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From Heterogeneities to Inequalities

Educational Poverty in a Comparative Perspective: Theoretical and Empirical Implications

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DFG Research Center (SFB) “From Heterogeneities to Inequalities”

Whether fat or thin, male or female, young or old – people are different. Alongside their physical features, they also differ in terms of nationality and ethnicity; in their cultural preferences, lifestyles, attitudes, orientations, and philosophies; in their competencies, qualifications, and traits; and in their professions. But how do such heterogeneities lead to social inequalities? What are the social mechanisms that underlie this process? These are the questions pursued by the DFG Research Center (Sonderforschungsbereich (SFB)) “From Heterogeneities to Inequalities” at Bielefeld University, which was approved by the German Research Foundation (DFG) as “SFB 882” on May 25, 2011.

In the social sciences, research on inequality is dispersed across different research fields such as education, the labor market, equality, migration, health, or gender. One goal of the SFB is to integrate these fields, searching for common mechanisms in the emergence of inequality that can be compiled into a typology. More than fifty senior and junior researchers and the Bielefeld University Library are involved in the SFB. Along with sociologists, it brings together scholars from the Bielefeld University faculties of Business Administration and Economics, Educational Science, Health Science, and Law, as well as from the German Institute for Economic Research (DIW) in Berlin and the University of Erlangen-Nuremberg. In addition to carrying out research, the SFB is concerned to nurture new academic talent, and therefore provides doctoral training in its own integrated Research Training Group. A data infrastructure project has also been launched to archive, prepare, and disseminate the data gathered.

Research Project A5 “The Welfare State and Education: An International Comparison of Educational Poverty”

This project studies the determinants and effects of educational poverty from an international comparative perspective. It views educational poverty as a central concept in the contemporary welfare-state debate around intersections between social policy and education policy. Specifically, it addresses the following questions:

- How can educational poverty be defined, measured, and described? Although different approaches are available, they have seldom been applied to conduct comparative analyses from an international perspective. As part of the project, these approaches will be examined and compared.
- How can the emergence of educational poverty be explained? Here, educational poverty is viewed as one specific aspect of educational inequality. The study investigates how the relationship between the heterogeneity of individual characteristics and patterns of unequal access to education vary across different institutional contexts.
- What are the effects of educational poverty? The project studies the degree to which the educationally disadvantaged are affected by unemployment, poor positions on the labor market, and low pay. It also asks whether national differences in the frequency of these effects can be attributed to differences in institutional framing conditions.

The project combines a broad-based comparison between nations with a more detailed, longitudinal, nation-based analysis. The institutional framing conditions are mapped by means of a specially developed macro database. Together with micro data from the International Adult Literacy Survey (IALS), this will serve as the basis for multilevel empirical analyses of the determinants and effects of educational poverty. For Germany, more detailed longitudinal analyses will be carried out using data from the German Socio-Economic Panel Study (SOEP).

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**Educational Poverty in a Comparative Perspective:
Theoretical and Empirical Implications**

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Keywords: Educational poverty, educational inequality, welfare state, poverty measurement

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1. Educational Poverty in the Welfare State¹

Current concepts of the welfare state such as that of the social investment state strengthen the perspective that education is an integral part of social policy (Giddens 1998). This view is also found in classical approaches to the welfare state where education is discussed from a perspective of social rights (Marshall 1950) as well as in more recent approaches which address education from a welfare regime perspective (Willemse/de Beer 2012). However, the social investment perspective in particular argues that in modern knowledge-based societies, education is a decisive factor for ensuring access to work, income and social security. Consequently, investment in education should be a key goal of the welfare state. This discussion, focusing on intersections between social and educational policy (Nikolai 2007, Busemeyer/Nikolai 2010), is closely related to the concept of educational poverty (*povert  d'istruzione/Bildungsarmut*) proposed by Italian economist Daniele Checchi and German sociologist Jutta Allmendinger (Checchi 1998, Allmendinger 1999, Allmendinger/Leibfried 2003). In analogy to the general notion of poverty, educational poverty is understood as a low level of education that is considered to be unacceptably low in a society. In contrast to research on educational inequalities which is primarily concerned with inequalities of opportunity, research on educational poverty focuses on inequalities of condition. Consequently, and this is stressed by Allmendinger in her original sketch of educational poverty (1999: 38f), the state of educational poverty requires social policy intervention. Educational poverty is not just a new term for a low level of education or the lower part of the educational distribution but a normative concept rooted in an understanding of poverty as an unacceptable state in a particular society.

Although the concept of educational poverty was first introduced to the literature over ten years ago, the theoretical or normative implications of the concept have still not been discussed in greater detail, nor has a full consensus on the definition and operationalisation of educational poverty been reached. Both Checchi (1998) and Allmendinger (1999) develop the notion of educational poverty in the context of general poverty research. Checchi (1998) refers extensively to Amartya Sen's capability approach. Allmendinger's (1999) understanding of educational poverty is rooted in the living conditions approach (*Lebenslagenansatz*) which has provided the theoretical foundation for social reporting in Germany since the early 1980s. It stresses the view that poverty cannot be understood

¹ We wish to thank the participants of the SFB 882 opening conference and of the ESPAnet conference in Poznan, in particular the discussants Heike Solga and Margitta M tztke for helpful comments.

simply as a lack of resources but that poverty research needs to evaluate current living conditions. Education is regarded as one dimension of these, along with health, housing, work or income (Hauser 1981, Voges et al. 2003). These references to the broader poverty literature were not elaborated in the subsequent discussion on educational poverty. Furthermore, research on defining and measuring educational poverty in a comparative perspective is scarce. However, in order to gain a meaningful understanding of educational *poverty* (not just as a low level of education), it is necessary to examine in detail the question of where to draw the line between those who are regarded as poor and those who are not, a question which has been discussed in general poverty research for decades.

The present paper discusses educational poverty in the context of welfare state change and how it is related to a multidimensional perspective of poverty. It begins by examining how the notion of educational poverty differs from that of educational inequality (Section 2). In contrast to the latter, educational poverty is by definition an unacceptable state in a society, implying the need for interventions. Section 3 discusses the concept of educational poverty in the context of general and multidimensional poverty research. This leads to the question of how to measure educational poverty (Section 4). Here, the main focus is on approaches which are suitable for measurement across different contexts, i.e. across countries and across time. Section 5 provides some examples of how these approaches can be applied, using data from different sources. Section 6 summarises and provides an outlook on further research.

2. Educational Poverty and Educational Inequality

Just as the general discussion on poverty overlaps with that on inequality, there are also links between the discussions on educational poverty and educational inequality. But there are crucial differences in the theoretical foundations and implications of the two concepts which will be discussed briefly in this section (see Table 1 for a more detailed discussion, Ferger 2013). As mentioned above, from a perspective of social justice, the concept of educational poverty stresses the aspect of inequality of condition while research on educational inequalities focuses mainly on inequality of opportunity. This is a consequence of different normative foundations of these two concepts. The inequality of opportunity view is rooted in the meritocratic understanding of educational achievement as a central factor for status attainment in modern societies. Inequality is perceived as legitimate if it is backed by differences in educational achievement, as long as the competition within the education system is regarded as fair. This understanding is reflected in standard definitions of equality

of opportunity which focus on the effects of schooling.² Moreover, in their classic article on stratification, Davis and Moore (1945) regard inequalities as functionally necessary because they provide the basis for a mechanism to allocate scarce ‘talent’ to important positions in a society. Although various aspects of this classic functionalist view have been heavily criticised, the notion that a certain degree of inequality in societies may be necessary is widely accepted (for instance, because inequality provides incentives to invest in human capital).

Table 1: Educational Inequality/Poverty - Theoretical foundations and implications

	Educational inequality	Educational poverty
Concept of social justice	equality of opportunity	equality of condition
Functional necessity	functional (meritocratic perspective)	dysfunctional
Social desirability	basically accepted in society (legitimate within context of fair competition)	unaccepted in society (illegitimate)
Measurement concept	aggregate measurement, correlations between group characteristics and educational achievement	personal measurement, individual identification of educational poor
Main focus of analysis	(retrospective) causes of educational inequalities	current level of educ. poverty / welfare state interventions
Policy implications	create equal educational opportunities	abolish educational poverty, ensure minimum standards

Source: Revised version of Fergler 2013 (Table 1).

In contrast, educational poverty refers to a non-acceptable state in a society, a level of education which falls below a socially defined minimum. Educational poverty is based on an understanding of inequality of condition. It may be a consequence of inequality of opportunity, but not necessarily (Solga 2012). Hence, the process of how educational poverty evolved is not relevant for evaluating whether an outcome is regarded as socially acceptable or not. If we label a state with the term ‘poverty’, this implies that it is illegitimate. Therefore, it

² In the seminal Coleman Report, the main focus is on “equality of results, given the same individual input” (Coleman 1968: 16f): Given that student characteristics do not differ, results do not differ. According to this definition, differences in results, for instance, by family background, do not contradict the principle of equality of opportunities if these differences are a consequence of differences in student characteristics. In contrast, a second definition describes equality of opportunity as “equality of results given different individual inputs” (Coleman 1968: 17). Equality of opportunity is only achieved if schools compensate for differences in starting conditions. According to the first definition, equality of opportunity is understood as non-discrimination, while according to the second it is seen as compensation. For a number of reasons, for example, that both definitions are plausible but contradictory, in a later article, Coleman concludes that equality of educational opportunity “is not a meaningful term” (1975: 27). Others stress the notion of the different temporality which is inherent in these two definitions: “Thus there is, in the notion of equality of opportunity, a ‘before’ and an ‘after’: before the competition starts, opportunities must be equalized, by social intervention if need be, but after it begins, individuals are on their own” (Roemer 1998: 2).

is crucial to distinguish between a low level of education and educational poverty since only the latter – in a social policy perspective – directly implies the need for interventions. However, this requires knowing where to draw the line between low and illegitimately low levels education, which will be discussed in detail in the following sections of the present paper.

At a policy level, the implications of educational inequality and educational poverty differ fundamentally. Policies addressing the former are concerned with creating conditions of fair competition for all social groups in the process of educational attainment. Creating such conditions is a core concern of educational policy. One example is the introduction of comprehensive school systems instead of stratified or tracked systems in order to reduce the impact of socially selective transitions within the system. Another example is policies aimed at equalising the starting conditions of children from different groups by introducing a compulsory or at least easily accessible form of pre-school learning. In contrast, policies aimed at abolishing educational poverty follow the logic of social policy interventions. Such policies address individuals falling below a minimum level of education, however this may be defined. In analogy to tackling poverty in general, the guideline for such policies is a socio-cultural minimum which is guaranteed in welfare states.

3. Educational Poverty in a Perspective of General Poverty Research

In general poverty research, there is no overall consensus about the question of how to define poverty. However, reference is often made to the official EU poverty definition which states that “[p]eople are said to be living in poverty if their income and resources are so inadequate as to preclude them from having a standard of living considered acceptable in the society in which they live. Because of their poverty they may experience multiple disadvantage through unemployment, low income, poor housing, inadequate health care and barriers to lifelong learning, culture, sport and recreation. They are often excluded and marginalised from participating in activities (economic, social and cultural) that are the norm for other people and their access to fundamental rights may be restricted” (European Commission 2004: 10). Poverty is defined as a relative concept with reference to a multidimensional understanding of living conditions in a given society at a given point in time. When this broad definition is used, additional questions evolve. Which specific aspects of the standard of living are relevant as a reference point for poverty measurement? And where do we draw the line between an acceptable and unacceptable standard of living?

3.1 The Role of Education in Multidimensional Poverty Concepts

These questions have been widely discussed in poverty research for a long time now, particularly in the last few decades with an emphasis on a multidimensional understanding of poverty. In this literature, a certain level of education is either perceived as a relevant resource or one aspect of acceptable living conditions. This applies most to Sen's (1987) capability approach and the living conditions approach (*Lebenslagenansatz*, Voges et al. 2003). These approaches stress the aspect of agency, the non-material dimensions of poverty and the recursive relationship between resources and living conditions. In addition, Townsend's (1979) pioneering study on poverty refers to education as an aspect of living conditions which was initially measured using indicators on "diet, clothing, fuel and light, home amenities, housing and housing facilities, the immediate environment of the home, the characteristics, security, general conditions and welfare benefits of work, family support, recreation, education, health and social relations" (1979: 249-251). All three approaches share the view of poverty as a multidimensional phenomenon and criticise the hitherto predominant resource approach which derives a notion of living conditions purely from the available level of (economic) resources (Ringen 1988). Although education is only one aspect within these multidimensional concepts of poverty, it is prominently discussed in the living conditions approach as well as in the capability approach. The living conditions approach clearly states that education is a resource, for instance, to be used to obtain a certain position in the labour market, but also regards it as an independent dimension in a multifaceted concept of living conditions, as an aspect of personality and social identity (Voges et al. 2003: 57).

From Sen's capability approach, we can derive a similar perspective on education. Although Sen's background is in welfare economics and he is not explicitly an educational researcher, his theory can be used to sharpen the meaning of education in a social policy perspective. Here, Sen's approach is not interpreted as a fully specified theory. His concept is seen as a framework which helps to evaluate people's well-being and social arrangements (Robyens 2005), for example, the well-being of the educational poor and arrangements to reduce educational poverty. The crucial distinction in Sen's theory is the differentiation between capabilities and functionings. "A functioning is an achievement, whereas a capability is the ability to achieve. Functionings can be understood as different aspects of living conditions. Capabilities, in contrast, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead" (Sen 1987: 36). Functionings do not matter *per se* because they always imply an element of choice. Education includes the notion of opportunity and freedom to choose but having obtained an education is also an achievement.

These considerations show how the capability approach can integrate the competing approaches in the field of general poverty research mentioned above. Education may be seen as a resource which increases the ability to achieve (capability) and as an aspect of the living conditions (functioning).

The dual understanding of education as a resource and a separate dimension of living conditions can also be found in the different approaches towards a multidimensional measurement of poverty. Studies in the tradition of the deprivation approach (e.g., DeWilde 2004: 336) regard education primarily as a resource for obtaining a certain standard of living or as a poverty determinant. Conversely, in the living conditions approach, education constitutes an independent dimension of living conditions, along with other dimensions such as income, work, housing and health (Hauser et al. 1981). Studies inspired by the capability approach follow a similar route. For instance, Bourguignon and Chakravarty regard multidimensional poverty “in terms of functioning failures, or, more precisely, in terms of shortfalls from threshold levels of attributes themselves” (2003: 26f), with education being one of these attributes. Multidimensional poverty research and the current welfare state debate offer two different perspectives on education. Social investment in a strict sense entails a resource perspective on education. Investment in education is regarded as a means to enable labour market inclusion and therefore to reduce social problems such as unemployment and poverty. In a wider perspective, education is seen as one aspect of social inclusion, not necessarily linked to the labour market.³

3.2 Definitions of Educational Poverty

In their conceptions of educational poverty, Checchi (1998) and Allmendinger (1999) refer to multidimensional poverty as well as to the welfare state literature. Allmendinger stresses the necessity of taking into account material and non-material aspects of social deprivation (1999: 35) and refers explicitly to the living conditions approach. Checchi positions the concept of educational poverty in the framework of the capabilities approach (1998: 258f). This has been reinforced by multidimensional poverty researchers (Brandolini/D'Alessio 1998: 29f) who refer to the concept of “*povertà d'istruzione*” as a reference point in the discussion of education as a separate functioning in addition to health, social relations, labour market status, housing and economic resources. While, on the one hand, Checchi and Allmendinger regard education as a separate dimension within a multidimensional concept of poverty, on the other hand, however, they also allude to the notion of education

³ Furthermore, current research in the social rights tradition discusses the aspect of decommodification through education (Willemse/De Beer 2012). Education systems provide a high degree of decommodification if wide access to (higher) education is provided as a right.

as a crucial resource for inclusion into the labour market (and other life domains). Here, education is regarded as a factor that positively affects the ability to achieve. In particular, Checchi (1998: 265ff) extensively addresses returns to education and the higher risk of low wages among the educational poor. In conclusion, he stresses the aspect of a dual deprivation ("*doppia deprivazione*", 1998: 272) of the educational poor, namely, at the level of functionings and earning capacity.

Drawing on this, we will use a general definition of educational poverty that includes the notion of education as a resource and as a separate aspect of living conditions. In both perspectives, educational poverty is defined as a level of education below a threshold that is socially defined as a minimum. If education is perceived primarily as a resource, this minimum is defined with reference to the level of education required for social inclusion in different life domains. In the educational poverty literature, the example of labour market inclusion is discussed most prominently (Solga 2011: 415). If we focus on this domain, educational poverty is a level of education associated with a high risk of unemployment or wages too low to make ends meet. It is more than obvious that factors other than a low level of education also contribute to such labour market risks. Consequently, we cannot simply conclude that it must be a result of poor education if a person is excluded from the labour market or other life domains. Instead, we need to examine socially defined levels of education deemed to be sufficient for inclusion in different domains. Poverty research offers a number of approaches to deriving poverty thresholds which will be discussed in the following section. We face a similar task when we regard education as an aspect of living conditions in its own right. Here, we need to ask what minimum level of education is acceptable in a given society. In contrast to the resource perspective, this level is not derived from minimum qualifications needed for the labour market, etc. but from an understanding of education as an integral aspect of personality and social identity.

With reference to a socially defined minimum standard, the present study follows a broad consensus in poverty research, regarding poverty in rich countries as a concept that is relative to a specific context, i.e. a country or region at a given point in time (Ringen 1988). In contrast, Checchi (1998), Allmendinger (1999) and Allmendinger and Leibfried (2003) distinguish absolute and relative measures of educational poverty. In a national perspective, they regard compulsory schooling requirements (in terms of years of schooling or certificates) as an absolute minimum level of education. However, compulsory schooling regulations differ across countries and are subject to change over time. Therefore, educational poverty thresholds based on compulsory schooling regulations refer to a given social context which we regard as the main criterion for relative poverty (see also the

discussion on political poverty thresholds in Section 4 below). Allmendinger and Leibfried (2003: 66) discuss absolute educational poverty also in an internationally comparative perspective and define the illiterate as educational poor. Particularly in countries where a relevant percentage of the population has not acquired any formal education at all (UNESCO 2010), a focus on absolute educational poverty is required. In countries where high educational attainment is the norm, a focus on relative educational poverty seems more appropriate.

4. Measurement of Educational Poverty

In our discussion of poverty definitions, we have stressed the understanding of educational poverty as a relative concept which refers to education as a resource to facilitate social inclusion as well as a dimension of inclusion in its own right. In this section, we consider how educational poverty can be measured, in particular, in a comparative perspective which is sensitive to differences between countries and changes over time. A number of authors have proposed measures of educational poverty (Checchi 1998, Allmendinger 1999, Allmendinger/Leibfried 2003, Solga 2011, UNESCO 2010). Before we give an overview of these and other measures, the general features of poverty measures will be discussed. We need to determine how to measure education and where to draw the line between acceptable and non-acceptable educational requirements. The first refers to different indicators of education, the latter to different poverty lines. The poverty literature is replete with discussions on the choice of indicators and poverty thresholds (e.g., Ringen 1988, Andreß 1999, Nolan and Whelan 1996, Atkinson et al. 2002). And although poverty research has not fully succeeded in providing a broadly accepted poverty measure beyond the rather pragmatic income poverty standards, it provides a useful framework for discussing the above-mentioned questions with regard to educational poverty.

4.1 Poverty Indicators and Poverty Thresholds

Before the question of poverty thresholds is addressed, the issue of indicators will be briefly discussed. The choice of indicator for measuring educational poverty depends to a large extent on our understanding of education. Education is a process that provides students with skills and knowledge. It is an important aspect of socialisation and is associated with different valuable life experiences (Braun/Müller 1997: 167ff). The widely used indicators of education such as educational certificates, measured competences and years of schooling depict distinct sub-dimensions of a broader concept of education. Educational certificates and years of schooling can only be used to measure the level of education obtained within the education system. Consequently, the meaning of these indicators differs across systems.

While international classifications such as ISCED or CASMIN make it possible to convert national educational certificates into international standards (Braun and Müller 1997, Kerckhoff et al. 2002), there is no such standard for measuring years of education. Given the differences between educational systems, years of education may have a rather different meaning in different countries. This is most obvious when stratified and non-stratified educational systems (Allmendinger 1989) are compared. In non-stratified educational systems, years of education reflect the sequence of school continuation decisions and are therefore regarded as an appropriate proxy for educational achievement. In stratified systems, for instance, in Germany, educational achievement differs across educational tracks which do not necessarily differ greatly in duration. Therefore, in such systems, years of education are often regarded as an inadequate proxy for educational achievement, which must be kept in mind when interpreting the results of cross-country research based on this indicator.⁴ What is neither reflected in the years of education indicator nor in classifications such as CASMIN or ISCED is how special education is organised (Richardson/Powell 2011). Although this is a highly relevant characteristic of educational systems for the analysis of educational poverty, we cannot take it into account using standard indicators of education.

Large-scale studies such as PISA, the International Adult Literacy Survey (IALS) or the recently implemented Programme for the International Assessment of Adult Competences (PIAAC) are mainly based on measured competences which are perceived as comparable across education systems and across time, a view which is not undisputed (Hamilton/Barton 2000). In contrast to the indicators discussed so far, competence scores do not merely reflect the formal result of attending school. They are meant to provide a measure of competences, normally restricted to some sub-dimensions (literary, maths and natural sciences in the case of the PISA study). Years of schooling, educational certificates and competences most obviously measure different aspects of education. Years of schooling reflect the time spent in the education system. Educational certificates reflect the differing outcomes of different educational tracks or constitute – in a credentialist view – a form of social closure (Collins 1979). Test scores reflect differences in measured competences and these are often interpreted – from a human capital perspective – as a determinant of economic productivity (Murray et al. 1998). All three measures have been used in previous studies on educational poverty (Checchi 1998, Allmendinger 1999, Allmendinger and Leibfried 2003, Saccone 2008,

⁴ The measure of schooling seems more appropriate in countries where compulsory schooling is not fully implemented, i.e. where a larger share of the population does not acquire any or very little formal education. In a global perspective, UNESCO (2010) uses less than two or less than four years of schooling as educational poverty indicators.

UNESCO 2010). Section 5 will show how outcomes differ when using these different indicators.

Choosing an adequate indicator is the first step for constructing a poverty measure. Defining where to draw the line between those who are regarded as poor and not poor is a second, even more crucial, step. In the following, we discuss the choice of poverty thresholds and differentiate between four approaches: relative, subjective, expert and political poverty thresholds. The most common approach – at least in the European context – is to use relative poverty thresholds. As mentioned above, relative thresholds reflect the idea that poverty can only be determined with reference to the situation in a given society at a given point in time. The reference point is normally set by a measure of central tendency of the poverty indicator such as the mean or the median. Income is the most frequently used poverty indicator but there are also relative poverty thresholds based on indicators such as consumer expenditure or other measures of living standards (Andreß et al. 2001). People are regarded as poor if – for instance – their income falls below a certain percentage of the average value. In the EU context, individuals are regarded as poor (or at risk of poverty) when their income falls below 60 percent of median income. While using a measure of central tendency as a reference point is well grounded in the relative understanding of poverty, the choice of a certain percentage of this measure as a poverty threshold is less defensible. Therefore, the term ‘statistical poverty threshold’ often seems more adequate. It is an open question whether a certain percentage of a statistical measure can be interpreted as a meaningful poverty line or just as the threshold which divides the upper and lower parts of a distribution. Bearing in mind this caveat, relative poverty thresholds are applicable to different contexts, which is one reason which explains the popularity of the approach. Given the vast differences in the level of education across countries and across time (i.e. educational expansion) the relative approach is also appealing for measuring educational poverty. However, with indicators of education, the approach is not as easy to implement as with measures of income.⁵

⁵ Allmendinger (1999: 40) defines relative educational poverty in analogy to income poverty but also refers to persons in the lowest quintile or quartile in the educational distribution of educational certificates as the educational poor. With regard to measured competences, the lowest decile of the distribution is defined as the educational poor according to relative standards (Allmendinger/Leibfried 2003: 68). Percentile thresholds are not normally considered to be relative poverty thresholds because by definition they result in constant levels of poverty. Solga (2011: 416) uses the national or international mean of measured competences minus a standard deviation as a relative poverty threshold. Using this threshold has the effect that – given a constant mean – a higher dispersion of measured competences is associated with a lower poverty threshold.

The use of relative poverty thresholds has often been criticised because it does not provide a satisfactory answer to the question why the poverty line is set at 60 percent of the median and not at any other value. It is certainly difficult to argue that a statistical measure provides the information necessary to discriminate between levels of education which are perceived as acceptable or not acceptable in a given society. In the field of income poverty research, the subjective poverty line approach (van Praag 1971) has added insights to the question of where to draw the line between acceptable and non-acceptable levels. Subjective poverty lines are based on data collected in population surveys where respondents are asked about perceived minimum levels of income or – in the case of the related consensual deprivation approach – necessary goods and services (Mack and Lansley 1985). With regard to educational poverty, one might ask which competences and certificates are deemed to be necessary (Böhnke 2000). However, research on subjective income poverty lines has shown that respondents take their personal standard of living as a reference point, which usually results in unrealistically high poverty thresholds. It is an open question if a similar effect is to be expected in the case of subjective educational poverty thresholds.

A third approach to define a poverty line is the use of expert assessments. Minimum consumption standards are most widespread – based on expertise on minimum needs of nutrition, housing, clothing, etc. – in the form of a basket of goods, an approach which Rowntree (1901) pursued in his pioneering study on poverty in England. In education research, an expert-approach is found in large-scale assessments such as PISA, IALS or PIAAC where minimum competence levels are defined on the basis of complex competence assessments. These assessments not only provide overall metric scores but also competence categories which translate the abstract scale of competences into ordered categories defined by requirements deemed necessary in a given society. For instance, individuals who fall into the lowest competence category in the PISA study are regarded as an ‘at-risk’ group and individuals who are just above the lowest threshold as a potential ‘at-risk group’ (Stanat et al. 2002). The former group consists of pupils who are not able to read and comprehend texts to an adequate level and are therefore very likely not to secure an acceptable position in the vocational training sector or the labour market. Consequently, studies on educational poverty use this threshold as a poverty line (Allmendinger/Leibfried 2003, Solga 2011, Teltemann/Windzio 2013) which we regard as an expert threshold. However, a closer look at the methods used to obtain the competence scale shows similarities with how relative (statistical) thresholds are set. When the test is constructed, a difficulty is assigned to every test item based on the likelihood that the item will be correctly answered by the population. Thus, the competence scale indirectly refers to the distribution of competences in the population and cannot be considered to be an absolute or purely

expert-based standard. However, as the thresholds are highly dependent on how the test is constructed, we will refer in the following to this type of educational poverty line as an expert poverty line. A second characteristic distinguishes these poverty lines from relative poverty lines. Relative standards most often refer to the national context (see also the discussion above), while the expert poverty lines derived from international competence studies refer to a supranational standard (normally defined by a set of OECD or similar countries). These poverty lines implicitly assume the same minimum standard of competences across countries. In education research, this approach has been criticised as culturally blind (see, for example, Hamilton/Barton 2000). From a poverty research perspective, it collides with the still predominant view that the living conditions in nation states provide the main reference point for poverty measurement. Consequently, measures of educational poverty based on expert or relative thresholds are expected to differ across different contexts. In Section 5, we will see how the picture of educational poverty differs when using supranational expert poverty lines compared to national relative poverty lines.

A fourth approach to defining a poverty line is using legislatively defined minimum thresholds (e.g., level of social assistance, minimum pensions). These thresholds are the expression of legal norms on what is acceptable and non-acceptable in a given society. It can be argued that these political thresholds reflect a widely acknowledged understanding of minimum standards which are legitimised by parliament and thus indirectly by the electorate. In many cases, expert thresholds are at the core of political poverty thresholds. There is, however, a relevant difference. While expert thresholds are evaluated and criticised by scientific means, political thresholds need to be legitimised in the political process. In analogy to the use of minimum income standards, a number of studies on educational poverty interpret compulsory schooling laws as a reference for defining the poverty line (e.g., Checchi 1998, Allmendinger 1999, Saccone 2008). In the literature on educational poverty, these thresholds are often labelled as absolute poverty thresholds because they refer to a politically determined absolute minimum of schooling (see the discussion in Section 3.2). In contrast to this view, we argue – following the common understanding of relative poverty – that compulsory schooling thresholds are inherently relative as they refer to desirable educational standards in a given society, thus differing across regions and subject to change over time. Political educational poverty thresholds normally refer to compulsory schooling regulations in a given society. However, within its Europe 2020 strategy, the EU has defined the goal of reducing the share of young adults without or with a low educational qualification to 10

percent or less (Council of the EU 2009).⁶ It remains to be seen whether the minimum educational standard, which is inherent to this aim, achieves wider acceptance across member states. If it does, this would imply a shift from a national to a supranational point of reference.

4.2 Different Thresholds Across Different Populations?

A general question in poverty research is which group is regarded as a reference. Most often, this is the population of nation states. However, in Europe, the population of smaller or larger entities (regions or the EU) are discussed as potential reference groups (Fahey 2007). This discussion is based on the question of whether nation states or other entities are the primary contexts which define the living conditions and the context for comparisons of one's own living conditions with those of others. Using political thresholds to define educational poverty normally means regarding the education level of the population in a nation state as the reference point (as supranational standards of compulsory schooling have not yet evolved). As mentioned above, this view is not shared when the competence level of 'at-risk groups' in large-scale assessments is used as a poverty threshold. These thresholds do not differ by national context but define a supranational standard. In Section 5, these thresholds will be compared with relative thresholds which take into account the distribution of measured competences in a given country.

In contrast to studies on general poverty, research on educational poverty needs to take into account a second type of differences between groups, namely, differences between cohorts. In the course of educational expansion, capabilities related to certain levels of education have changed. This aspect is well known from research on educational expansion (Shavit/Blossfeld 1993, Solga 2002, Brynin/Longhi 2006) but has not been addressed extensively in previous research on educational poverty because these studies often examine age-homogenous groups such as PISA cohorts (Allmendinger and Leibfried 2003). When the full age range of a population is included, the question arises whether we need to define cohort-specific reference groups (Checchi 1998). If we regard education primarily as a resource for labour market inclusion, cohort-specific thresholds would be justified if labour market positions were highly dependent on the first position in the labour market. Under this assumption, labour market positions strongly depend on competition between cohorts of labour market entrants, i.e. the reference point for one's own education is primarily the cohort-specific and not the general distribution of education. With a focus on educational poverty, this perspective is theoretically grounded in mechanisms such as displacement,

⁶ See Allmendinger et al. (2010) for a discussion on similar aims within the earlier Lisbon Strategy.

stigmatisation and disqualification of the less well-educated, in particular, less well-educated labour market entrants, in the course of educational expansion (Solga 2002, Gesthuizen et al. 2009). However, the discourse on life-long learning provides an opposing view as it stresses the comparison of educational levels across and not primarily within cohorts. From this perspective, cohort-specific thresholds are counter-intuitive. Similar considerations apply if we understand education as a dimension of living conditions in its own right. If the level of compulsory schooling changes over time, we might opt for a cohort-specific norm for educational credentials. With other aspects of education such as basic competences, the standard within the general population is more likely to provide the reference point.

Given different indicators of education, different approaches to deriving poverty lines and different choices for defining a reference population, there are a number of approaches to measuring educational poverty. Some of these approaches may be ruled out using theoretical reasoning (with regard to the research question). Still, the choice of a single poverty measure seems unlikely to be justified on theoretical or analytical grounds only. Therefore, the choice of each poverty measure is also based on normative judgements. Consequently, often more than one measure is used in poverty research to evaluate how the choice of a specific measure influences substantial results. Section 5 below presents some results on educational poverty using different poverty measures.

5. Measurement of Educational Poverty in a Comparative Perspective: Exemplary Applications

In this section, we provide some exemplary results using the measures of educational poverty discussed so far.⁷ The main aim of these analyses is not to provide an overview on the current incidence of educational poverty but to compare how results are affected when we use different measures, in particular, when we apply a comparative perspective. We will also focus on potential problems of the selected measurement approaches. We use data from different sources which, when combined, contain three different measures of education (educational qualifications, years of education and competence scores) and enable us to provide results across countries and years: 1. Data from the International Adult Literacy Survey (IALS) which covers about 20 countries (Statistics Canada, n.d.). The data collection took place in the mid-1990s. IALS is the predecessor of the Programme for the International Assessment of Adult Competences (PIAAC) which is currently implemented. Since PIAAC data has not yet been fully released for secondary analyses, IALS is the only available data

⁷ This section draws mainly on Lohmann (2013).

source which contains adults' competence scores for a larger sample of countries. We primarily use IALS information on measured competences and years of education. 2. Data from the German Socio-Economic Panel Study (SOEP) which covers the German population aged 17 years and above since 1984 (Wagner et al. 2007). Although most of the data are collected prospectively, the SOEP contains a retrospective life course questionnaire with information on education which we use to obtain measures of years of education.⁸ We use these data primarily to provide evidence on trends in years of education by formal qualification since the 1980s. For an analysis of the current situation in Germany other data such as the National Educational Panel Study (NEPS) would certainly offer a better choice of indicators. 3. Published aggregate data from various sources (Eurydice, Eurostat, German Official Statistics) are also used. The overview is organised as follows. First, potential caveats of using measures of educational poverty in a trend perspective are discussed. Here, the focus is on one country only (Germany). Second, different measures of educational poverty are used in a comparative perspective. Six European countries (Finland, Germany, Great Britain, Italy, Sweden and Poland) which differ according to the characteristics of their education and welfare systems were selected.⁹

Table 2 contains information on the formal qualifications school-leavers have obtained in Germany from 1960 onwards. Although comprehensive elements have been introduced since the 1960s and 1970s, the German school system is still characterised by a high degree of stratification (Allmendinger 1989). Thus, the school-leaving certificates reflect the traditional tri-partite structure of the West German school system with an academic track (*Gymnasium*) which qualifies students for entry into university, an intermediate secondary track (e.g., *Realschule*) which qualifies students primarily for vocational training and a low secondary track (*Hauptschule*, up to the 1960s: *Volksschule*=primary school) which qualifies students primarily for manual vocational training. *Volks-* or *Hauptschule* (eight years up until the 1960s and a minimum of nine years since then, depending on the Federal State) or a corresponding duration of schooling is required to fulfil compulsory schooling regulations.¹⁰

⁸ Each respondent provides retrospective annual information on activities such as employment or education starting from age 15 ('activity calendar'). We assume that people start school at the age of six and are still in education at age 14 and add to these eight years the years of education observed in the activity calendar. In order to focus on general education and not on further training, we count years of education up to the age of 29 when the majority of the population have left the education system. It is important to note that we observe 'gross' years of education, i.e. including class repetition.

⁹ We use data on educational certificates from official statistics as these indicators are based on larger samples and seem more reliable. In the case of Germany and other countries, the IALS overestimates the share of persons with low certificates (Gesthuizen et al. 2011: 269). In contrast, the SOEP underestimates the share of early school leavers.

¹⁰ However, it ignores the division between these types of schools and special schools. Among people without any school-leaving certificate, the share of school leavers from special schools has grown

Table 2 shows that, if we use compulsory schooling legislation as a norm to derive a political educational poverty threshold, educational poverty has decreased since the 1960s. But against the background of a relative understanding of poverty, it is difficult to ignore the changes in the distribution of educational certificates (which are only partly reflected in changes in compulsory schooling legislation) as an effect in the course of educational expansion. While in 1960 less than 20 percent of school leavers achieved a level above compulsory schooling, in 2010 this holds true for almost 80 percent.¹¹ However, with a categorical variable such as ‘school-leaving certificate’, there is no straightforward application of a relative (‘statistical’) poverty threshold nor are there any subjective or consensual thresholds.

Table 2: School Leavers in Germany by Formal Qualification (%), 1960-2010

	no degree	low secondary	intermediate secondary	academic secondary
1960	17.7	55.2	18.2	8.8
1965	18.1	56.7	17.7	6.8
1970	18.0	44.7	25.6	11.7
1975	12.0	36.4	33.3	18.3
1980	9.6	34.2	36.9	19.4
1985	6.5	28.8	37.8	26.9
1990	6.6	24.6	35.0	33.8
1995	7.5	23.4	38.6	30.4
2000	7.8	21.4	39.6	31.2
2005	6.5	19.9	40.2	33.4
2010	4.7	15.8	39.2	40.3

Source: Own calculation based on the Data Portal published by the Federal Ministry of Education and Research (BMBF) /Table 2.3.14 (as at March 2013, Source: Fachserie 11 Reihe 1/2, Statistisches Bundesamt). Notes: Percentage of all school leavers in a given year, 1960-1990: West Germany.

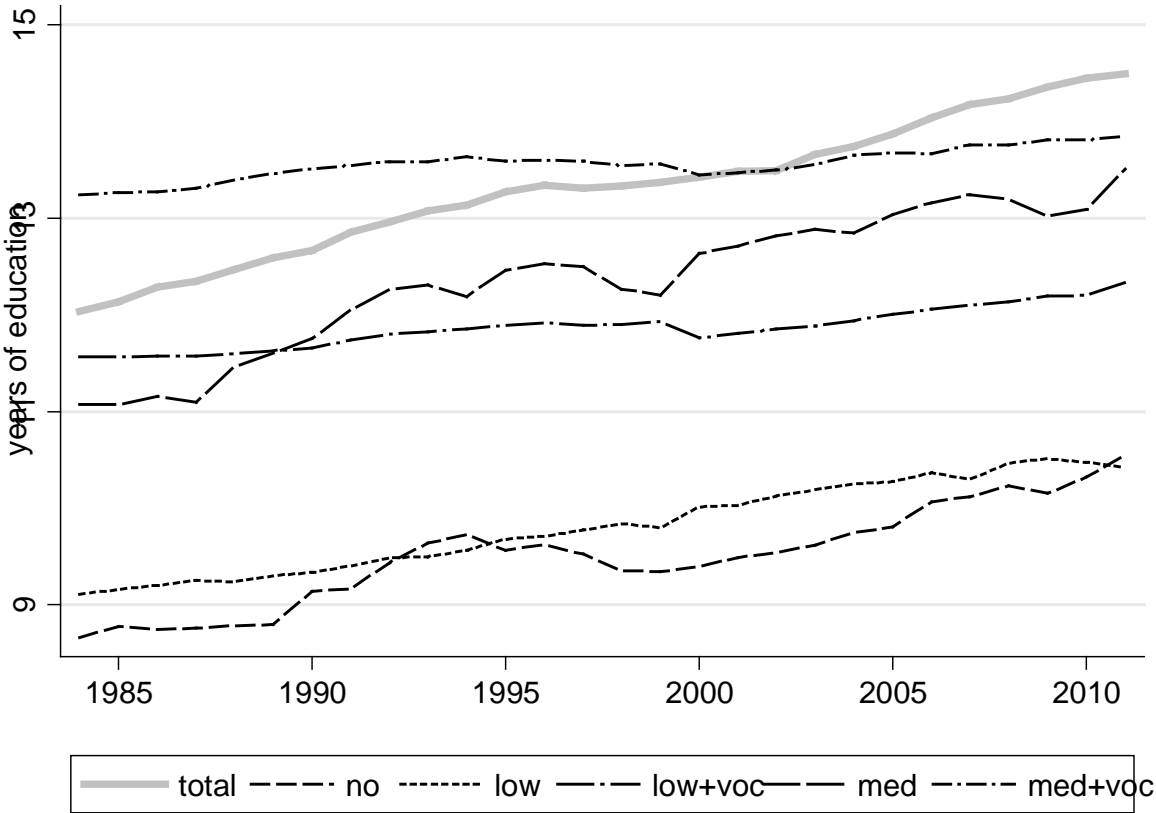
Figure 1 contains information derived from SOEP retrospective data on years of education. As discussed in Section 4.1 above, this indicator is not well suited for a description of educational outcomes in a stratified school system. However, we can still use its metric to obtain an – albeit roughly measured – mean level of time spent in school. The results show that, on average, in 1984 the population aged 26 to 65 years had attained 12 years of school and that this duration steadily rose to 14.5 years in 2011. This increase is the result of two different developments. On the one hand, as shown in Table 2, an increasing share of the population obtains higher educational qualifications which require more years of schooling.

considerably and has amounted to over 50 percent in recent years while it was not higher than 20 percent in the 1960s.

¹¹ See also the discussion on stigma by negative selection with regard to school leavers from a *Hauptschule* (Solga 2002).

On the other hand, there are changes in the years of schooling within educational groups. This also, or even primarily, applies to school leavers without a school-leaving certificate. Solga (2005: 206) shows that the school-leaving age of this group has increased over time due to waiting loops, etc. This pattern can also be seen in Figure 1, which depicts the trends since 1984 for the population with low or intermediate qualifications (with and without vocational training). The smallest growth in duration is observed in the groups with vocational qualifications, which is perceived as the standard option after graduating from *Haupt-* or *Realschule*. In these groups, waiting loops and rough transitions at the end of school are less likely to increase years of schooling.

Figure 1: Years of Education by Formal Qualification (West Germany, 1984-2011)



Source: SOEP 1984-2011 (v28, own calculations, weighted), population aged 25 to 65 years. Notes: total=all qualifications, no=no qualification, low=low secondary school qualification (*Hauptschulabschluss*), low+voc= low secondary school qualification (*Hauptschulabschluss*) + formal vocational training, med=intermediate secondary school qualification (e.g.,*Realschulabschluss*), med+voc=intermediate secondary school qualification (e.g., *Realschulabschluss*) + formal vocational training.

The SOEP also provides an indicator on ideal-typical years of schooling which translates information on certificates into a metric measure. However, currently it does not reflect changes over time such as in the duration of compulsory education. In contrast, the IALS

provides information on years of education obtained from a survey question (excluding class repetition etc.). We will use this measure in the comparative analysis below. It allows for a comparison of poverty rates using a political and a relative poverty threshold which is not feasible with other indicators. Still, in particular in countries with stratified education systems we face the general problems related to the measure of years of education.

Like Allmendinger and Leibfried (2003), we also use educational certificates and competence scores as indicators of educational poverty (Table 3). As discussed in Section 4.1, with regard to educational certificates no standard for an internationally accepted threshold has yet evolved. However, since the EU defines the group holding an ISCED 0-2 qualification as early school leavers in its Europe 2020 strategy, we use this as a criterion for an educational poverty threshold. The competence-based poverty line is based on the threshold which defines the lowest competence level within the IALS data. Both thresholds, in contrast to most thresholds used in research on income poverty, refer to a supranational population.

Table 3: Educational Poverty by Indicator (%), Selected Countries, Mid-1990s

	Educational	Lowest competence level ²		
	certificate ¹	Prose	Quantitative	Document
	ISCED 0-2	literacy	literacy	literacy
Germany	18.1	15.5	7.1	9.7
Finland	29.9	12.2	12.5	14.7
Sweden	25.9	8.5	7.1	7.1
Great Britain	47.5	22.8	23.5	24.6
Italy	58.5	39.4	35.2	41.1
Poland	23.7	47.2	41.8	49.1

Sources: 1) Eurostat main tables (tsdsc430, as off 10 April 2013), 2) IALS (own calculations, weighted). Notes: Years: (IALS/Eurostat): 1994 (DE), 1994/95 (SE), 1994/97 (PL), 1996 (GB), 1998 (FI, IT). Population aged 26 to 65 years.

The results show that there is a tendency for competence poverty to be higher in countries with higher certificate poverty. However, the overall association is far from perfect (with Poland being the most pronounced outlier). We may conclude that different indicators provide different results on educational poverty in an international perspective.

As a final step, we apply different approaches defining poverty thresholds using the same indicator: political, relative (statistical) and expert-based. Furthermore, we differentiate between population-wide and cohort-specific thresholds. To define the political threshold, we use information on full-time compulsory schooling regulations from the Eurydice programme on education systems in Europe. In our six selected countries, the duration of compulsory

schooling is nine (Finland, Germany and Sweden), ten (Italy) or eleven years (Great Britain, Poland).¹² Relative thresholds are defined as 75% of the median of years of education or competences.¹³ In contrast to the thresholds used in Table 3, with the exception of the competence expert threshold, all thresholds refer to the population within a country (or to a sub-population in the case of cohort-specific thresholds). The results show large differences between the three general approaches of deriving poverty thresholds.

Table 4: Educational Poverty by Indicator and Poverty Threshold (%), Selected Countries, Mid-1990s

Indicator:	Years of education ¹		Competence scale ²		
	Political ³	Relative ⁴	Expert ⁵	Relative ⁶	Relative (cohort-specific) ⁷
Germany	20.2	2.5	8.7	5.7	6.1
Finland	19.8	19.8	11.9	9.4	6.9
Sweden	19.7	19.7	6.6	7.8	6.7
Great Britain	31.1	2.1	21.7	14.6	14.0
Italy	52.0	25.9	37.5	18.3	17.0
Poland	41.1	26.8	44.5	22.4	21.8

Source: IALS (own calculations, weighted). Notes: 1) Full-time education, 2) mean of prose, quantitative and document literacy (each five plausible values), 3) current years of compulsory schooling (source: Eurydice), 4) 75% of median years of education, 5) lowest level of competence, 6) 75% of median competence score, 7) 75% of median competence score (within 10-year cohorts).

The differences in educational poverty using relative and cohort-specific are fairly small but these aggregate results conceal larger differences across cohorts (results not shown). As competence scores in older cohorts are lower on average, educational poverty rates are relatively high when using a population-wide threshold.¹⁴

6. Discussion

The present paper has discussed the definition and measurement of educational poverty in a comparative perspective. Educational poverty is understood as a level of education which falls below a threshold which is defined as a minimum in a given society. Although related to educational inequalities, educational poverty has a distinct perspective because it focuses on

¹² In countries with variation of compulsory schooling laws across regions (Great Britain, Germany), we use the minimum duration.

¹³ We use years of education although it only apparently provides a comparable metric as it enables us to compare the results of political and relative poverty thresholds.

¹⁴ It is an open question whether the lower competence scores in older cohorts are due to an age or a cohort effect (but see the discussion in Wilson/Gove 1999).

inequalities of condition rather than on inequalities of opportunity. Addressing the acceptable minimum, the concept of educational poverty stresses the social policy dimension of education and is strongly related to the social investment discourse which regards education policy as a decisive factor in social policy. However, how to define this minimum, in particular within different contexts, is a crucial question that has not yet been discussed extensively. Departing from the broad discussion on general poverty, we provided an overview on different concepts of educational poverty and some exemplary results using different measures. A most central aspect of all poverty measurement is the question of defining a threshold which discriminates between levels perceived as acceptable or unacceptable in a given society. There are different reference points which can be used for drawing this line but each entails specific assumptions. Consequently, different measures provide a different empirical view on educational poverty. As has been shown, not only do poverty levels differ but also rankings by country. Unlike in the case of income poverty, where the 60-percent-of-median threshold has become a widely accepted reference in Europe, no such standard has evolved in the field of educational poverty. Therefore, it seems advisable to provide evidence using different indicators and stress the normative foundations of the choice of poverty measures, or to refrain from an unconstrained use of the term 'poverty' before further research has provided more evidence on where to draw the line between acceptable and unacceptable levels of education.

In a wider perspective, we may ask about the consequences of shifting the focus to acceptable standards of education within welfare states. The concept of educational poverty stresses the social policy perspective on education but leaves open a number of questions with regard to interventions. In the context of the social investment discourse, education may be regarded as an entitlement, i.e. access to free compulsory schooling, and also as the obligation to educate oneself. One example of the latter is the requirements for participation in training measures within unemployment schemes. This example also shows how social policy interventions may differ according to the general understanding of education. In the context of training measures for the unemployed, education is primarily understood as a resource for labour market inclusion. Being unemployed is the main trigger for intervention, not primarily the level of education falling below a threshold which is perceived as unacceptable. The field for interventions is less clear cut when education is regarded not only as a resource but as a separate dimension in a broad understanding of living conditions. Here, further research on the question of a minimum standard of education in a given society reflected in the concept of educational poverty is required.

References

- Allmendinger, Jutta (1989): Educational systems and labour market outcomes. In: *European Sociological Review* 5(3): 231-250.
- Allmendinger, Jutta (1999): Bildungsarmut. Zur Verschränkung von Bildungs- und Sozialpolitik. In: *Soziale Welt* 50(1): 35-50.
- Allmendinger, Jutta/ Leibfried, Stephan (2003): Education and the welfare state: the four worlds of competence production. In: *Journal of European Social Policy* 13(1): 63-81.
- Allmendinger, Jutta/ Ebner, Christian/ Nikolai, Rita (2010): Education in Europe and the Lisbon Benchmarks. In: Alber, Jens/ Gilbert, Neil (ed.): *United in diversity? United in Diversity? Comparing social models in Europe and America*, Oxford: Oxford University Press: 308-327.
- Andreß, Hans-Jürgen (1999): *Leben in Armut. Analysen der Verhaltensweisen armer Haushalte mit Umfragedaten*, Opladen: Westdeutscher Verlag.
- Andreß, Hans-Jürgen/ Lipsmeier, Gero/ Lohmann, Henning (2001): Income, Expenditure and Standard of Living as Poverty Indicators - Different Measures, Similar Results? In: *Schmollers Jahrbuch. Zeitschrift für Wirtschafts- und Sozialwissenschaften* 121(2): 165-198.
- Atkinson, Tony/ Cantillon, Bea/ Marlier, Eric/ Nolan, Brian (2002): *Social indicators. The EU and Social Inclusion*. Oxford: Oxford University Press.
- Böhnke, Petra (2000): Bildung und Kompetenzen. In: *Statistisches Bundesamt (ed.): Datenreport 1999*, Wiesbaden: 471-479.
- Brandolini, Andrea/ D'Alessio, Giorgio (1998): *Measuring well-being in the functioning space*. mimeo, Rom: Banca D'Italia.
- Braun, Michael/ Müller, Walter (1997): Measurement of education in comparative research. In: *Comparative Social Research* 16: 163-201.
- Brynin, Malcolm/ Longhi, Simonetta (2006): *The wage effects of graduate competition*, ISER Working Paper 2006-58, Colchester: ISER.
- Bussemeyer, Marius R./ Nikolai, Rita (2010): Education. In: Castles, Francis G./ Leibfried, Stephan/ Lewis, Jane/ Obinger, Herbert/ Pierson, Christopher (ed.): *The Oxford Handbook of the Welfare State*, Oxford: Oxford University Press: 494-508.

- Checchi, Daniele (1998): Povertà ed istruzione: alcune riflessioni ed una proposta di indicatori. In: *Politica economica* 14(2): 245-282.
- Coleman, James S. (1968): The concept of equality of educational opportunity. In: *Harvard Educational Review* 38(1): 7-22.
- Coleman, James S. (1975): What is meant by 'an equal educational opportunity'? In: *Oxford Review of Education* 1(1): 27-29.
- Collins, Randall (1979): *Credential Society: An historical sociology of education and stratification*. New York: Academic Press.
- Council of the European Union (2009): Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020'). In: *Official Journal of the European Union* C119: 2-10.
- Davis, Kingsley/ Moore, Wilbert E. (1945): Some principles of stratification. In: *American Sociological Review* 10: 242-249.
- DeWilde, Caroline (2004): The multidimensional approach to the measurement of poverty in Belgium and Britain: A categorical approach. In: *Social Indicators Research* 68(3): 331-369.
- European Commission (2004): *Joint report on social exclusion 2004*. , Luxemburg: Office for Official Publ. of the Eur. Communities.
- Fahey, Tony (2007): The Case for an EU-wide Measure of Poverty. In: *European Sociological Review* 23(1): 35-47.
- Ferger, Florian (2013): *Bildungsarmut im Spannungsfeld staatlicher Interventionslogiken*, unpublished manuscript.
- Gesthuizen, Maurice/ Scheepers, Peer (2010): Economic vulnerability among low-educated Europeans: Resource, composition, labour market and welfare state influences. In: *Acta Sociologica* 53(3): 247-267.
- Giddens, Anthony (1998): *The third way. A renewal of social democracy*. Cambridge: Policy Press.
- Hamilton, Mary/ Barton, David (2000): The international adult literacy survey: What does it really measure? In: *International Review of Education* 46(5): 377-389.
- Hauser, Richard/ Cremer-Schäfer, Helga/ Nouvertné, Udo (1981): *Armut, Niedrigeinkommen und Unterversorgung in der Bundesrepublik Deutschland*. Frankfurt/ New York.

- Kerckhoff, Alan C./ Ezell, Elizabeth Dietrich/ Brown, J. Scott (2002): Toward an improved measure of educational attainment in social stratification research. In: *Social Science Research* 31: 99-123.
- Lohmann, Henning (2013): Ansätze der Definition und Messung von Bildungsarmut: Konzeptionelle und empirische Perspektiven, unpublished manuscript.
- Mack, Joanna/ Lansley, Stewart (1985): *Poor Britain*. London: Allen & Unwin.
- Marshall, Thomas H. (1950): *Citizenship and Social Class*. Cambridge: Cambridge University Press.
- Murray, T. Scott/ Kirsch, Irwin S./ Jenkins, Lynn B. (1998): *Adult literacy in OECD countries. Technical Report on the First International Adult Literacy Survey*. , : National Center for Education Statistics.
- Nikolai, Rita (2007): Sozialpolitik auf Kosten der Bildung? Verteilungskonkurrenz in Zeiten knapper Kassen. In: *Zeitschrift für Sozialreform* 53(1): 7-30.
- Nolan, Brian/ Whelan, Christopher T. (1996): *Resources, Deprivation and Poverty*. Oxford: Clarendon Press.
- Richardson, John G./Powell, Justin J.W. (2011): *Comparing Special Education. Origins to Contemporary Paradoxes*. Stanford: Stanford University Press.
- Ringen, Stein (1988): Direct and Indirect Measures of Poverty. In: *Journal of Social Policy* 17(3): 351-365.
- Robeyns, Ingrid (2005): The capability approach: A theoretical survey. In: *Journal of Human Development* 6(1): 93-117.
- Roemer, John E. (1998): *Equality of opportunity*. Cambridge: Harvard University Press.
- Rowntree, Seebohm (1980, [1901]): *Poverty. A study of town life*. New York: Garland.
- Saccone, Donatella (2008): Educational inequality and educational poverty: The Chinese case in the period 1975-2004. Dipartimento di Economia 'S. Cagnetti de Martiis', Working Paper 2008/08, Turin: University of Torino.
- Sen, Amartya (1987): The Standard of Living: Lecture II, Lives and Capabilities. In: Hawthorn, Geoffrey (ed.): *The Standard of Living*, Cambridge: Cambridge University Press: 20-38.
- Shavit, Yossi/ Blossfeld, Hans-Peter (ed.) (1993): *Persistent inequality - Changing educational attainment in thirteen countries*, Boulder: Westview Press.

- Solga, Heike (2002): 'Stigmatization by negative selection'. Explaining less-educated people's decreasing employment opportunities. In: *European Sociological Review* 18(2): 159-178.
- Solga, Heike (2005): *Ohne Abschluss in die Bildungsgesellschaft*, Opladen: Barbara Budrich.
- Solga, Heike (2011): Bildungsarmut und Ausbildungslosigkeit in der Bildungs- und Wissensgesellschaft. In: Becker, Rolf (ed.): *Lehrbuch der Bildungssoziologie*, Wiesbaden: VS: 411-448.
- Solga, Heike (2012): Bildung und materielle Ungleichheiten. Der investive Sozialstaat auf dem Prüfstand. In: Becker, Rolf/ Solga, Heike (ed.): *Soziologische Bildungsforschung, Sonderheft 52/2012, Kölner Zeitschrift für Soziologie und Sozialpsychologie*: 459-487.
- Stanat, Petra/ Artelt, Cordula/ Baumert, Jürgen/ · Klieme, Eckard/ Neubrand, Michael/ Prenzel, Manfred/ Schiefele, Ulrich/ Schneider, Wolfgang/ Schümer, Gundel/ Tilmann, Klaus-Jürgen/ Weiß, Manfred (2002): *PISA 2000: Overview of the study. Design, method and results*, Berlin: Max Planck Institute for Human Development.
- Statistics Canada (n.d.): *International Adult Literacy Survey. Microdata User's Guide*.
- Teltemann, Janna/ Windzio, Michael (2013): Socio-structural effects on educational poverty of young immigrants - An international comparative perspective. In: Windzio, Michael (ed.): *Integration and inequality in educational institutions*, Springer: 99-121.
- Townsend, Peter (1979): *Poverty in the United Kingdom*. Harmondsworth: Penguin.
- UNESCO (2010): *Reaching the marginalized. EFA Global Monitoring Report 2010*. Paris/Oxford: UNESCO/Oxford University Press.
- van Praag, Bernard M.S. (1971): The welfare function of income in Belgium: An empirical investigation. In: *European Economic Review* 2(3): 337-369.
- Voges, Wolfgang/ Jürgens, Olaf/ Maurer, Andreas/ Meyer, Eike (2003): *Methoden und Grundlagen des Lebenslagenansatzes. Endbericht*, Bremen: ZeS, Universität Bremen.
- Wagner, Gert G./ Frick, Joachim R./ Schupp, Jürgen (2007): The German Socio-Economic Panel Study (SOEP) - Scope, Evolution and Enhancements. In: *Schmollers Jahrbuch. Zeitschrift für Wirtschafts- und Sozialwissenschaften* 127(1): 139-169.
- Willemse, Nienke/ De Beer, Paul (2012): Three worlds of educational welfare states? A comparative study of higher education systems across welfare states. In: *Journal of European Social Policy* 22(2): 105-117.

Wilson, James A./ Gove, Walter R. (1999): The intercohort decline in verbal ability: Does it exist? In: *American Sociological Review* 64(2): 253-266.

Previously published SFB 882 Working Papers:

Diewald, Martin / Faist, Thomas (2011): From Heterogeneities to Inequalities: Looking at Social Mechanisms as an Explanatory Approach to the Generation of Social Inequalities, SFB 882 Working Paper Series, No. 1, DFG Research Center (SFB) 882 From Heterogeneities to Inequalities, Bielefeld.

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Amelina, Anna / Bilecen, Başak / Barglowski, Karolina / Faist, Thomas (2012): Ties That Protect? The Significance of Transnationality for the Distribution of Informal Social Protection in Migrant Networks, SFB 882 Working Paper Series, No. 6, DFG Research Center (SFB) 882 From Heterogeneities to Inequalities, Research Project C3, Bielefeld.

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- Gusy, Christoph / Müller, Sebastian (2012): Social Construction of Heterogeneity Indicators and their Relationship to Law. The Example of Guiding Principles in Immigration Law, SFB 882 Working Paper Series, No. 9, DFG Research Center (SFB) 882 From Heterogeneities to Inequalities, Research Project C4, Bielefeld.
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