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Applying social production function theory to benefits of schooling: The concept of values of education

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Abstract:

Many approaches to explaining educational inequalities relate explicitly and implicitly to benefits of education, and rational choice theories in particular consider monetary benefits. We specify a concept of the value of education that allows for an empirical analysis of educational benefits, considering both monetary and non-monetary dimensions (instrumental goals) outlined in social production function theory. Our objectives include introducing a sound theoretical framework, the validation of an empirical measurement instrument and an analysis of the differences between certain dimensions of educational values structured by social origin, gender and immigrant background. Analyses are based on a two-wave panel study (SASAL – School Alienation in Switzerland and Luxembourg) carried out in secondary schools in Luxembourg and Switzerland. We distinguish four dimensions within the concept of values of education: stimulation, comfort/status, behavioural confirmation and affection. The different dimensions of the value of education are influenced by gender and immigrant backgrounds in both national settings.

Keywords:

Educational inequalities; values of education; social production function theory

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Introduction

In the study of educational inequalities, various sociological approaches consider the group-specific perception of the utility of schooling (for example, Erikson and Jonsson 1996). The main argument offered is that the perceived benefit of education is linked to the reproduction of educational inequalities (Breen and Goldthorpe 1997). Rational choice approaches relating to primary and secondary effects (Boudon 1974) are frequently applied to explain these mechanisms. This involves a meaningful focus on the differences in achievement (primary effects) between school students and the educational decisions (secondary effects) that are affected by family resources and socialisation (for example, Layte 2017). Elaborated rational choice approaches centre on group-specific cost-benefit accounts when explaining the secondary effects of differential decisions in the process of educational transitions – in particular, the choice of secondary school tracks after primary education (Breen and Goldthorpe 1997; Esser 1999; Becker 2003). Within this empirically well-tested framework (for example, Becker 2003; Breen and Yaish 2006; Stocké 2007; Tutić 2017), the benefit of education is mainly related to monetary outcomes in the labour market, focusing on education as a crucial instrument for successful status attainment within a stratified society. Little scientific attention has been paid to two aspects that we would like to focus on in this study: do the non-monetary benefits of education also play a role in student perceptions of schooling; and how do such values of education differ between student groups?

We introduce a concept of values of education that innovatively extends rational choice approaches, by allowing them to transcend into the non-monetary benefits of education, as outlined in the social production function (SPF) theory of Lindenberg and colleagues (Lindenberg 1986; Ormel et al. 1999) and, more explicitly, by linking the rational utility-focused SPF theory with the social value approach (Weber [1922] 1968; Kluckhohn [1951] 1967; Rokeach 1973). Values of education are introduced on both a conceptual level and an empirical level, with an empirical operationalisation of different dimensions of values of education at the core of this study, as the state of research still lacks a thorough measuring instrument that includes both the monetary and non-monetary benefits of education.

Our concept of the values of education is derived from SPF theory (Ormel et al. 1999), which defines five instrumental goals towards the universal goal with subjective physical and social well-being at its core. We theorise that education contributes to the instrumental goals

of stimulation, comfort, status, behavioural confirmation and affection. These values of education are value orientations (Kluckhohn [1951] 1967), being transmitted during socialisation, and at the same time relate to utility functions in terms of certain benefits of education. Values of education include, firstly, socialised and, secondly, situation-specific appraisals of certain goals as emphasised in the rational choice approaches (for example, Becker 2003). These conceptual programmes are not often explicitly linked to each other in the scientific discourse, and Hechter (1994) is one of the few scholars to combine both perspectives. Socialised value orientations such as values of education have a rational core, as they carry information to aid decision-making in and across situations. They explain why certain instruments are helpful in achieving certain goals and how they function as frameworks that structure decisions, and thus determine actions. While most research links the benefits of education to student or parental educational decisions (in terms of secondary effects), we will argue in our conceptual framework that values of education also impact behaviours that cause achievement differences (in terms of primary effects in the educational inequalities concept of Boudon 1974). We define values of education as perceptions of the benefits of going to school and we focus on the school-related instrumental goals of students.

The objectives of the present article include translating this conceptual framework into an empirical concept for the measurement of values of education among students in school, validating this empirical concept and analysing the differences between values of education along well-studied axes of inequality. For purposes of validation, the functionality of the values of education is studied in two distinct (although Western-industrialised) settings: Luxembourg and Switzerland. This allows the concept to be tested in different cultural contexts and educational systems. The research questions addressed are: how is the contribution of education to the achievement of general human goals perceived among secondary school students; and what kind of family background and gender effects on the perceived monetary and non-monetary benefits of education can be identified?

Our study is based on the international dataset of a research project which examines School Alienation in Switzerland and Luxembourg (SASAL). Data were gathered in secondary schools in the Swiss canton of Bern and in Luxembourg after the transition from primary school, in both stratified school systems. In total, 973 students participated in the panel study during Grades 7 and 8 of lower secondary education (Morinaj et al. 2017). The regions are both characterised by stratified societies but also by high living standards and certain standards regarding social security and welfare, with Luxembourg being classified as a conservative welfare state regime and Switzerland as implementing a mix of liberal and conservative welfare

measures (see Trampusch 2010). The education system of Luxembourg is more highly stratified than the education system of the Swiss canton of Bern. Although students are assigned to certain school tracks or levels at the transition from primary to secondary schooling after Grade 6 in both settings, the Luxembourgish students are selected into three distinct general secondary school tracks (including an academic track and vocational tracks), while the Swiss students continue in more heterogeneous school and classroom settings, with the final decision about attending upper secondary academic or vocational education not taken before Grade 8. The canton of Bern and Luxembourg both have large immigrant populations, which comprise more than 25% of the population. In Switzerland, first-generation immigrants made up 28% of the population in 2016, and this proportion was much higher in Luxembourg, at 45% (Eurostat 2016). When second-generation immigrants are taken into account, these percentages are much higher. The largest immigrant groups in Luxembourg are of Portuguese (by far the largest immigrant group), French and Italian origin, and the largest immigrant groups in the canton of Bern are of German, Portuguese and Italian origin. The national contexts thus fit the aim of the paper to test the value concept in diverse societies.

The article is structured as follows. The function of value orientations is outlined according to socialisation and rational choice approaches on educational inequalities. SPF theory is applied to education. An innovative empirical conceptualisation of values of education is introduced and validated. Differences in the dimensions of values of education along well-studied axes of inequality – namely social origin, gender and immigrant background – are a core issue. Finally, the findings are discussed with regard to the conceptual approach outlined earlier.

Identifying concepts of the benefits and social values of education in theories of educational inequalities

Conceptual considerations and empirical studies on educational inequalities focus particularly on the effects of social origin, and on further ascriptive characteristics such as immigrant background/ethnicity and gender, and how such factors affect educational trajectories (Hadjar and Gross 2016); they often implicitly refer to mechanisms of evaluating and valuing education. These approaches include the work of Boudon (1974), with his distinction between achievement differences (primary effects) and differences in educational decisions (secondary effects), the work of Bourdieu ([1979] 1984), emphasising the socialisation-based transmission of resources, and rational choice approaches (for example, Breen and Goldthorpe 1997; Becker

2003) which focus on cost-benefit calculations as a basis of educational decisions. Although not explicitly referred to, it is implied that these references include an underlying mechanism of group-specific (instrumental) values of education: individuals differ in the value they assign to education, with regard to short-term and long-term issues, depending on their social class positions (Bourdieu [1979] 1984) and, in particular, the intergenerational transmission of social values in families (Hyman 1966). These considerations draw on Weber's ([1922] 1968) idea of class-specific values and interests as the basis of class-specific lifestyles (*Lebensführung*) and being linked to certain positions within the societal hierarchy and market chances. Owing to differentials in life circumstances, social groups share similar value orientations that differ from those of other social groups, and represent a conception of goals (Kluckhohn [1951] 1967; Rokeach 1973).

What is also implicitly included in both the approaches of Boudon (1974) and Bourdieu ([1979] 1984) is the assumption of a crucial impact of these perceived values on educational decisions related to secondary effects and (less obviously) on school achievement related to primary effects. The individual value attached to education by students may affect both learning motivation and learning and social behaviour in school, and parental values may impact their support practices (Hegna and Smette 2017). Values of education may thus also be part of the mechanism of primary effects as they affect differences in educational achievement (Boudon 1974). The outlined roles of values of education in primary and secondary effects are, like Boudon's (1974) classical concept, related to social origin, and particularly the disadvantages of working-class students. These considerations can also, however, be applied to the primary and secondary effects of ethnic origin (Kristen and Dollmann 2010; Van de Werfhorst and Van Tubergen 2007) and gender (Hadjar and Buchmann 2016).

Considering classic approaches, we will now identify the benefits and values related to education, and the role of values of education in more detail. First, drawing on Bourdieu's ([1979] 1984) habitus concept, valuing education is deeply rooted in the habitus that comprises class-specific thinking and behaviour, perceptions and evaluations of situations. As a crucial part of the habitus, the incorporated cultural capital transmitted within families (Bourdieu 1986) determines not only socialisation-based knowledge and competencies, but also values and attitudes towards education. This is in line with the present approach of theorising values as being socialised, and expressing the desirable (Kluckhohn [1951] 1967) or a preference (Rokeach 1973). The unequal distribution of resources among families, and the group-specific habitus attached to them, leads to systematic achievement differences. According to Bourdieu and Passeron ([1970] 1977), this is the main mechanism for the reproduction of social

inequalities, as the value systems of social groups may not correspond to the school system's values. For instance, compared to middle-class students, working-class students are 'more likely to hold views in opposition to the school; less likely to see the relevance of the curriculum to their projected occupation' (Nash 2003, 448).

Focusing mainly on educational decisions, rational choice approaches (Erikson and Jonsson 1996; Breen and Goldthorpe 1997; Esser 1999) describe cost-benefit evaluation processes regarding different educational institutions and the pathways of families with different social class backgrounds. While the costs comprise investments in education and earnings forgone on the labour market, the benefit involves achieving expected credentials for the labour market (Becker 2003), as per human capital theory, with its core assumption of strong links between investments in education, productivity and income (Becker 1964). This rationality not only considers objective situations, however, but that distinguishing actual from perceived benefits (or values attached to education) is necessary. The main assumption of this framework is that working-class families anticipate higher resource deficits, and perceive lower benefits, higher costs and lower success probabilities in higher educational pathways (Becker 2003). They are thus more likely to aspire to and participate in lower educational pathways (Erikson and Jonsson 1996). This is reflected in the relative risk aversion of families, as 'they seek to avoid downward social mobility' (Breen and Goldthorpe 1997, 283). Status maintenance for the upper middle class implies attending higher educational pathways, and they therefore perceive a much higher utility of education in contrast to the working class. By empirically testing the Breen-Goldthorpe model, Stocké (2007, 516f) identifies an explanatory lack regarding the power of rational choice approaches in the explanation of educational choices. Referring to the important 'influence of habituated dispositions', Nash (2003, 433) also criticises rational choice approaches, detecting the lack of an adequate explanation of primary effects, which account for a large share of inequality of educational opportunity. This lack is described by both scholars, and may be compensated for by considering value orientations, as they affect educational motivation, and particularly the intrinsic motivation that is most crucial for educational success.

Considering these conceptual arguments and the occasional references to values of education, it would be meaningful to develop a sound concept of values of education covering both monetary and non-monetary benefits. Different definitions of values are used in the socialisation (socialised appraisals) and rational choice (utilities, actual and perceived benefits) approaches, and so we need to identify what exactly 'values of education' refer to. We will argue for a synthesis of both perspectives.

Applying social production function theory to education: Values of education among school students

In order to specify the individual utility of education on the one hand, and to differentiate between certain dimensions of educational benefit on the other, we apply Lindenberg's (1986) SPF theory to education. The main assumption of SPF theory is that 'people produce their own well-being by trying to optimize achievement of universal goals, within the set of resources and constraints they face' (Ormel et al. 1999, 66). Physical well-being and social well-being function as universal goals. Stimulation (activation) and comfort affect physical well-being, and status, behavioural confirmation and affection are the instrumental goals towards achieving social approval (Ormel et al. 1999, 67f). Various activities and endowments that are functions of personal resources produce these five instrumental goals, which can, to a certain extent, be chosen and exchanged. Again, cost-benefit considerations play an important role (Lindenberg and Frey 1993).

– Table 1. Social production function theory applied: Producing subjective well-being through education –

The differentiation between (universal/first-order instrumental) goals and means of production has certain similarities to the distinction made by Rokeach (1973) regarding terminal and instrumental values. While the first relate to terminal values, that is the most desirable end-states of existence (such as true friendship and pleasure), the latter relate to instrumental values in terms of preferable modes of behaviour (such as cheerfulness and politeness), which help to achieve the terminal values. Again, this reinforces our argument that rational choice and value approaches are not antagonistic. This is also supported by a comparison of the preference concepts in SPF theory and Bourdieu's theoretical approach: according to Reddig and Tranow (2014: 315), the integration of Lindenberg's goal structure is fruitful for better understanding the mechanism of social appraisal in Bourdieu's practice theory.

Applying SPF theory to utility functions or the benefits of education, we conceptualise certain values of education, particularly values of learning in school and of school in general (see Table 1). Education appears to be a basic resource for subjective well-being (Hadjar, Haunberger, and Schubert 2008) – the following specific education-related instrumental goals and means can be identified. Stimulation requires activities which effect arousal. Learning activities in school and a general thirst for knowledge are thus schooling-related instruments to achieve stimulation. In that sense, schooling produces activation which is expressed in

motivation, enjoyment and the absence of boredom. Since comfort is understood in terms of the fulfilment of physical needs, education is the main factor behind future (long-term) life opportunities (including financial opportunities in general), social security and comfortable housing. Comfort as an instrumental role, however, also has a short-term dimension related to perceived comfort during learning activities in and outside school, because education (and the investment of time and effort it entails) may be perceived as an obstacle to a pleasant daily life. Status is a positional good and strongly linked to a comparison of the social status of others. Educational credentials determine later levels of graduation, occupation and prestige, which implies the long-term utility of education. Behavioural confirmation relates to the perception of acting in the right way vis-à-vis the expectations of reference groups (e.g. peers) and personal norms. When applied to education, meeting the expectations and aspirations of parents and relevant others in their schooling-related activities and orientations is valued by students. Finally, affection involves the emotional aspect of SPF theory (intimacy, family, friendship). If this dimension is highly valued, schooling is perceived as a positive emotional setting in which students feel accepted. They perceive benefits from being together with others (friends, classmates, teachers) and from social interactions related to learning and extracurricular activities.

The weaknesses of SPF theory (Ormel et al. 1999) in this context include general criticism directed towards rational choice approaches, in that certain values that are beneficial for collective entities and which are values in themselves, without specific individual benefit (such as universalism values within the Schwartz [1992] values circumplex), are neglected. The specific mechanisms between the way that instrumental goals contribute to the production of social and physical well-being are also not well defined (van Bruggen 2004). This openness allows this model to be applied to education, however, and for theories about how education contributes to the different goals, albeit only being linked to the instrumental goal of status in the original SPF model.

Group differences in values of education along the axes of social origin, gender and immigrant background

As outlined earlier, group-specific differences in the perceived benefit of education are at the core of many explanations of educational inequalities, with class as (historically) the most

prominent axis of inequality, alongside gender and immigrant background as other important factors. In this section, we briefly theorise these links and derive a hypothetical scenario.

With regard to social origin, rational choice approaches implicitly or explicitly assume that the working class perceive a lower benefit of education in both educational returns on the labour market (income, status and prestige) and status maintenance (reproducing the family's social status) (Becker 2003; Breen and Goldthorpe 1997; Erikson and Jonsson 1996). Empirical evidence from Becker (2003, 19) indicates that the upper middle or service classes (in Becker's study: managerial employees, skilled civil servants with academic certificates, entrepreneurs and directors of large firms) in particular score more highly than unskilled workers in the perceived benefit of education. A similar, yet even more pronounced pattern regarding professionals is found for status maintenance (as another benefit of education).

Differences in the value assigned to education by gender can be derived from current disparities in educational achievement. Although there have long been disadvantages for women working towards educational attainment, school performance and degree attainment in most European countries today suggests that the gender gap is to the detriment of boys (Hadjar and Buchmann 2016, 164), who demonstrate 'larger variation in performance than girls' (OECD 2016, 267). Conceptual explanations for these attainment gaps often relate to an increased educational motivation in girls and women, which is higher than that of boys and men, and rooted in the much improved labour market opportunities for women (Breen and Goldthorpe 1997; Breen et al. 2010). Although this argument is connected to secondary effects in terms of educational decisions, the higher motivation of girls may also have an impact on the achievement gap in terms of primary effects. Differential motivational and behavioural resources appear to be major causes of the higher achievement of female students. For instance, compared to their male classmates, girls demonstrate more facilitating learning behaviour and the school context fits their personal needs better (Hadjar and Buchmann 2016). Research shows that boys are less attached to schooling than girls, as they hold negative attitudes and 'are more alienated from school than girls' (Hascher and Hagenauer 2010, 229), which is additionally ascribed to peer group effects (see Hadjar, Backes, and Gysin 2015).

Multiple studies have found that students from immigrant backgrounds have higher educational aspirations (for example, Kao and Tienda 1995; Van de Werfhorst and Van Tubergen 2007). When explaining this advantage regarding the secondary effects of immigrant background, Kristen and Dollmann (2010) only implicitly refer to the higher value that immigrants assign to education. Recent analyses that explicitly focus on the value of education (Hadjar and Scharf 2018), on the basis of CILS4EU (Children of Immigrants Longitudinal

Survey) data from the Netherlands, Sweden, England and Germany, suggest that immigrants assign a higher value to education than non-immigrants in all the national settings studied. This may be explained by the essential role that education plays in a successful integration. In the integration dimensions outlined by Esser (2006), education is essential for structural integration (placement) in terms of the acquisition of a certain position via status attainment. Education facilitates gaining knowledge of cultural elements such as values and behavioural patterns (acculturation/ socialisation) and building social networks (interaction). Immigrants may also value education more than non-immigrants, as they hope that education will function as an antidote to discrimination (Jonsson and Rudolphi 2011, 489). The higher value that immigrant students place upon education may also be caused by other factors, such as peer and parental influences (see Salikutluk 2016).

Our hypothetical scenario includes certain assumptions regarding the values of education. As this is the first study that explicitly deals with the concept of education outlined, these assumptions are applied to all dimensions of values of education (stimulation, comfort, status, behavioural confirmation, affection) in the same way. Although there may be differences in the evaluation of the different dimensions between the different groups, this is analysed exploratively. As per the brief conceptual outline, we assume that: working-class students assign a lower value to education than middleclass students, male students assign a lower value to education than female students; and immigrant students assign a higher value to education than non-immigrant students.

Analytical strategy, data and measurements

Our analysis begins by testing the values of education scale, which is a new instrument of measurement, for internal consistency between its different dimensions (construct validity). Analysis of the factorial structure of all four groups (students in Grades 7 and 8 in Switzerland, and students in Grades 7 and 8 in Luxembourg) starts with an exploratory factor analysis for each time point in both Switzerland and Luxembourg. We follow a combination of etic and emic approaches (Cheung, Van de Vijver, and Leong 2011; Morris et al. 1999): we attempt to identify universal aspects ‘that transcend cultural differences’ and ‘produce new theories that can be utilized across cultures’ (Lu 2012, 109). On the one hand, we apply the etic approach, but we do this – following an emic approach – by accounting for the insight provided by the empirical images from our Luxembourgish and Swiss samples concerning the structure of the values of education construct dimensions. Regarding our concept, this involves detecting equal

dimensions with the same set of items that best fit the compared groups. In doing so, we test for the international consistency of the concept between the two national settings, and for the longitudinal structure (two time points) of the value concept. The number of factorial dimensions indicates whether the concept comprises five single factors or is instead a second-order construct. In multilevel mixed-effects linear regression models, the dimensions of values of education at time point two, when students were in Grade 8 of secondary school, are also linked to the three axes of inequality: social origin, gender and immigrant background.

Data on values of education was gathered as part of the SASAL project, which examines the development of attitudes, behaviour and achievement among Swiss and Luxembourgish school students. A questionnaire survey was carried out in 17 secondary schools in the Swiss canton of Bern and in four secondary schools in Luxembourg. The students participated in this paper-and-pencil survey in their classroom context; the selection of school classes included all regular school tracks from academic to general (vocational) in both countries and, in the case of Luxembourg, also a preparatory track (Morinaj et al. 2017). In total, 973 lower secondary school students took part in the panel study during Grades 7 (field phase: beginning of 2016) and Grade 8 (field phase: beginning of 2017) – 508 students participated in Switzerland, 465 in Luxembourg. At time point two, students in the Swiss sample were on average 14.0 years old; 45.4% were male and 43.3% had an immigrant background (first, second or 2.5th immigrant generation). In Luxembourg, students in Grade 8 were 13.8 years old on average. The demographic structure of the Luxembourgish dataset differs from the Swiss data, with 58.6% boys and 71.2% immigrant students of the first, the second or the 2.5th generation. Accounting for these differences is another reason to include gender and immigrant background in the regression models. While Luxembourg allows for a specific analysis of certain immigrant groups, the number of students with an immigrant background in the Swiss sample is too low for complex analyses. The group of immigrant students in Luxembourg is mainly of Portuguese (48% of the immigrant background students), French (25%) and former Yugoslavian (10%) origin, and in the Swiss sample students of German origin (19%) and students originating from a former Yugoslavian country (17%) and from Turkey (7%) are among the largest immigrant groups.

Students were asked to evaluate 22 items on a four-point Likert scale (from 1=disagree to 4=agree) in order to capture the five different instrumental goals of education. The statements were formulated by the project team and classified in a theory-driven way to one of the five dimensions. In order to associate the term education with the knowledge and experience acquired by school students, we made use of the formulation going to school. As in

the value-of-children approach (Nauck 2014; Nauck and Klaus 2007), the concept of values is operationalised by highlighting the importance or, in some cases, the appraisal of being good/bad (see Table A1 in the Appendix 1 for a list of the items). As an operational definition of the values of education, the importance of going to school thus reflects the general benefit of education on the one hand, and goes beyond situation-specific attitudes towards school on the other. The items measure values in terms of general evaluations of certain utility functions of schooling (in contrast to specific attitudes or feelings), as they all refer to the general issue of schooling rather than specific situational aspects, and as the items always include a positive or negative evaluation dimension.

The correlates included in the models which validate the measurement concept of values of education and analyse differences between the three axes of inequalities are operationalised as follows. The educational and occupational level of the students' parents were used to differentiate the social origin of the students. We coded a class variable by means of self-reported educational level (university degree/below university degree) and the current or former occupations of both parents (student questionnaire). The Erikson, Goldthorpe, and Portocarero's (1979) EGP class schema was applied and adapted to three social classes: the upper middle class (service class) includes higher-grade and lower-grade professionals (with university degree); the middle class represents skilled manual employees; and the working class includes semi-skilled and unskilled manual workers. The highest level in the family was decisive. Gender was measured through the conventional dichotomous variable with a male and a female category. For immigrant background, we created a variable based on information on the countries of birth of the students and their parents. We differentiate between first generation immigrants (born abroad), second-generation (both parents born abroad), students with one parent born abroad (2.5th-generation immigrants) and non-immigrants, based on the students' self-reported birth countries.

We employed mixed-effects regression models to take the cluster structure of the data and related context effects into consideration.

Results

In order to validate the concept of values of education, empirical results are presented with special emphasis on the following research questions: how does education contribute to the achievement of general human goals among secondary school students; and what effects of

family background and gender can be identified on the perceived monetary and non-monetary benefits of education?

Separate exploratory factor analysis are calculated for each of the four groups – students in Grades 7 and 8 in the Swiss and Luxembourgish datasets – to test the entire scale (22 items) for construct validity. The results of a pattern matrix of the factor loadings (Table A1 in Appendix 1) indicate that, except for the Swiss students in Grade 8 (five factors), the principal component analysis extracted four components after rotation (Oblimin), showing an initial pattern of distinct dimensions according to the theoretical concept. All items loading on more than one factor with loadings above 0.30, and items with loadings below 0.50 were deleted for the next analysis. Fourteen items were first included in a reduced exploratory factor analysis (not presented). Since one item showed an insufficient value in three of the four settings and the scale reliability measured by means of Cronbach's alpha could be improved when omitting the item¹, the concluding selection consists of the remaining 13 items, accounting for the emic approach of the present study.

– *Table 2. Exploratory factor analysis of the values of education scale: Reduced number of items* –

The results of the final principal component analysis are presented in Table 2. According to the factorial structure, the scale consists of four first-order factors with the same set of items for all groups considered. The allocation of the items is in line with the theoretical assumptions: three items imply stimulation through education (sample item: 'Going to school is important because I learn new things'), four items represent comfort and status together in one dimension ('Going to school is important to have a free choice of job'), three items stand for behavioural confirmation ('Going to school is important because my parents want me to') and another three items imply affection through education ('Going to school is important as I meet nice people and friends'). With values above 0.70, Kaiser-Meyer-Olkin measures indicate that the factor solution is suitable. Table 3 provides information about the scale reliability, which is reasonable, with a Cronbach's alpha of between 0.60 (three items) and 0.78 (four items). The researched concept of values of education thus consists of four distinct dimensions.

¹ Applying the Spearman-Brown formula allowed comparison of the Cronbach's alpha values of the shorter scale (four items) and the longer scale (five items) measuring the comfort/status dimension. At 0.65, the Cronbach's alpha of the longer scale presented a lower value in both eighth-grader settings and therefore indicated worse reliability.

– Table 3. Scale reliability of the values of education dimensions –

As demonstrated in Figure 1, eighth-grade students in Luxembourg and in Switzerland differ on average in the specific value(s) they assigned to education. Comfort and status through education were most important in both national settings, followed by stimulation in school and perceived affection in social interactions. Meeting the expectations and aspirations of relevant others (behavioural confirmation) as an education-related goal was less valued, but on average, students tend to reject the items measuring the value of education regarding behavioural confirmation. Secondary students in Luxembourg valued both behavioural confirmation and the physical comfort/social status benefits more highly than the Swiss students, however, and stimulation through education was significantly less valued in the Luxembourgish sample.

– Figure 1. Dimensions of values of education in Luxembourg and Switzerland (Canton of Bern) –

Differences structured by student social origin, gender and immigrant background were analysed employing regression models for time point two, and taking into account the nested sample structure by accounting for classrooms (see Table 4). Boys in Grade 8 in Luxembourg and Switzerland saw fewer benefits in education regarding stimulation. Confirmation of social expectations related to education was more important in the male value system than in the female value system in both national settings. Male students in the Swiss sample also valued affection less than female students. Significant effects concerning social origin can only be noted in the Swiss sample. Students from the middle classes (as opposed to upper-middle-class offspring) assigned a lower value to stimulation, to comfort/status and to affection – only the value of behavioural confirmation through education did not differ between the social classes. Immigrant background effects differed between the country settings: second-generation immigrants in Luxembourg valued stimulation and comfort/status less than Luxembourgish non-immigrant students, and first-generation immigrants assigned a lower value to stimulation and affection (affection was also less valued by 2.5th-generation immigrants). In Switzerland, the data showed a different picture: immigrant background had only positive significant effects. All immigrants revealed a higher value of education regarding behavioural confirmation (the

2.5th-generation immigrants on the 10 % significance level) and first generation immigrants saw a greater benefit of education in relation to comfort and social status.²

– Table 4. Values of education (multilevel mixed-effects linear regression models) –

Discussion

The value people assign to education is a core argument in both socialisation theories and rational choice approaches when explaining educational inequalities, although it is not frequently described as such. Seen as either part of a general class-specific cultural capital (Bourdieu and Passeron [1970] 1977) or as a perceived benefit of the process of educational decisions (see Breen and Goldthorpe 1997), this value basically refers to the different preferences of social groups. Taking this as a point of departure, we conceptualised values of education to obtain a deeper understanding of these underlying social values. We demonstrated the need for a broader concept of values of education, which goes beyond the well-studied monetary benefits of education, and this may contribute significantly to the currently used rational choice approaches to educational inequalities (for example, Becker 2003; Breen and Goldthorpe 1997). In this regard, values of education are also comprised of non-monetary benefits relating to social and intrinsic dimensions. We adapted the SPF theory by Lindenberg (1986) – a rational choice approach that emphasises the universal goals of physical and social well-being and five instrumental goals – to study how education (schooling) contributes to the achievement of general human goals.

The factorial dimensions (exploratory factor analysis) derived from the binational sample of lower secondary students in Luxembourg and Switzerland (Grades 7 and 8) are broadly in line with the theoretical assumptions, and depict the instrumental goals of SPF applied to education. Tests of the construct validity of the new measurement instrument reveal evidence for a first-order four-factor construct and internal consistency of the scale; however, rather than five dimensions as outlined in the SPF model (Ormel et al. 1999), the empirical analysis of the values of education concept revealed four dimensions, namely in benefits for stimulation, for comfort/status, for behavioural confirmation and for affection. Comfort as an

² Taking into account the intersectionalities of the three axes of inequality (Gross, Gottburgsen and Phoenix 2016), we tested for interaction effects between gender and social origin, as well as gender and immigrant background in order to partial out gender effects related to family background. Significant interaction effects were not found, however, which may be due to low sample numbers.

instrumental goal for achieving physical well-being and status loads on one dimension among lower secondary school students. As a positional good in relation to social status and, therefore, an instrumental goal for the achievement of social well-being, status through education seems to be strongly linked to physiological needs. In valuing education, students thus perceive an overall value for future opportunities relating to occupation, resources and their living situation. As argued by Reddig and Tranow (2014), SPF theory is useful for a deeper understanding of the mechanisms of preferences for social behaviour. This study, moreover, demonstrated that SPF theory is applicable for explaining differentials in the value assigned to education. How the theory may explain educational decisions needs to be more deeply examined, however, as it is still unclear how the different perceived benefits of education are related to effects on educational trajectories. The social production of subjective well-being – differing as a function of social characteristics – depicts the formation of specific social values. In this way, SPF theory broadens both socialisation and rational choice theories on educational inequalities not only at a theoretical level, but also empirically, as shown in this study. The values of education scale provides a data-based test of Lindenberg's (1986) approach, even though particularly applied to the field of schooling.

Considering our hypothetical scenario outlined in the theory sections regarding different groups, analyses revealed that distinguishing between different dimensions of values of education is necessary because there is no general higher or lower value. Gender differences seem to be most pronounced. In both samples, the genuine extrinsic dimension of the utility of education – behavioural confirmation – is valued higher among male students, and girls perceive the dimension of stimulation as more relevant. These findings back assumptions of differential motivational resources by gender, with female students perceiving more benefit from the learning environment in school. Immigrant background effects, by contrast, differ between the students of both countries. Only immigrant students in Switzerland demonstrated a higher value of education for behavioural confirmation (all immigrants) and comfort/status (first generation). These results are in line with recent findings showing a higher value of education and educational aspirations among immigrant students due to more optimism (Kao and Tienda 1995), and a stronger need for education in regard to social integration (Hadjar and Scharf 2018; Salikutluk 2016; Van de Werfhorst and Van Tubergen 2007). The finding of a greater importance of the expectations of significant others among immigrants in Switzerland, in particular, offers more insights into how the immigrant optimism of the parents (their educational aspirations) is transferred to a social value by students with an immigrant background. In Luxembourg, immigrants do not differ in the behavioural confirmation

dimension from non-immigrants, presumably due to the perception of the majority of immigrants, who are of Portuguese and working-class origin, that a higher educational level would not provide them with additional benefits regarding their opportunities in society and particularly on the labour market. Social origin showed the weakest association with the different dimensions of values of education in light of the country comparison, as social class effects are subordinated to gender and immigrant background in Luxembourg. The effects of social origin in the Swiss sample relate to a lower value of education regarding all dimensions, however, except for behavioural confirmation among the middle-class students compared to a higher value in upper-middle-class students in Switzerland. Accordingly, upper-middle-class offspring perceive a higher benefit of schooling for achieving higher social positions in terms of status maintenance (Becker 2003), and for a stimulating setting and comfortable social environment (affection).

It is surprising that there is no difference between working-class and upper-middle-class offspring in values of education in both samples. If we assume that there are no methodological issues (such as a lack of understanding regarding the values of education scale among working-class-students or less reliable reporting of the professions of the parents among this group leading to misclassifications), the results may show that schooling is important for both privileged and disadvantaged students. This would be in line with the subjective expected utility argument of Esser (1999) that the benefits of educational pathways are the same for different social strata, and that it is mainly the perceived probability of success and the status maintenance function which differ.

The extrinsic dimensions of values of education are more important in the highly stratified school system of Luxembourg, and stimulation as an intrinsic feature is less valued among eighth-grade students in Luxembourg compared to students in the Swiss canton of Bern. This result may reflect institutional embeddedness, since, in addition to social backgrounds, education systems shape values and attitudes towards education as a factor of context (Hadjar and Gross 2016). More heterogeneity (in the case of Switzerland) could lead to a system with more intrinsic values. A strongly segregated student body, on the other hand, might instead be related to extrinsic values of education.

Conclusion

In summary, this study demonstrates that SPF theory (Lindenberg 1986; Ormel et al. 1999) can be applied to education and that the perceived benefit of education and attending school goes

beyond monetary value. The value of education in its different dimensions is not universal for groups structured along the most common axes of inequalities: social origin, gender, and immigrant background. Slight national differences indicate that values of education and how they are shared among different social groups are affected by societal factors, presumably including factors such as the cultural climate regarding education, education system characteristics and the stratification of society.

Specific age groups need to be taken into account when interpreting the results. The students were still in a higher stage of compulsory schooling, and this compulsory nature of their participation in education may go along with – compared to later non-compulsory educational stages – relatively less variability in regard to the utility of schooling. Our analysis thus followed the most conservative way of testing: the differences we found should be more pronounced in other research based on students of older age.

Further limitations relate to the generalisability of the results. This study is confined to the Western European countries of Luxembourg and Switzerland. Although there seem to be universal patterns, the empirical values of education concept (relating to schooling from a student's perspective) may not apply to all cultures; but primarily to western industrialised societies. As the school student samples are not representative, mean differences cannot be interpreted. Mechanisms in terms of group differences appear to be meaningful, however, as several possible causes of bias were controlled for. Operationalising social origin with information based on parental professions gathered from students is always a challenge, as students may not know exactly what their parents do; however, certain validation checks employing other measurements for cultural and economic resources, such as books and household possessions, did not reveal contradicting results. A more general issue relates to whether the values of education scale does in fact measure values rather than specific experiences at school. While values always link to previous socialisation experiences to some extent (although much less than specific attitudes), exploratory factor analyses clearly showed that students understood the distinction we made in our questionnaire between more general orientations towards schooling and item batteries relating to attitudes towards school and specific experiences. Finally, due to reasons of complexity, we only looked at immigrant generations and did not take different ethnic groups into account.

We focused on three axes of inequality in this article, and analysed how students differed in their perceptions of the benefits of education during compulsory schooling. Future studies should examine the impact of values of education on the outcome variables (i.e. school achievement) that predict school success and (the reproduction of) educational inequalities.

The concept also needs to be tested among older students in upper secondary education, as well as among adults. In doing so, the importance of going to school should be replaced by the importance of education in general, or the benefit of higher education.

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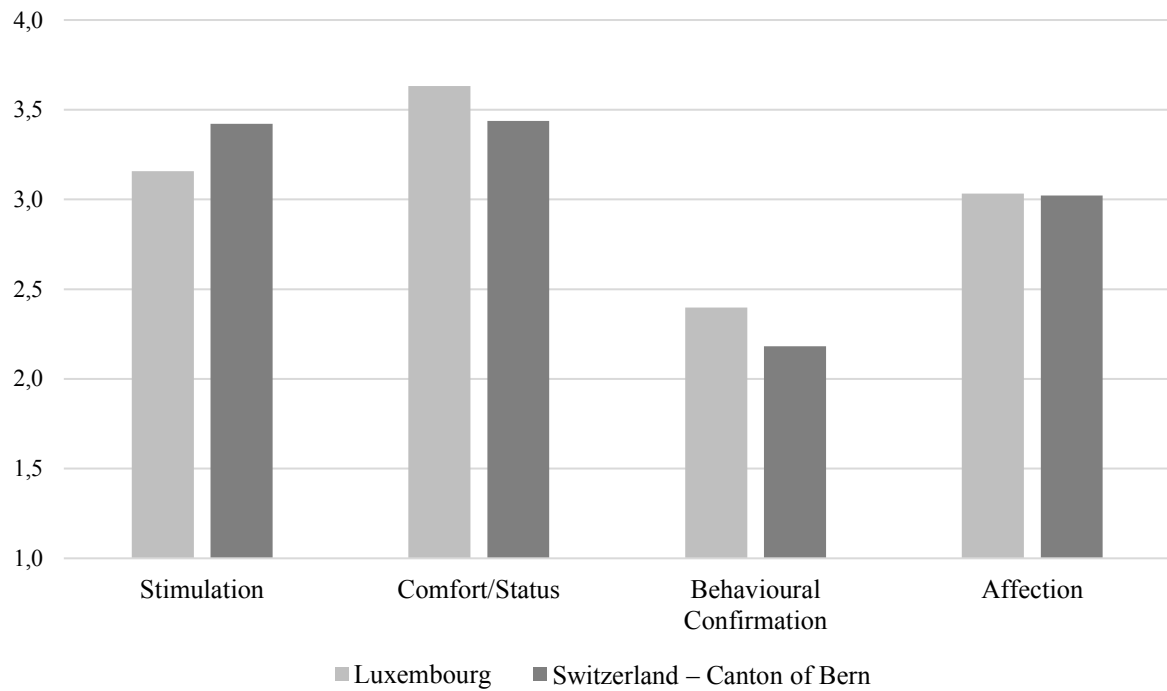
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Figure 1. Dimensions of values of education in Luxembourg and Switzerland (Canton of Bern)



Data Source: SASAL-School Alienation in Switzerland/Canton of Bern and Luxembourg (University of Bern/CH, University of Luxembourg/LU, wave 2).

Table 1. Social production function theory applied: Producing subjective well-being through education

Top level	Subjective well-being through education				
Universal goals	Physical well-being through education		Social well-being through education		
First-order instrumental goals	Stimulation/ Activation (optimal level of arousal)	Comfort (absence of physiological needs; pleasant and safe environment)	Status (control over scarce resources)	Behavioural Confirmation (“approval for doing the right things”)	Affection (positive input from caring others)
Activities and endowments (means of production for instrumental goals) (<i>examples</i>)	<i>Learning activities in school, thirst for knowledge</i>	<i>Education as basis for future (financial) opportunities, current comfort in spite of education</i>	<i>Graduation, Occupation, Prestige</i>	<i>Reacting to expectations of family and social environment</i>	<i>Being together with friends and classmates, positive emotional school setting</i>

Source: Own table, adapted from Ormel et al. (1999: 67)

Table 2. Exploratory factor analysis of the values of education scale: Reduced number of items

Factor loadings	Luxembourg				Grade 8 (N=423)				Switzerland – Canton of Bern				Grade 8 (N=488)			
	Grade 7 (N=418)								Grade 7 (N=478)							
Items	STI	C/STA	BEC	AFF	STI	C/STA	BEC	AFF	STI	C/STA	BEC	AFF	STI	C/STA	BEC	AFF
Going to school is805				.784				.707				.747			
bad because school is boring (r)																
bad as I have no time for other things (r)	.721				.828				.817				.784			
important because I learn new things	.757				.613				.694				.770			
important to earn more money later		.695				.865				.819				.729		
important to have a free choice of job		.799				.770				.517				.598		
important to afford my own house later		.764				.757				.751				.852		
important to make my dreams come true		.637				.577				.673				.536		
important because my parents want me to			.655				.776				.812				.768	
important because everyone does it			.762				.740				.802				.811	
important so that others don't think I am stupid			.771				.699				.676				.719	
important as I meet nice people and friends				.768				-.661				-.805				-.785
important as there are people who understand me				.776				-.740				-.769				-.833
good because I am liked there				.704				-.838				-.777				-.770
Kaiser-Meyer-Olkin measure		.768				.780				.753				.744		

Note. Extraction Method: Principal Component Analysis; Rotation Method: Oblimin with Kaiser Normalisation.

Factorial dimensions: STI=Stimulation; C/STA=Comfort/Status; BEC= Behavioural Confirmation; AFF=Affection

Data Source: SASAL-School Alienation in Switzerland/Canton of Bern and Luxembourg (University of Bern/CH, University of Luxembourg/LU, waves 1 and 2)

Table 3. Scale reliability of the values of education dimensions

Cronbach's Alpha Dimensions	Luxembourg		Switzerland – Canton of Bern	
	Grade 7	Grade 8	Grade 7	Grade 8
Stimulation (three Items)	.657	.678	.617	.667
Comfort/Status (four Items)	.684	.783	.673	.656
Behavioural Confirmation (three Items)	.623	.599	.652	.679
Affection (three Items)	.675	.647	.707	.735

Data Source: SASAL-School Alienation in Switzerland/Canton of Bern and Luxembourg (University of Bern/CH, University of Luxembourg/LU, waves 1 and 2)

Table 4. Values of education (multilevel mixed-effects linear regression models)

Unstandardised B (95% confidence intervals)	Stimulation	Comfort/Status	Behavioural Confirmation	Affection
Luxembourg				
Gender (Ref. female)				
male	-.20 ** (-.32/-.07)	-.08 † (-.17/.02)	.19 * (.04/.34)	-.09 (-.21/.03)
Social origin (Ref. upper middle class)				
Middle class	.08 (-.07/.23)	-.01 (-.13/.10)	.05 (-.12/.23)	-.12 (-.26/.03)
Working class	.08 (-.12/.29)	.12 (-.03/.28)	.06 (-.18/.31)	-.01 (-.21/.19)
Immigrant background (Ref. non-immigrants)				
2.5th-generation immigrants	-.11 (-.29/.07)	-.12 † (-.26/.02)	-.01 (-.23/.20)	-.18 * (-.36/-.00)
Second-generation immigrants	-.17 * (-.33/-.01)	-.14 * (-.26/-.02)	.03 (-.16/.22)	-.12 (-.28/.04)
First-generation immigrants	-.23 * (-.42/-.04)	-.12 (-.26/.02)	-.00 (-.23/.22)	-.23 * (-.42/-.04)
N	448	448	446	447
R ² (OLS)	.04	.03	.02	.03
Wald Chi-Square	18.43	11.96	7.79	14.53
Constant	3.34 ***	3.77 **	2.24 ***	3.28 ***
Switzerland – Canton of Bern				
Gender (Ref. female)				
male	-.19 *** (-.29/-.10)	.07 (-.02/.16)	.20 ** (.05/.34)	-.15 * (-.27/-.03)
Social origin (Ref. upper middle class)				
middle class	-.14 * (-.26/-.02)	-.13 * (-.20/.00)	.05 (-.12/.22)	-.16 * (-.31/-.02)
working class	-.04 (-.23/.15)	-.07 (-.25/.11)	-.04 (-.32/.24)	-.18 (-.41/.06)
Immigrant background (Ref. non-immigrants)				
2.5th-generation immigrants	-.02 (-.17/.12)	.03 (-.10/.17)	.21 † (-.01/.43)	.08 (-.10/.26)
Second-generation immigrants	-.10 (-.24/.05)	.11 (-.03/.24)	.26 * (.05/.47)	-.08 (-.26/.10)
First-generation immigrants	-.01 (-.17/.15)	.19 * (.04/.35)	.37 ** (.13/.61)	-.17 (-.37/.04)
N	476	476	476	476

R ² (OLS)	.05	.03	.05	.04
Wald Chi-Square	24.29 ***	14.79 *	22.75 ***	19.00 **
Constant	3.63 ***	3.64 ***	1.95 ***	3.24 ***

Note: Significance levels: †.10, *.05, **.01, ***.001; cluster: school classes.

Data Source: SASAL-School Alienation in Switzerland/Canton of Bern and Luxembourg (University of Bern/CH, University of Luxembourg/LU, wave 2).

Table A1 (appendix). Exploratory factor analysis of the values of education scale

Factor loadings	Luxembourg Grade 7 (N=418)				Grade 8 (N=423)				Switzerland – Canton of Bern Grade 7 (N=478)				Grade 8 (N=488)				
Items	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5
Going to school is ...																	
important to earn more money later			.693				.838				.728				.718		
important to have a free choice of job			.796				.802				.607				.629		
important to understand the world	.389		.381				.323				.370				.455		
bad because school is boring (r)	.694				.731							.611					.750
important to afford my own house later			.777				.763				.732				.806		
important because my parents want me to		.590				.746				.796				.814			
important because everyone does it		.667				.716				.685				.767			
bad because many think school is uncool (r)	.462	-.418			.609	-.317				-.357		.427				.645	
important as I meet nice people and friends				-.734	-.302			-.586	.713								.859
important because I am expected to attend		.413		-.323		.643				.750				.802			
important as there are people who understand me				-.750				-.765	.752								.777
important to get a good education			.549				.776				.606				.565		
bad because I have to learn a lot (r)	.649	-.329			.777							.806				.764	
important to make my dreams come true			.621				.612				.698				.556		
important so that others don't think I am stupid		.712				.657				.657				.554			
important because it is fun	.688				.330			-.542	.393			.541	.527			.380	
bad as I have no time for other things (r)	.649				.678						.732					.735	

important because I learn new things	.761		.486				.579		.605
important because I can try out a lot	.594		.366	-.428	.402		.448	.524	.300
important because I am praised for good performance	.335	.392	.306	-.425	.407	.316		.771	
good as I get along well with teachers	.427		-.452	-.700	.574		.343	.801	
good because I am liked there			-.725	-.761	.779			.341	.602

Note. Extraction Method: Principal Component Analysis; Rotation Method: Oblimin with Kaiser Normalisation.

Data Source: SASAL-School Alienation in Switzerland/Canton of Bern and Luxembourg (University of Bern/CH, University of Luxembourg/LU, waves 1 and 2).