement is statistically controlled for socioeconomic background, preexisting knowledge and achievement, IQ and many other variables. Even when influences other than differentiation itself are "filtered out" statistically, an overwhelming majority of studies reach a clear conclusion that taking part in academically more demanding tracks accelerates educational achievement, while enrolment in less demanding and prestigious tracks impedes achievement.

The methodology of this type of research has been criticized for several reasons. First and foremost, in spite of the high number of different control variables entered into the regression model, we are unable to control for many relevant variables that play a role and are responsible for the fact that the groups under investigation (i.e., different education tracks) possess highly different characteristics that cannot be measured persuasively (e.g., the level of self-esteem or motivation). Slavin (1990: 489) points out that no *statistical* controls are sufficient or adequate when there are substantial differences between the groups' initial knowledge and skills; instead, this situation will always cause underestimation of predicted achievement of academically successful students, while that of the less academically successful students will be overestimated[24].

The second type of research studies (see review by Slavin, 1990) tries to remedy the above-mentioned methodological problem by analyzing the *average* educational achievement of schools practicing differentiated versus non-differentiated education. Those studies have usually reached the conclusion that differentiation has little or no effects on overall educational achievement. The methodological issues with this approach are clear: while zero *overall* differentiation effects are determined, we fail to understand the *distribution* of those effects. Yet it is very likely that differentiation has varying effects on students of different tracks; the zero overall effect obscures the fact that students in more academic tracks gain from differentiation and those in less demanding tracks are the victims of it (Hallinan, 1990).

[23] Here we speak of quantitative measurement of differentiation effects. Apart from that, there is qualitative research, especially ethnographic studies (see Gamoran & Berends, 1987 for a review), which rather focuses on differentiation-related mechanisms and processes (see next section).

[24] Here, Slavin implicitly touches the fact that in comparing two or more qualitatively different groups, this difference cannot be easily eliminated statistically (quantitatively).

In other words, differentiation probably has its winners and losers while it is a zero-sum game.

Finally, the third and most recent approach analyzes each individual group in heterogeneous schools (i.e., students in academic versus vocational programs etc.) and compares it with the types of students at non-differentiated schools (e.g., Hoffer, 1992; Kerckhoff, 1986). Even this methodological procedure has its issues, especially those related to the way we match students at differentiated schools with students at non-differentiated ones. Thus, results are somewhat ambiguous here as well. However, the results of this type of studies only vary in the *level* of differentiation effects identified. For instance, Hoffer (1992) found that differentiation has a slightly positive effect on students in academic tracks and a strongly negative effect on students in non-academic tracks. According to Kerckhoff (1986), students in academic tracks gain more than one could expect while students enrolled in non-academic tracks lose due to differentiation. Betts & Shkolnik (2000a) identified differentiation effects as well yet they were much smaller than expected by previous studies.

The current state of knowledge on the academic effects of differentiation can be summarized in the following way. A great many empirical studies practically rule out the possibility that differentiated education generally improves overall results and helps both high-track and low-track students. If differentiation is given the benefit of doubt, then it has zero effects (as for the overall results as well as the results of particular groups). However, recent empirical evidence rather seems to demonstrate the fact that while differentiation has zero overall effects on average, it provides great academic improvement to high-track students. **Thus, differentiation seems to increase differences in educational achievement which in turn increases education inequalities** (Riordan, 2003: 189).

On the other hand, research has also demonstrated that the effects of differentiation depend on the specific ways it is practiced. For instance Gamoran (1992b) opined that students in academic programs are less advantaged at schools where grouping is flexible, rather than permanent. He also found out that more inclusive schools (those with higher proportions of students in academic programs) do better in overall educational attainment. Other researchers have concluded that the effects of differentiation vary by study courses. For example, Slavin's (1990: 480) review of existing research suggests that heterogeneous (non-differentiated) education may have *positive* effects for social science courses.

5.4.2 Other effects of differentiation

Since the proponents of differentiation mainly argue that this organizational design increases the effectiveness of the education process, researchers have focused on rather short-term educational effects, i.e. what students win and lose in terms of their academic ability and knowledge by enrolling in a certain group (see above). Apart from that, researchers have analyzed more long-term educational effects as well as those that are not directly related to education.

It has been demonstrated that students enrolled in academic programs have higher aspirations for further studies (e.g., Vanfossen et al., 1987), are more likely to enroll in tertiary education programs (e.g., Thomas et al., 1979) and have better odds of actually attaining tertiary education (e.g., Alexander et al., 1987). Students of academic programs are less likely to drop out of school (Gamoran & Mare, 1989). Of course, all those effects have

been controlled statistically for family socioeconomic background and numerous other factors.

The effects of differentiation on factors like self-esteem, positive attachment to school and delinquency have been studied as well. Quantitative research has failed to provide a clear answer, which was to a great extent due to the above-mentioned methodological issues. Nevertheless, ethnographic research (see review by Gamoran & Berends, 1987) has demonstrated that differentiation does substantially influence students' identity and self-esteem. For example, Schwartz (1981) showed that differentiation caused students to start calling themselves "smart", "dumb", "slow" or "bright" (see also Riordan 2003: 189).

Other effects of differentiation have been proven as well. For example, differentiation may undermine social cohesion. It influences political attitudes and participation (Paulsen, 1991). It also widens the gaps between different social groups because students tend to make friends with other students of the same programs (Eckert, 1989). This is based on shared experience and values as well as shared attitudes to school.

5.5 The mechanisms of differentiation effects

If we take the cognitive effects of differentiation for more-or-less proven, how can we explain them? What mechanisms underlie differentiation? There are three main theories in this respect: instructional, social and institutional (Lucas, 2008; Pallas et al., 1994).

According to the instructional theory, which seems to rely on the most solid empirical foundation, variation is caused by varying quantity and quality of educational content as well as varying pace of instruction in different educational tracks. Above all, it is apparent that students of academic tracks are taught based on a more demanding and extensive curriculum, compared to students of other tracks (Gamoran, 1989). Sometimes, the lower overall volume of instruction is quite explicit. For example, many schools spread the same algebra curriculum over one year in academic tracks and two years in non-academic tracks (Kelly, 2007). Thus, non-academic programs provide less education and slower pace of instruction. This fact is hardly surprising because "providing different students with varied education according to their needs" is the main idea of differentiation. Nevertheless, some recent research (e.g., Gamoran, 1993) suggests that even students of non-academic tracks might improve their educational achievement if they were approached like those of academic tracks. Since some tracks *a priori* reduce educational content and slow down pace of instruction, permanent differences between students arise and the students' education track flexibility is undermined.

It is not only educational content but also educational methods that matters. At first sight, the academic and non-academic programs seem to apply similar methods of instruction. For example, Nystrand & Gamoran (1997) found that the number of discussions basically does not vary across educational tracks. At the same time, however, they found that discussions in non-academic tracks often lacked focus. They also found that students in non-academic tracks, much more frequently than those in academic tracks, were given tasks like filling in blanks in a text, answering yes-or-no questions or correcting grammar and punctuation. Teaching methods in non-academic tracks were much more structured and placed high emphasis on formal rules and sanctions. This was supposed to help teachers better cope with and "control" the student population in less academic programs, yet it also bore the

risk of fragmenting instruction and especially making learning much less enjoyable for students. Strong structuring of instructional methods may mitigate teachers' fears and insecurities, yet it deprives instruction of its meaning, making it boring and tiresome and often diverting attention to unrelated issues (Page, 1991).

Teachers play a specific role as well. Beginners, less experienced and less motivated teachers are traditionally recruited for non-academic tracks (Kelly, 2008: 986). Thus, not only students but also teachers are differentiated in many schools (teacher tracking). Two less successful groups are paired here: "Teachers with less education, experience, and motivation are more likely to be assigned to low-track classrooms. Thus, teacher tracking pairs students who are the most difficult to teach with teachers who, in some ways, are least equipped to be successful" (ibid.). It is hardly surprising that teachers in non-academic tracks score less in satisfaction and self-actualization.

In general, teachers react negatively when assigned to a non-academic track. This is also because this group of students is more difficult to teach. For example, Caughlan & Kelly (2004) demonstrated that teachers who are very successful in academic tracks may be much less successful in non-academic tracks. They partially explain this finding by the fact that teachers in non-academic tracks tend to be recruited from different socioeconomic environments than their students, and thus have trouble identifying their needs, perspectives and interests. They are also prejudiced about their family background. This causes a "self-fulfilling prophecy" whereby children from disadvantaged families are considered *incapable* of success, teachers treat them as such and this, in turn, makes those children unsuccessful. Some teachers also take family background as an excuse and explanation for their students' weak educational achievement. Instead of designing instruction to compensate the disadvantages children bring from their homes, instruction is adapted to those children's *limitations* (Kelly, 2008: 986).

It cannot be argued that education in non-academic tracks has always a low quality and effectiveness. Gamoran (1993) identified three factors of success in non-academic tracks: when (a) instruction in non-academic tracks is not assigned to inexperienced teachers, (b) teachers do not use worksheets as their basic method of instruction and instead, work based on oral speech and discussion, (c) teachers have high expectations of all students.

The second type of explanations of tracking effects are based on the idea that different education programs provide different social contexts and social climates for learning, thus socializing students of different tracks in line with different norms and values and giving them different identities, attitudes and expectations. Above all, one must realize that by taking a non-academic track that prepares directly for entering the labor market, students become discouraged from getting good grades from the very beginning. For them, as opposed to students in academic tracks, it does not matter if they have A's or C's. Little effort is basically a rational strategy (Attewell, 2001; Kelly, 2008). In contrast, students in academic tracks are not necessarily better-behaved or more accommodating but their actions are much more ambitious and planned in subjects affecting their future careers[25].

[25] Schwartz (1981) exemplified this phenomenon neatly by describing the behavior of students in different programs. He found that students in high-track programs showed the same kind of misbehavior as low-track students, yet they did so outside classtime when their future educational

The above-mentioned fact is accompanied by peer pressure and peer group norms. According to the so-called differentiation-polarization theory (Hargreaves, 1967; Lacey, 1966), interactions within peer groups in non-academic tracks aggravate antischool attitudes. When the school labels students as "academically insufficient", they begin to seek another source of positive identity. If they are fortunate, they can find it in sports, cars etc. Peer groups have their own dynamic here. Members monitor each other's actions, guarding against and punishing for those actions and attitudes that are in conflict with the group's dominant norms, for instance, expressions of interest in schoolwork.

Finally, the third type of explanations of differentiation effects is based on institutional theories. They define institutions as cognitive constructions and permanent models of human behavior people take for granted and undisputed (Pallas et al., 1994). They hold that when a student is assigned to a certain education track, it becomes part of his/her "education history" and this assigning seems to suggest information about his/her abilities (Sorensen, 1984). While the act of assigning to an education track may bear no effect on his/her abilities, skills or attitudes, it continues to be present throughout his/her life because the act is generally believed to be justified[26]. In other words, if a student takes a certain track then this symbolically and publicly labels and classifies the students' qualities and abilities, from a collective perspective, and this label in turn, influences the perceptions and expectations of other members of the society, including teachers and parents (Pallas et al., 1994). More specifically, in making decisions about assigning to a certain program, people consider what education program the candidate comes from, rather than his/her real academic achievement.

5.6 Education policy and efforts to eliminate differentiation

Arguably, differentiation does not serve its declared purpose (increasing overall educational achievement); in the optimistic case, and bears many negative consequences, in the skeptical case. From a purely rational perspective, there is thus no strong argument for keeping differentiation in place. Thus, why does it still exist? Oakes (1992) mentions three types of barriers: technical, normative and political. By technical barriers Oakes understands the fact that the methods of instruction teachers grew up with and work with today were tailored for differentiated education. In order to eliminate differentiation (detracking) one cannot merely abolish it while keeping today's curriculum and teaching methods (Kelly, 2008). According to existing experience, a one-sided focus on "average students" disadvantages students on both poles (Rosenbaum, 1999). Different teaching methods (e.g., cooperative learning) are necessary for heterogeneous classes, and some balance in the extent and depth of the curriculum should be struck.

The normative beliefs of parents, teachers and schools constitute another obstacle. In particular, two interrelated statements are used in defense of differentiation (Kelly, 2008). First, students vary in their inborn abilities, a fact schools cannot affect. Second, the labor

careers could not be affected. During classtime, high-track students adhered to teachers' behavioral standards sensitively, as opposed to low-track students.

[26] In this respect Rosenbaum (1976) used a metaphor of "tournament mobility": if you succeed and win then you can go on and if you lose then you lose forever. Nevertheless, Lucas (1999) calls for caution in using such metaphors because there is a certain level of mobility between tracks.

market is differentiated and thus, various occupations are needed and few people are fit for every occupation. Consequently, schools should prepare students for the different labor market sectors and provide them with the exact skills they are going to need in life. To people holding these seemingly rational opinions, school differentiation in line with labor market differentiation appears as a logical solution and an effective practice (Oakes, 1992).

Political barriers constitute the third and final problem of differentiation. Differentiation causes the school to distinguish between "winners and losers". The winners are recruited from students in academic tracks whose parents usually have a higher socioeconomic status and, in turn, a stronger political stance. Those parents often have a personal stake in differentiation and lobby against detracking (Loveless, 1999b: 29), often arguing that they are not obliged to sacrifice their children's education for some ideological agenda or unverified education theory (Rochester, 1998). Parents may threaten to take their children out of the schools that are contemplating detracking. Such an exodus of better achieving students may lower the school's academic average and thus jeopardize its reputation. Ethnographic research on detracking also shows that parents with a higher SES tend to oppose detracking until some advantages for their children are preserved (Wells & Serna, 1996). Nevertheless, if such advantages continue to exist then the entire idea of detracking is undermined.

6. Conclusions

In awareness of the fact that short statements are somewhat simplifying, we will now attempt to formulate several conclusions arising out of state-of-art knowledge about the effects of education systems on the reproduction of education inequalities.

1. Despite persistent illusions about the ways education contributes to social justice, it is clear that education systems rather reproduce education inequalities (as well as other, education-related inequalities). However, different systems reproduce inequalities at varying rates and feature different inbuilt mechanisms of reproduction. Therefore, some changes are possible in this respect. At the same time, we must admit the fact that education reforms in many countries have often completely failed to reduce inequalities or even produced unintended effects. This, however, cannot give us an excuse for doing nothing. In contrast, it should stimulate our thinking about the kinds of measures that might be really effective. Arguably, some examples of successful reforms exist: Sweden, Finland and Spain that underwent transitions from differentiated to undifferentiated education have strongly under-average levels of variance in the educational achievement of 15-year-olds, compared to the rest of OECD countries (OECD, 2007).
2. Education systems are highly resistant to any attempted reforms towards reducing education inequalities. Actors with stakes in existing situation are usually able to find other mechanisms of reproduction if existing ones are constrained by reform[27]. This also means that whenever a public policy to reduce education inequalities is prepared, one

[27] Lucas's (2001) theory of effectively maintained inequality should be mentioned here. According to the theory, elites will always find a way of offering better educational tracks to their children. If no *quantitative* advantages are available (i.e., higher educational attainment such as tertiary education in a society where most people attain lower levels) then they are bound to assert *qualitative* advantages, i.e., place their children in schools of higher quality and prestige that receive better ratings and offer better educational and professional career prospects.

should be well acquainted with the opinions and strategies of key actors because they can be expected to block and circumvent any reforms in this area. In some cases, their resistance may be caused by insufficient information but more often it arises out of the personal stakes in the status quo.

3. While many mechanisms of inequality reproduction are apparent and well-known (for example, the sorting of students between various types of schools), the severity and extent of inequality reproduction are usually obscured. On the other hand, empirical evidence is sometimes ambiguous and even researchers may differ in their opinions about the extent and quality of education inequalities. Yet, surprising academic achievement often occurs, showing that the problem's roots are deeper than it seems to most laypersons. Characteristically, an overwhelming majority of people pursuing a deep and long-term interest in the issue of education inequalities believe that the issue is very important and calls for solutions[28]. There is less agreement on the ways the issue should be addressed.
4. We have varying degrees of knowledge about the mechanisms of inequality reproduction. In some areas (such as differentiation effects at the school and class levels), an immense amount of information has been gathered, while we know very little and necessitate additional information in others (the effects of education system standardization on inequality level and relevant mechanisms). Nevertheless, we will never know everything with absolute certainty. While one should always proceed upon careful consideration and with maximum possible knowledge of data, one cannot wait for "definitive answers and conclusions", as often advised by reform opponents. The research on differentiation effects exemplifies the fact that while more research enables more robust conclusions, it also provokes even more research that contradicts it and supplies arguments to opponents of change.
5. There are many methodological issues, not only with respect to the determination of differentiation effects[29] but also with respect to the mechanisms of education inequalities in general. There are many different factors and many different levels of the problem, and therefore, research results strongly depend on the methods chosen. There are no simple and universal conclusions (e.g., standardization decreases education inequalities). Instead, conclusions strongly depend on the ways key variables are operationalized and measured and on the set of contextual variables we are able to introduce in our model. Thus, we cannot avoid methodology and theory issues when thinking about the possible measures to reduce education inequalities. Theory, methodology, empirical evidence and practical implications are all interrelated.

7. References

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[28] There are also exceptions, for example, Tom Loveless (1999b), former professor at Harvard University and now director of the Brown Center on Education Policy. But they are really exceptions.

[29] See review by Betts & Shkolnik (2000b).

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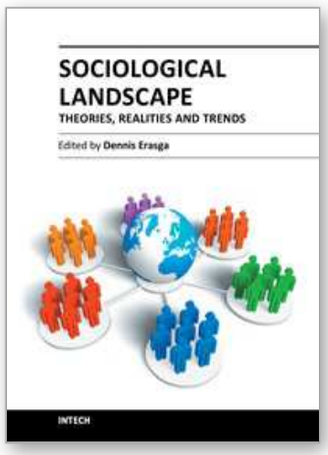

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