

Research Reports

Subjective Well-Being of Children in the Context of Educational Transitions

Cross-Sequential Results From Two European Countries With Different School Systems

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Abstract

The objective of two empirical studies is the analysis of the development of subjective well-being in kindergarten and elementary school students in the context of the educational transitions (1) from kindergarten to elementary school and (2) from elementary to secondary schools in two different national school systems. Semi-structured interviews on self-esteem and dysthymic mood (i.e., low spirits, feelings of depressiveness and of dejection) were administered in 5 cohorts (two kindergarten and the first three elementary school years). Measurements were repeated three times each a year apart. Samples refer to 312 German and 244 Luxembourg children enrolled in educational systems with optional kindergarten, 4-year comprehensive elementary school, and educational placement thereafter (Germany) *versus* obligatory kindergarten and 6-year comprehensive elementary school (Luxembourg). Time- and age-effects point to significant discontinuities in the development of subjective well-being. There are declines of self-esteem and increases of dysthymic mood just after school enrollment ("transition shock") in the Luxembourg sample, whereas quite similar developments are observed in the last elementary school year before educational placement for secondary education in the German sample. School enrollment and educational placement for secondary education are critical life events with significant impact on children's well-being, which varies between different school systems.

Keywords: well-being, school transition, cross-sequential analysis, school enrollment, educational placement, national differences

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Introduction

Subjective well-being is a significant indicator and prerequisite of positive development throughout the whole life course including early and middle childhood. Subjective well-being and mental health ensure freedom of action, acting out of curiosity, exploration, and learning, willingness for action, and—at least for some—risk taking, as well as self-confidence, attachment to significant others, and self-actualization (see, e.g., Furlong, Gilman, & Huebner, 2009; Krampen, Seiger, & Steinebach, 2012; Peterson & Seligman, 2004; Rogers, 1961; Seligman, 2002). Besides feelings and mood (e.g., happiness, dysthymic mood, life satisfaction, etc.) self-esteem is conceptualized as a significant (normative) part and indicator of subjective well-being in the historically early humanistic approaches to optimal development and mental health (see, e.g., Bühler, 1971; Bühler & Allen, 1972; Maslow, 1954, 1962; Rogers, 1961) as well as in the neo-humanistic approaches (e.g., positive psychology; Peterson & Seligman, 2004; Seligman, 2002). Self-esteem, defined by the judgment and feelings about the self, can be described normatively as being positive versus negative, while self-concept is defined by the information or cognitions

an individual has about himself or herself, which “can be characterized by its realism or unrealism, its completeness or incompleteness, or by the complexity of the concepts used to describe the self” (Germain, 1978, p. 386). Because both self constructs are interwoven, it is difficult to measure self-esteem and self-concept independently especially in school age children, whose self is in developmental differentiation with reference to their different life domains as well as to the separating of self-esteem and (e.g., academic) self-concept (see, e.g., Germain, 1978).

Threats to individual well-being, that is—amongst others—self-esteem and (dysthymic) mood—result from non-normative, historical, and normative critical life events, which are individually anticipated and/or experienced as stressful without possibilities of effective coping (e.g., Lazarus & Folkman, 1984). Thus, such life events cannot be—at least at first—subjectively understood and conceptualized as challenges for one’s own development with the coping strategies at hand immediately or in the (near) future. Nonnormative critical life events can arise for everyone at any time (e.g., sudden illness, accidents, sudden illness or death of a loved one), historical life events arise for members of a cohort at the same time (e.g., war, economic boom or economic recession, technological innovations, catastrophes), and normative critical life events are more or less strongly defined cultural and/or national social norms and laws in question (e.g., school enrollment, student college enrollment, females’ versus males’ typical marriage age, retirement age).

State of Research on Educational Transitions on Children in Schools

Normative critical life events have—in contrast to nonnormative and historical ones—the advantage that prevention is possible, because of their predictability within the cultural and/or national defined social norms and laws in question. Referring to this potential of prevention, Stewart, Sokol, Healy, Chester, and Weinstock-Savoy (1982) presented the results of cross-sectional studies on adaption to life changes in children and adults, which are initiated by the normative critical life events of children’s school enrollment, students’ college enrollment, women’s marriage, and women’s first childbirth. Stewart et al. describe the successful adaptation to all of these four different normative life events in different age stages very consistently, but quite generally by means of the stages (1) orientation and information acquirement, (2) striving for autonomy and assertiveness, and (3) integration. However, successful adaptation and coping can fail and subjective well-being can be affected negatively in each of these three stages. Disorientation and gathering of incorrect information at Stage I lead to a feeling of unease, low freedom of action, the risk to fail, and to be kept at this stage in confusion. Very strong striving for autonomy and assertiveness in Stage II can result in social isolation and depressive mood and, on the other hand, tenuous autonomy and low assertiveness at Stage II can result in high conformity and feelings of social dependency and loss of control. Disintegration at Stage III carries the risk of subjective failure in coping with ‘everyday’ life challenges, which subjectively are mastered by most—perhaps subjectively even all—others, with negative effects on self-concept, self-esteem, mood, and well-being. All of these risks at the different stages result in stress, impair subjective well-being, and can—in the worst case—facilitate the development of mental and/or somatoform disorders.

Besides *school enrollment*, educational placement for secondary education is another apposite and good example for normative critical life events in childhood, for both of which—at least in part—cross-national differences exist. Especially the impact of *school enrollment* on childhood development has been investigated frequently with reference to children’s cognitive development and personality development as well. Empirical results confirm more or less strong effects, which have been named in part by catchwords like “creativity slump” (e.g., Kaufman & Beghetto, 2009; Krampen, 2012; Torrance, 1968) or “transition shock” (Entwisle, Alexander, Pallas, & Cadigan, 1988) occurring after school entry.

There are fewer empirical studies on the impact of *educational placement for secondary education* (after finishing elementary school) on childhood development. This can be explained by the fact that only relatively few national educational systems provide for early educational placement after the 4th, 5th, or 6th elementary school grade in favor of long-term comprehensive schooling systems.

An important exception are the studies of the Eccles-Midgley research group at the University of Michigan at Ann Arbor on the negative effects of the transition from 6th grade elementary to 7th grade middle grade schools / junior high schools on student motivation, self-esteem as well as self- and task-related beliefs in mathematics (e.g., Eccles, Midgley, et al., 1993; Eccles, Wigfield, et al., 1993; Feldlaufer, Midgley, & Eccles, 1988; Midgley, Feldlaufer, & Eccles, 1989a, 1989b; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991). In a stage-environment fit model Eccles, Midgley, et al. (1993, p. 90) “advance the hypothesis that some of the negative psychological changes (...) result from a mismatch between the needs of developing adolescents and the opportunities afforded them by their social environments in the school and in the home.” Students’ perceptions of their teachers’ supportiveness and teachers’ sense of efficacy seem to be crucial: “Students who moved from high- to low-efficacy math teachers during the transition ended the junior high year with the lowest expectancies and perceived performance (even lower than students who had low efficacy teachers in both years) and the highest perceptions of task difficulty” (Midgley et al., 1989a, p. 247). Teacher data and observations in classrooms showed that—in comparison to 6th grade elementary school teachers—junior high school teachers in general “controlled students more, provided them with fewer decision-making opportunities, and felt less efficacious” (Eccles, Wigfield, et al., 1993, p. 553). Therefore, after the transition students were given fewer opportunities for input, interaction, and cooperation (Feldlaufer et al., 1988) which can result in a “developmental mismatch (...) between maturing children and the classroom environments they experience before and after the transition to junior high school” (Feldlaufer et al., 1988, p. 133).

Concerning educational placement for secondary education (after finishing elementary school) there are—in addition—empirical studies demonstrating the effects of mainstreaming, ability grouping, and educational placement in secondary and college education on the self-concept and achievement of children, adolescents, and young adults, which are explained by the change of the students’ reference group. Originally, these studies refer to the classic ‘reference-group effect’ (see, e.g., Schwarzer, Lange, & Jerusalem, 1982), which has been recently renamed in the research domains of giftedness and ability grouping by the catchword ‘big fish little pond effect’ (see, e.g., Dai & Rinn, 2008; Marsh, 1987; Marsh, Trautwein, Lüdtke, Baumert, & Köller, 2007; Wouters, De Fraine, Colpin, Van Damme, & Verschueren, 2012).

Research on school enrollment or on educational placement too mainly concerns institutional adaptation itself (e.g., Entwisle et al., 1988; Stewart et al., 1982) and—primarily—the prediction of academic achievement (e.g., Dai & Rinn, 2008; Entwisle et al., 1988; Garrison, Earls, & Kindlon, 1984; Graue & DiPerna, 2000; Keogh, 1986; Klein, 1982; Lee, 2010; Maaz, Trautwein, Ludtke, & Baumert, 2008; Zakharova & Tagieva, 1986). Investigations refer less often to certain aspects of personality development (with the obvious focus on self-concept and on cognitive development, especially creativity development; e.g., Cole et al., 2001; Dai & Rinn, 2008; Eccles, Wigfield, et al., 1993; Kaufman & Beghetto, 2009; Krampen, 2012; Torrance, 1968; Wigfield et al., 1991; Wouters et al., 2012; Zakharova & Tagieva, 1986), and even less to the subjective well-being of students (Ederer, 1987) and to more prolonged developmental analyses of the transitions processes and their mid- and long-term effects. The last is in conjunction with the methodologically weak developmental design of many empirical studies, which make

recourse to cross-sectional and to (rather short-term) longitudinal designs with limited time spans, that is, mostly, for a half or only one year.

We are in need of developmental studies with (1) longer time spans (at least, e.g., for two, three years or even more) and (2) studies with methodologically more ambitious and meaningful developmental designs (beyond cross-sectional and longitudinal designs), that is, cross-sequential designs permitting the interpretation of cohort and time effects in development within one study. Cross-sectional designs compare age groups at one time of measurement confounding age and birth cohort, longitudinal designs include different times of measurement (in one or more cohorts) confounding age and time effects. The advantage of cross-sequential design is the possibility to identify age effects in direct comparison to time effects and cohort effects (at least, when repeated measurement effects are controlled).

A second methodological restriction of the existing empirical studies on educational transitions concerns their focus on descriptive developmental analyses within one given (national) school and educational system. Because there is no possibility to compare the developmental processes under study between different school systems with different educational transition points, all observed developmental processes may refer to general, “natural” developmental processes of personality, achievement, and/or psychosocial development in childhood. Of course, experimental randomization of students to different school systems and educational transitions is not possible for ethical reasons. However, a quasi-experimental, naturalistic research approach is possible, that is, one in which children’s subjective well-being and the development of their well-being is analyzed in the context of the specific transition characteristics of different existing national educational administration systems.

Present Studies: Objectives, Design, and Implementation

In a cross-sequential study with the strong focus on creativity development in kindergarten and elementary school students from Luxembourg and Germany (Krampen, 2012), data on two indicators of subjective well-being (i.e., self-esteem and dysthymic mood) were additionally obtained with a primary explorative research motivation. This exploratory motivation and concerns traces back to the problems in the measurement of self-concept and dysthymic mood in young children, at least, kindergarteners without reading and writing skills and without access to information from children’s reference persons (e.g., parents and/or teachers). Thus, it was decided to make an attempt of measurement via semi-structured interviews of the children after individual creativity and intelligence testing.

The study was implemented in two different educational systems in neighboring regions in Western Europe. The first educational system is in Luxembourg. In this system, pupils are obligated to attend kindergarten for two years (last two years before elementary school enrollment), a six-year comprehensive elementary school, and educational placement for secondary education after the 6th school year. The second educational system is in Germany, and consists of an optional kindergarten education, a four-year comprehensive elementary school, which is followed by the educational placement into secondary education. The difference between optional (Germany) versus mandatory (Luxembourg) kindergarten education do not result in selection biases, because dual working parents (58% in Luxembourg vs. 61% in Germany), traditional families with one spouse working and the other not (30% vs. 31%) and single parents (12% vs. 8%) are comparably represented in the samples of the two studies presented in the following. Planning and design of the investigations in both countries are identical. However, due to differences in test administration in the two countries, statistical analyses were conducted separately and the results are presented here as two independent studies.

These differences result from the fact that Luxembourg is a multilingual nation with three official languages (French, German, and Lëtzeburgesch) and multilingual education. Furthermore, approximately 40% of the inhabitants of Luxembourg have a migration background and another primary language (mainly Portuguese, Italian, and English). It must be noted that these languages—to a great extent—are linguistically weakly related languages, because they belong to the Romance versus Proto-Indo-European language families with different language histories including differences not only in semantics and morphology but in syntax and pragmatics too. Therefore, inhabitant and migrant Luxembourg college students carried out test administration and semi-structured interview in the Luxembourg sample in the *preferred language of the child*.

The German region (which is a direct neighbor of Luxembourg in the open EU countries) is monolingual (German) with only approximately 5% of the inhabitants with a migration background. Therefore, all kindergartens and schools are monolingual (foreign language learning starts in the 5th school year) and all the children were tested and interviewed in the German language by German college students.

Thus, multilingual data gathering in the Luxembourg sample and monolingual data gathering in the German sample require separate data analyses including within-sample test score standardizations. Within sample standardizations (implemented separately for each complete national sample including all times of repeated measurement) lead to linear transformed standard values of equivalent Terman-Values (T-values). Thus, the identity of the two countries is preserved, and the comparison of the results in the General Discussion section is aimed to the cross-national comparison in which each national context presents some specificity in terms of language and educational system.

The objective of the present studies is to explore the development of subjective well-being in children in the context of educational transitions concerning (1) school enrollment after either obligatory (Luxembourg) or voluntary (Germany) kindergarten education and (2) experienced (Germany) or anticipated (Luxembourg) educational placement for secondary education. Assuring high standards of developmental psychology research (i.e., cross-sequential design and control of retest effects in repeated measurements), a quasi-experimental approach (which refers to the given reality of two different national educational administration systems in neighboring European countries) was implemented. The research is necessary and different from existing studies on the topic, because of the above described limitations of the empirical state of the art in design as well as in methodology.

Study I: The German Study

Method

Sample — Corresponding to the study on creativity development in childhood (Krampen, 2012), participants of the study were 312 kindergarten and elementary school students (some of them becoming secondary school students at the later times of measurement) living in Southwest Germany in the city of Trier (approximately 100,000 inhabitants) as well as in surrounding towns and villages. This German region is located in the heart of Western Europe and is situated directly next to the open European border to Luxembourg. Children were selected randomly (controlling for sex) from five different educational cohorts: Children were enrolled in the next to last kindergarten year ($n = 62$), last kindergarten year ($n = 62$) as well as in the 1st ($n = 63$), 2nd ($n = 62$), and 3rd elementary school year ($n = 63$). Age span at initial test was 4 to 9 years ($M = 6.8$, $SD = 1.61$ years). The sample comprised 156 females and 156 males.

After a (suitable for the child's age) description of the content and times of testing was provided, *informed consent* was obtained from each child participant. Specifically, on a form depicting a child being tested by an adult, the older children provided their signature and the younger children drew a small individual drawing as substitute for a signature. Before this, however, *written consent* for the investigation and data gathering was obtained from the educational administration authorities, the school principal, the child's teacher, and his/her parents. Of all individuals contacted, there were three refusals for participation: two from parents and one from a kindergarten child.

Procedure — The children were retested one year as well as two and three years after the initial test (T1). All tests were administered in the winter season after being in the (new) educational cohort, that is, in the kindergarten, elementary school, or secondary school grade level for approximately 10 weeks. Thus, longitudinal data refer to four times of measurement within three years (T1, T2, T3, and T4). This builds up a cross-sequential design with 5 educational cohorts and 4 times of measurement. As a consequence, at T2 children were enrolled in the last kindergarten year up to the 4th elementary school year, at T3 to the 1st elementary up to the 5th school year (i.e., the 1st grade level of secondary education), and at T4 the data cover up to the 2nd elementary school year up to the 6th grade level (i.e., the 2nd grade level of secondary education). Age span at T4 was T1-age plus 3 years, i.e., 7 to 12 years ($M = 9.7$, $SD = 1.62$). Because of continuous contact with the children and their teachers, dropout rates were low: Retests could be administered at T2 with 310 (99%), at T3 with 307 (98%), and at T4 with 295 children (95%) of the initial sample tested at T1. Dropout analyses did not indicate any biases with reference to the educational cohorts and to the dependent variables tested at the prior times of measurement.

In addition, for the control of possible retest effects in test scores, at T2 $N = 90$ children (enrolled in the last kindergarten year and 1st to 4th elementary school years) were tested for the first time. Informed consent was obtained from the children in this additional sample as in the main sample described above.

Measures — After creativity and intelligence testing (for details, see, Krampen, 2012; range of test duration: 45-70 minutes with 10- to 20-minute breaks taken by approximately 40% of the children), short semi-structured interviews were administered to the single child by the test administrator in the German language. Eight items each concern self-esteem and dysthymic mood of the child equaling a total of 16 items in all. All items were adopted from Ederer's (1987) questionnaire scales for the measurement of "dysthymia, psychosocial dependency, and self-esteem in ten-year-old boys and girls". Item selection was oriented to (high) item-scale correlation and (medium-size) item difficulty in the original 10-year-old sample (Ederer, 1987), but adjusted to kindergartener's language and cognitive development and item understandability.

The interviews were administered in a semi-structured manner similar to semi-structured clinical interviews. That is, the interviewer questions the child adaptively according to the child's understanding of the question, and gives examples with reference to the item content, explores, enquires, requests, and talks with the child about the topic of the item. Answer categories or rating scales are *not* presented to the child. Instead of this, all information from the shared dialog about each item topic are condensed to a rating made by the interviewer that the child (a) agrees with the item topic (3 points), (b) is somewhat unclear in his/her statements (2 points), or (c) rejects the item topic for his own person (1 point). Thus, by means of the semi-structured interview, diagnostic ratings (life-record data from observations and ratings, i.e., L'-data in the terminology of Cattell, 1965) and not the answers of the child him/herself directly (answers to questions, i.e., Q-data in the terminology of Cattell, 1965) are obtained. Item examples below refer to the beginning of the questions and not to the entire discourse about the questions between interviewer and child.

Two of the eight items for the measurement of *self-esteem* (SEL) each concern (1) self-evaluation of own competences and characteristics (e.g., “How good is your performance in singing, gymnastics, playing alone, or...?”), (2) satisfaction with own achievements and actions (e.g., “Are you always satisfied with your drawings, paintings, and pieces of handicraft...?”), (3) self-evaluations of own competences in social comparison to peers (e.g., “Is your performance in ... much better, the same as, or worse than that of your peer friends?”), and (4) subjectively perceived evaluations by others (“Does your teacher [mother] applaud you very often, often, or rarely when you perform in...?”). It must be noted that—explicated in the introduction with reference to Germain (1978)—there is a mixture of (normative) self-esteem and subjective evaluations of own performances in the items of this scale, which—however—is adequate for the measurement of normative aspects of the self in school-aged children (see, e.g., Germain, 1978).

Two of the eight items for the measurement of *dysthymic mood* (DM) each refer to (1) the frequency of unexplainable dysphoric states subjectively experienced by the child (e.g., “Are you sometimes, frequently, or seldom sad without knowing why?”), (2) desire for more emotional caring and affection of others (“How much would you like more caring and affection shown to you by other children [adults]?”), (3) unexplainable fears of being punished and disciplined (e.g., “Are you sometimes, frequently, or seldom afraid to be punished without knowing why?”), and (4) cognitive perseveration with negative content (e.g., “Do you sometimes, frequently, seldom, or never think about bad things and can’t stop it?”). It should be noted that the term “dysthymic mood” is preferred as opposed to the diagnostic mental disorder terms “dysthymia” or “depressive symptoms” (Ederer, 1987) to avoid psychopathological labeling and stigmatization of children with upper scale values. Rather, in the focus of the items are feelings of depressiveness and dejection or—in general terms—low spirits.

Reliability of the self-esteem and dysthymic mood scores is evaluated by Cronbach’s alpha for each of the four times of measurement (see Table 1). The reliability coefficients are satisfactory for statistical analyses at the group level (SD: $\alpha > .74$ and DM: $\alpha > .72$). Item parameters do not indicate the need for item selection or deletion, because the results on item-scale correlations and item difficulties are sufficient, but variable between the times of measurement.

Results of Study I: Germany

Test-Retest Effects — Checks for retest effects on test scores utilize the data from the $N = 90$ children (enrolled in the last kindergarten year and 1st to 4th elementary school year) tested for their first time at T2. Comparisons of this new sample with the longitudinal sample retested at T2 did not result in statistically significant mean differences neither for the test scores on self-esteem [$t(400) = 0.55$; $p > .10$] nor for these on dysthymic mood [$t(400) = 0.69$; $p > .10$].

Positional Stability Versus Plasticity Over Time — Relative (i.e., positional) changes examined longitudinally in the 4-year time span are low to medium in self-esteem and dysthymic mood. There is a slight, albeit nonsignificant tendency of positional stability to be higher for mood (see Table 1). Correlation coefficients of SEL and DM scores, respectively, decline to less than 4% common variance between more distant times of measurement. Thus, there is a low positional stability of the two indicators of subjective well-being in childhood development tested one to three years apart.

Table 1

Coefficients of Internal Consistency (Cronbach's α), Intercorrelations and Correlations With Intelligence of Self-Esteem and Dysthymic Mood at the Four Times of Measurement as Well as Coefficients of Test-Retest Stability Between the Four Times of Measurement in the German Sample

Coefficient	N	Scale		$r_{SEL/DM}$
		Self-esteem (SEL)	Dysthymic mood (DM)	
Internal consistency (α)				
1 st measurement (T1)	312	.76	.74	-.14*
2 nd measurement (T2)	310	.78	.73	-.10
3 rd measurement (T3)	307	.75	.73	-.07
4 th measurement (T4)	295	.76	.77	-.14
Correlation with intelligence (r)				
1 st measurement (T1)	312	.12*	-.08	
2 nd measurement (T2)	310	.22**	-.30**	
3 rd measurement (T3)	307	.28**	-.32**	
4 th measurement (T4)	295	.27**	-.42**	
Test-retest-stability (r_{tt})				
T1 - T2	310	.25**	.33**	
T1 - T3	305	.21**	.28**	
T1 - T4	294	.20**	.24**	
T2 - T3	307	.32**	.35**	
T2 - T4	294	.27**	.29**	
T3 - T4	294	.34**	.31**	

* $p < .05$. ** $p < .01$.

Correlations of Self-Esteem, Dysthymic Mood, Intelligence, and Creativity — Intercorrelations of self-esteem and dysthymic mood for the four times of measurement (see Table 1) are—as expected—negative, but—not as expected—very low and only reach statistical significance in two of the four times of measurement. Common variance does not exceed 2%. In connection with the reliability coefficients (see above and Table 1), this result points at a sufficient reliability of the differences of measurement between the scales on SEL and DM. Therefore, it can be concluded that self-esteem and dysthymic mood are two statistically relative independent, distinct indicators of subjective well-being, at least, in childhood.

In part, this is confirmed by means of the correlations of both variables with *general intelligence* (Standard Progressive Matrices, SPM; Raven, Court, & Raven, 1979; for details, see, Krampen, 2012): At all four times of measurement, a significant positive correlation is observed between intelligence and self-esteem (at most, 8% common variance; see Table 1). On the other hand, at T2-T3, the correlation of intelligence to dysthymic mood is significantly negative and the numerical values are slightly higher (at most, 18% common variance; see Table 1). Thus, intelligence test performance is connected somewhat more to dysthymic mood (and may be restrained by this) than it is connected to (positive) self-esteem (which facilitates performance less). However, this interpretation is contradicted by the result that neither self-esteem nor dysthymic mood shows essential correlations to ideational fluency and ideational flexibility, which are used as indicators of creativity and creativity development in childhood (for measurement details, see, Krampen, 2012): Correlation coefficients between dysthymic mood and the creativity indicators vary between $-.08 < r < .01$ ($p > .10$), the correlations between self-esteem and creativity vary between $.00 < r < .12$ ($r > .11$; $p < .05$).

Table 2

Results of Analyses of Variance for Self-Esteem (SEL) and Dysthymic Mood (DM) With the Between Factor Educational Cohort (5) and the Repeated Measurement Factor Time of Measurement (4) in the Luxembourg Sample (N = 228) and the German Sample (N = 294)

MANOVA effect	Self-esteem (SEL)	Dysthymic mood (DM)
German students		
Cohort		
F(4/290)	13.63**	15.34**
Effect size (<i>f</i>)	.48	.53
Time		
F(3/870)	14.22**	12.04**
Effect size (<i>f</i>)	.52	.48
Cohort x Time		
F(12/870)	0.94	1.11
Effect size (<i>f</i>)	.04	.01
Luxembourg students		
Cohort		
F(4/224)	17.02**	16.90**
Effect size (<i>f</i>)	.61	.60
Time		
F(3/672)	16.59**	15.70**
Effect size (<i>f</i>)	.58	.57
Cohort x Time		
F(12/672)	1.68	1.32
Effect size (<i>f</i>)	.04	.01

** $p < .01$.

Absolute Changes (Mean-Level): Cohort and Time Effects — Cross-sequential data analyses were computed by analyses of variance (ANOVA) with the between-factor *Five Educational Cohorts* and the repeated measurement factor *Four Times of Measurement*, each being one year apart from the other. Results of the computed ANOVAs are presented for the German Study in the upper half of Table 2. Firstly, in agreement with the introduction (there is no such hypothesis), there are no statistically significant interaction terms. Secondly, the main effects of the between (Cohort) and repeated measurement (Time) factors are statistically significant. Following the terminology of Cohen (1988), the effect sizes (*f*) of all ANOVA main effects are located at the boundary between small and medium effect sizes.

The cross-sequential results are presented graphically in Figures 1 and 2. The overlap of cross-sectional and longitudinal developmental gradients is high for both indicators of subjective well-being. This illustrates and confirms the agreements of the ANOVA main effects of Cohort and Time of Measurement. The cross-sequential results on self-esteem (see Figure 1) show a very steady trend from the next to last kindergarten year to the 2nd grade level of elementary school (post hoc single mean comparisons: $p > .10$), after this we find a slight (statistically nonsignificant; $p > .10$) decrease at the 3rd grade level, a strong decrease (statistically significant; $p < .01$) at the 4th grade level of elementary school (just before educational placement for secondary education), and a recovery in self-esteem at the 1st and 2nd grade level of secondary school ($p < .05$). In contrast, dysthymic mood is low at both kindergarten levels and at the 1st elementary school grade, shows an increase at the 2nd and 3rd grade level ($p < .01$), which intensifies at the 4th grade level ($p < .05$), and drops slightly at the first two grade levels of secondary education (statistically nonsignificant, $p > .10$; see Figure 2).

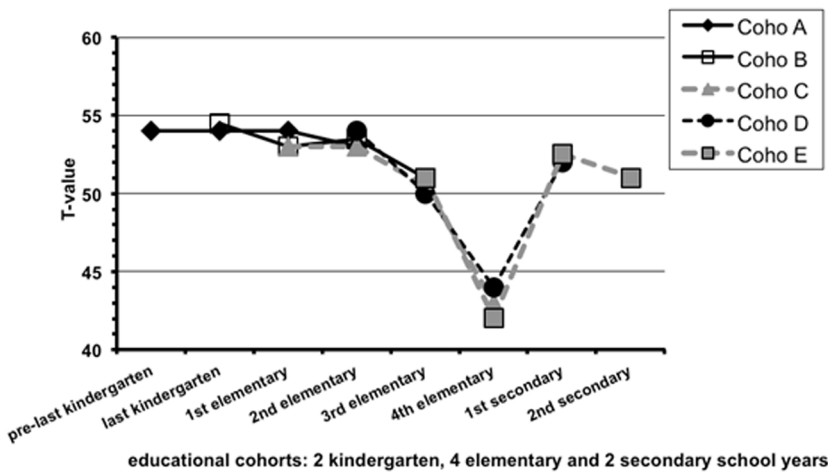


Figure 1. Cross-sequential results on self-esteem (SEL) in the German sample.

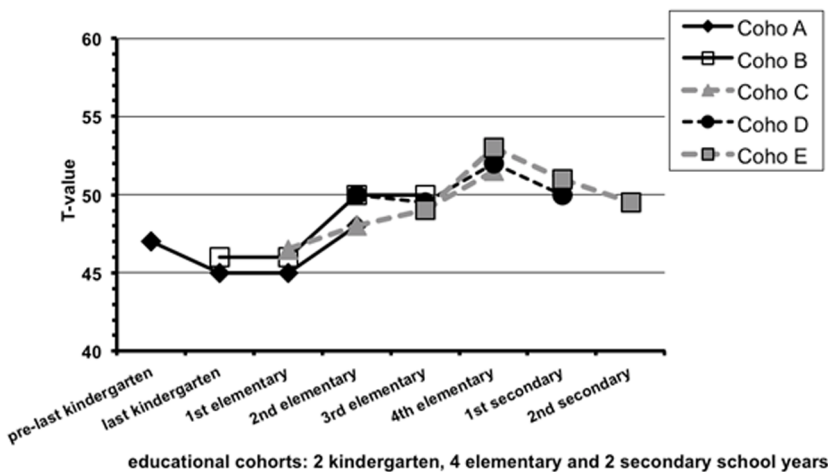


Figure 2. Cross-sequential results on dysthymic mood (DM) in the German sample.

Short Discussion of Study I: Germany

Longitudinal and cross-sectional data are in agreement for the development of subjective well-being in childhood. However, it has to be noted that the developmental gradients of the two indicator variables show some differences: Self-esteem is high from kindergarten up to the 2nd elementary grade level, thus, there is no “transition shock” after school enrollment. Hints for a decline in self-esteem are found at the 3rd elementary grade level and become strong at the 4th elementary grade level, just before educational placement for secondary education in the German educational system. On the other hand, dysthymic mood shows—after low scores from kindergarten up to the 1st elementary grade level—an earlier increase at the 2nd and 3rd grade level as well as reaching a maximum score at the 4th elementary grade level, with this last finding being in agreement with the lowest score in self-esteem. After educational placement for secondary education and the transition to a new reference peer group there are hints for a slight decrease in dysthymic mood, which—however—does not reach the mean score levels found at the kindergarten and 1st elementary grade levels. Positional stability of both indicators of well-being is low, pointing

at significant intraindividual differences in the developmental processes. Cross-sectional and longitudinal data are—with reference to reliability as well as to the lack of hints on retest effects and dropout biases—sound.

Study II: The Luxembourg Study

Method

Sample — Corresponding to the study on creativity development in childhood (Krampen, 2012) participants of the study were 244 kindergarten and elementary school students living in the capital city of Luxembourg (approximately 90.000 inhabitants) as well as in the surrounding towns and villages. They were selected randomly (controlling for sex) from five different educational cohorts: Children were enrolled in the next to the last kindergarten year ($n = 47$), last kindergarten year ($n = 45$) as well as in the 1st ($n = 56$), 2nd ($n = 45$), and 3rd elementary school year ($n = 43$). Age span at initial test was 4 to 9 years ($M = 6.7$, $SD = 1.57$ years). The sample consists of 124 females (51%) and 120 males (49%).

Just as in the German study (see above), *informed consent* was obtained from each child after a (suitable for the child's age) description of the content and times of testing was provided. Before the children were approached, *written permission* for the investigation was obtained from the educational administration authorities, the school principal, the child's teacher, and his/her parents. In this study, none of the approaches children, parents, or teachers refused participation.

Procedure — Just as in the German Study, the children were retested one year as well as two and three years after the initial test (T1). All tests were administered in the winter season after being in the (new) educational cohort, that is, in the kindergarten or elementary school grade level, for approximately 10 weeks. This builds up a cross-sequential design with 5 educational cohorts and 4 times of measurement. As a consequence, at T2, children were enrolled in the last kindergarten year up to the 4th elementary school year, at T3 in the 1st up to the 5th school year, and at T4 the data covers the 2nd up to the 6th elementary school year. Age span at T4 was T1 age plus 3 years, that is, 7 to 12 years ($M = 9.6$, $SD = 1.55$). Because of continuous contact to the children and their teachers, dropout rates are low: Retests could be administered at T2 with 235 (96%), at T3 with 232 (95%), and at T4 with 228 children (93%) of the initial sample tested at T1. Dropout analyses did not indicate any biases with reference to the educational cohorts and to the dependent variables tested at the prior times of measurement.

In addition, for the control of possible retest effects in test scores, at T2 $N = 115$ children (enrolled in the last kindergarten year and 1st to 4th elementary school year), at T3 $N = 50$ children (1st to 5th elementary school year), and at T4 $N = 88$ children (2nd to 6th elementary school year) were tested for their first time. Informed consent was obtained from the children in this additional sample as in the main sample described above.

Measures — As in the German Study, after creativity and intelligence testing (for details, see, Krampen, 2012; range of test duration: 50-75 minutes with 10- to 20-minute breaks taken by approximately 45% of the children), short semi-structured interviews for the measurement of self-esteem and dysthymic mood were administered to the child by the test administrator in the child's preferred (primary) language. This change of the data-gathering technique must be done because of the multilingual culture in Luxembourg and because of the different primary languages of children. For that, all 16-anchor items of the semi-structured interview applied in the German study (see above) were translated into French, Lëtzeburgisch, Portuguese, and Italian by multilingual native speakers.

Multilingual test administrators interviewed and talked to the child in his/her preferred language (T1-sample: $n = 102$ Lëtzeburgisch, $n = 64$ German, $n = 59$ French, $n = 16$ Portuguese, $n = 3$ Italian).

Just as in the German study, reliability of the self-esteem- and dysthymic mood scores is evaluated by Cronbach's alpha for each of the four times of measurement (see Table 3). All reliability coefficients are low and only barely sufficient for statistical analyses at the group level (SEL: $.57 < \alpha < .60$ and DM: $.49 < \alpha < .58$). Because there are no distinct empirical hints for item selection and scale reduction, all statistical analyses were computed by means of these scores with weak coefficients of reliability, which is attributed to the unavoidable heterogeneous procedure of multilingual data gathering. This is confirmed by the results of separate reliability analyses in the T1-subsamples of 102 testing in Lëtzeburgisch (SEL: $\alpha = .86$; DM: $\alpha = .79$), 64 testing in German language (SEL: $\alpha = .81$; DM: $\alpha = .73$), and 59 testing in French language (SEL: $\alpha = .72$; DM: $\alpha = .75$), which are comparable to the reliability coefficients in Study 1. However, the low reliability of the scales measuring the two indicators of subjective well-being must be kept in mind in the presentation and interpretation of all results obtained in the complete Luxembourg sample.

Results of Study II: Luxembourg

Test-Retest Effects — Checks for retest effects on test scores were analyzed using the data from the $N = 115$ children (enrolled in the last kindergarten year and 1st to 4th elementary school year) tested for their first time at T2, the $N = 50$ children (1st to 5th elementary school year) tested for their first time at T3, and the $N = 88$ children (2nd to 6th elementary school year) tested at T4 for their first time. Comparisons of these new, independent samples with the longitudinal sample retested at T2, T3, and T4, respectively, did not result in statistically significant mean differences for neither the test scores on self-esteem [SEL-T2: $t(348) = 0.97$; T3: $t(280) = 0.95$; T4: $t(314) = 0.58$; $p > .10$] nor the scores on dysthymic mood [DM-T2: $t(348) = 0.99$; T3: $t(280) = 0.62$; T4: $t(314) = 0.87$; $p > .10$]. Thus, retest effects in the repeated measurements of the two indicators of well-being, which may be a result of learning by prior testing or recall of test responses, are improbable.

Positional Stability Versus Plasticity Over Time — Relative (i.e., positional) changes examined longitudinally in the 4-year time span are lower than in the German sample (see Table 1 and Table 3 for comparison), but it must be considered that lower Cronbach's alpha coefficients set limits to the possible coefficients of positional stability. The same argument must be considered in the interpretation of the statistically significant correlation coefficients of the SEL and DM scores, respectively (see Table 3). However, the results seemingly confirm the results of the German study, suggesting that the positional stability of the two indicators of subjective well-being in childhood development tested one to three years apart is low.

Correlations of Self-Esteem, Dysthymic Mood, Intelligence, And Creativity — Intercorrelations of self-esteem and dysthymic mood for the four times of measurement (see Table 3) are negative, but statistically nonsignificant. In agreement with the results of the German study, it can be concluded that self-esteem and dysthymic mood are statistically two relatively independent, distinct indicators of subjective well-being, at least, in childhood. Just as in the German study, this is—in part—confirmed by means of the correlations of both variables with *general intelligence* (Standard Progressive Matrices, SPM; Raven et al., 1979; for details, see, Krampen, 2012): At all four times of measurement, a significant positive correlation is observed between intelligence and self-esteem (at most, 7% common variance; see Table 3). On the other hand and as in the German study, at T2-T3 the correlation of intelligence to dysthymic mood is significantly negative and the numerical values are—at least two times—slightly higher (at most, 12% common variance; see Table 3). Again, the low reliabilities of the SEL and DM scores must

Table 3

Coefficients of Internal Consistency (Cronbach's α), Intercorrelations and Correlations With Intelligence of Self-Esteem and Dysthymic Mood at the Four Times of Measurement as Well as Coefficients of Test-Retest Stability Between the Four Times of Measurement in the Luxembourg Sample

Coefficient	N	Scale		$r_{SEL/DM}$
		Self-esteem (SEL)	Dysthymic mood (DM)	
Internal consistency (α)				
1 st measurement (T1)	244	.59	.50	-.10
2 nd measurement (T2)	235	.58	.54	-.09
3 rd measurement (T3)	232	.58	.55	-.08
4 th measurement (T4)	228	.58	.57	-.10
Correlation with intelligence (r)				
1 st measurement (T1)	244	.15*	-.09	
2 nd measurement (T2)	235	.24**	-.31**	
3 rd measurement (T3)	232	.26**	-.15*	
4 th measurement (T4)	228	.24**	-.35**	
Test-retest-stability (r_{tt})				
T1 - T2	235	.28**	.31**	
T1 - T3	232	.27**	.31**	
T1 - T4	228	.25**	.29**	
T2 - T3	231	.37**	.44*	
T2 - T4	228	.31**	.29**	
T3 - T4	228	.32**	.34**	

* $p < .05$. ** $p < .01$.

be considered in their minimizing the numerical value of the coefficients possible. This is also true for the low correlations of self-esteem and dysthymic mood to ideational fluency and ideational flexibility, which are used as indicators of creativity and creativity development in childhood (for measurement details, see, Krampen, 2012): Correlation coefficients between dysthymic mood and the creativity indicators vary between $-.13 < r < -.01$ ($r > |.11|$, $p < .05$), the correlations between self-esteem and creativity vary between $.00 < r < .14$ ($r > .11$; $p < .05$).

Absolute Changes (Mean-Level): Cohort and Time Effects — Just as in the German study, cross-sequential data analyses were computed by analyses of variance (ANOVA) with the between-factor *Five Educational Cohorts* and the repeated measurement factor *Four Times of Measurement*. Results of the computed ANOVAs for the Luxembourg study are presented in the lower half of Table 2. In agreement with the introduction (there is no such hypothesis), there are no statistically significant interaction terms, but the main effects of the between (Cohort) and repeated measurement (Time) factors are statistically significant. Following the terminology of Cohen (1988), the effect sizes (f) of all ANOVA main effects are medium.

The cross-sequential results are presented graphically in Figures 3 and 4. As in the German study (see above), the overlap of cross-sectional and longitudinal developmental gradients is high for both indicators of well-being. The cross-sequential results on self-esteem (see Figure 3) show a marked decrease from the kindergarten years to the 1st to 4th grade levels of elementary school (post hoc single mean comparisons: $p < .01$), after this we find an increase ($p < .01$) at the 5th grade level, followed by the hint of a decrease at the 6th grade level (before educational placement for secondary education after the 6th grade level of elementary school) once again ($p < .05$). However, because of the study design, the last observation is grounded on longitudinal data only.

In contrast, dysthymic mood is low at both kindergarten levels, but increases significantly directly at the 1st and even more at the 2nd elementary school grade level ($p < .01$), remains high at the 3rd ($p > .10$) and shows some recovery at the 4th grade level ($p < .05$; see Figure 4). During the last two grade levels of elementary school education, just before educational placement for secondary education in Luxembourg, there is an increase of dysthymic mood once again ($p < .05$; see Figure 4).

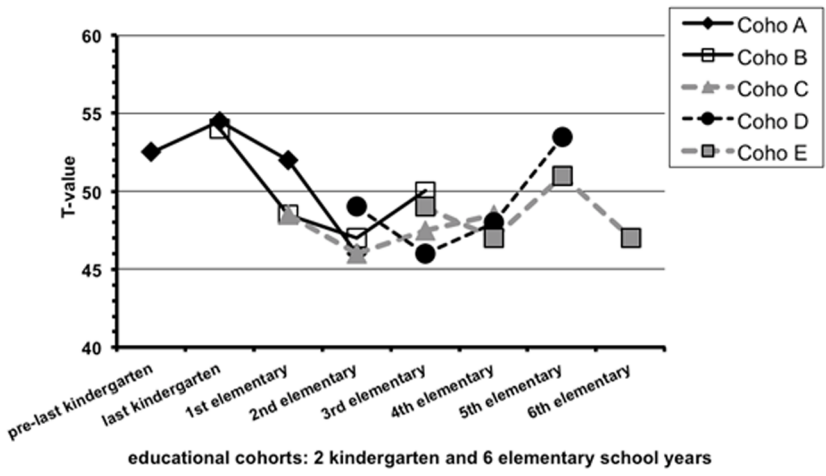


Figure 3. Cross-sectional results on self-esteem (SEL) in the Luxembourg sample.

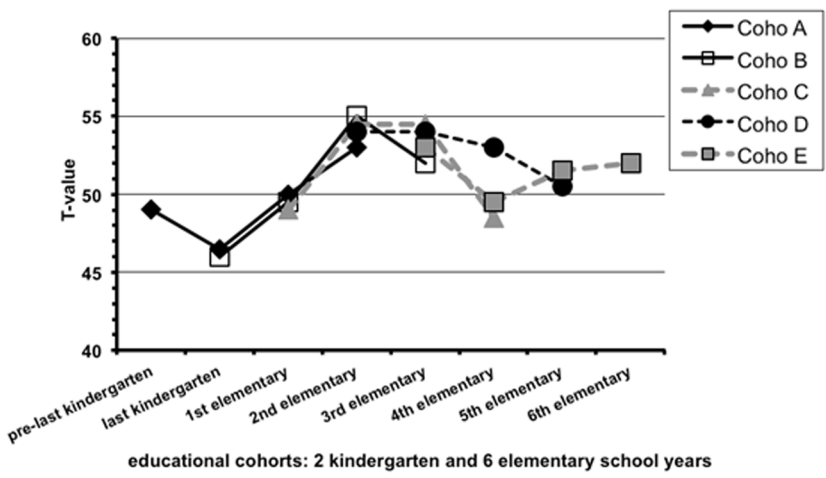


Figure 4. Cross-sectional results on dysthymic mood (DM) in the Luxembourg sample.

Short Discussion of Study II: Luxembourg

Just as in the German sample, longitudinal and cross-sectional data of the Luxembourg sample are in agreement for the development of subjective well-being in childhood. In contrast to the results of the German study, the self-esteem of Luxembourg children decreases and their dysthymic mood increases immediately after elementary school enrollment and remains at negative levels up to the 3rd elementary grade level. This finding points at an immediate, but three-year lasting “transition shock” in Luxembourg children. This is an unexpected result, because

most studies on transition effects in school environments are short lived (i.e., up to one school year) as in the German Study described above. With reference to the model of stage-environment fit and mismatch for school transition of Eccles, Midgley, et al. (1993) it is hypothesized that the difference between a more supportive, less controlling kindergarten education (matching with kindergarteners' needs and developmental stage) and a less supportive, more controlling elementary school education (mismatching with elementary students' needs and developmental stage up to the 3rd grade level) is very large in Luxembourg (e.g., larger than in the German educational system; see above). At the 4th elementary grade level the negative transition effect on subjective well-being attenuates, which may be explained either by students' adaptation (developmental) processes or by changes in the educational behavior of the elementary teachers between the 3rd and the 4th grade level (which is rather implausible). However, there are some longitudinal data that show that this attenuation effect does not remain at the 5th and 6th elementary grade level: At the 6th grade level there are decreases in self-esteem, and at the 5th and the 6th elementary grade level increases in dysthymic mood are found once again, which may be related to the anticipation of educational placement for secondary education at the end of the 6th elementary grade level. Positional stability of both indicators of subjective well-being is low, pointing at intraindividual differences in the developmental processes. With reference to the lack of hints on retest effects and dropout biases, cross-sectional and longitudinal data are sound, but show clear weaknesses in their reliability. Cronbach's alpha of both scales implemented as indicators for well-being are rather low in the multilingual tested complete Luxembourg sample and barely sufficient for statistical analyses at the group level.

General Discussion

The cross-sequential developmental results presented confirm the hypothesis of significant effects of educational transitions on the subjective well-being of elementary school students. This shows that children's adaptations to such normative critical life events do not occur continuously and without problems in general stages, for example, of (1) orientation and information acquirement, (2) striving for autonomy and assertiveness, and (3) integration (Stewart et al., 1982). To a greater degree and on average, these adaptive processes are connected to significant changes in self-esteem and dysthymic mood, which emerge in the context of the specific educational transition points within a given national school system.

While results point to the fact that Luxembourg children experience an immediate and an at least three-year lasting transition shock after enrollment to elementary school in their self-esteem and dysthymic mood as well, there is a more gentle transition from kindergarten to elementary school and no immediate transition shock after school enrollment in German children. In the German sample, significant negative changes in the two indicator variables of subjective well-being occur, however, slightly at the 3rd elementary grade level and very markedly at the 4th grade level. This may be interpreted as a delayed school enrollment effect, which is—however—hardly probable and theoretically implausible because emotional responses to life events rarely occur delayed after more than one or two years. Instead, the hypothesis is offered that this impairment of subjective well-being is related to the *anticipation of the upcoming educational transition* by children, their parents, and their teachers. This upcoming educational transition concerns educational placement into secondary educational tracks with serious consequences for the educational and future occupational options of the children at the end of the 4th elementary grade level. This early educational placement is a special feature of the German educational system, and has recently become a topic of political and public discussion with no consensus having been reached yet. Our findings concerning negative effects of the anticipation of upcoming educational transitions are new, but they correspond very well to theories and findings on the impact of critical life events, which must not be individually experienced, but can be

anticipated without subjective possibilities of effective coping too (e.g., Lazarus & Folkman, 1984). This is beyond the results and hypotheses of Eccles, Midgley, et al. (1993; Midgley et al., 1989b) on the effects during and after school transition (i.e., experienced critical life event). Nevertheless, their hypothesis of the impact of stage-environment fit versus mismatch remains suitable, because 3rd and 4th graders are confronted with a more controlling, achievement-oriented and—perhaps of capital importance—much more competitive and selective educational environment in home and in school. This results from parents' and teachers' anticipations of the upcoming educational transition concerning selective educational placement into secondary educational tracks with serious consequences for the children at the end of the 4th elementary grade level. In consequence, the educational environment changes and mismatches the needs and developmental stage of the children.

The Luxembourg educational system implements an educational placement for secondary education later, that is, at the end of the 6th elementary school grade. This is in accordance with the finding that in the Luxembourg sample—quite different from the German sample—recoveries of self-esteem and (dysthymic) mood are observed at the 4th and 5th elementary grade level. However, empirical evidence from the longitudinal data indicates that at the 6th grade level, self-esteem decreases markedly and dysthymic mood increases somewhat once again. With reference to the results on similar phenomena in the German sample before educational placement for secondary education at the 4th elementary grade level, this may be an effect of the upcoming educational placement for secondary education after the 6th grade level in Luxembourg.

At first glance, these results are convincing, particularly because the high standards of developmental psychology research are assured (i.e., cross-sequential design and control of retest effects in repeated measurements) and because a quasi-experimental approach was implemented that enabled the investigation of the given reality of two different national educational administration systems in neighboring yet distinct European regions. However, there are—at least—three limitations with reference to methodological problems of interpretation of the results presented.

Firstly, it must be noted that the quasi-experimental design was feasible only indirectly. This was necessary because of differences in test administration in a multilingual (Luxembourg) *versus* monolingual (Germany) society, nation, and educational system. Thus, the quasi-experimental approach resulted in convincing descriptive empirical confirmations of declines in subjective well-being after and before anticipated educational transitions which are strongly connected to specifics of the national educational administration systems studied here.

Thus, secondly, the exploratory power of the results remains low, because multilingual test administration in the Luxembourg sample and monolingual testing in the German sample required separate data analyses including within-sample test score standardizations. This excluded the possibility of direct statistical tests of the described developmental differences between Luxembourg and German kindergarten and school children.

Thirdly, difficult to handle is the low reliability of the scores on self-esteem and dysthymic mood deduced from the semi-structured interviews in the multilingual tested complete Luxembourg sample. Internal consistency coefficients (Cronbach's alpha) are good in the German sample and in the Luxembourg subsamples tested either in Lëtzeburgesch, German or French language, but low and only just sufficient for statistical analyses at the group level and far from being psychometrically feasible for psychological diagnostics in the complete Luxembourg sample. This is attributed to the unavoidable heterogeneous procedure of multilingual data acquisition in Luxembourg in contrast to Germany, where all children were interviewed in the German language. However, the low reliability of the scales

measuring the two indicators of subjective well-being must be kept in mind because measurement error is larger and the confidence intervals of the scores are larger as well.

On the other hand, the measurement of self-esteem and dysthymic mood in kindergarten and elementary school students by means of semi-structured interviewing succeeded at least in the monolingual (German) administration as well as in the Luxembourg subsamples tested either in Lëtzeburgisch, German or French language. Such semi-structured interview techniques are in line with Piaget's (1963, 1965, 1970) explorative diagnostic procedures in the research domains of cognitive development and the development of moral judgment in childhood, which are labeled as "clinical" experiments and interviews by Piaget himself. The results of the German and some results of the Luxembourg study confirm the feasibility and sufficient psychometric quality of the semi-structured interview on self-esteem and dysthymic mood, which certainly cost more time and resources than questionnaire data obtained in older children, their parents, and/or teachers. Semi-structured interviewing requires individual administration with a duration of approximately 15-25 minutes per child. Advantages concern the social, communicative aspects of data gathering (albeit with the danger of subjective biases), the explicit transformation of Q-data to ("clinical", diagnostic) L'-data (Cattell, 1965; Piaget, 1965, 1970), and—last, but surely not the least—the possibility to obtain data on indicators of subjective well-being in younger children. Younger children, lacking the skills of reading and writing, are—up to now—rather rarely included in research on well-being and positive development, which focus mainly on older childhood, adolescence, and adulthood up to old age (e.g., Furlong, Gilman, & Huebner, 2009; Peterson & Seligman, 2004; Seligman, 2002; WHO, 1986). The youngsters should be not forgotten because subjective well-being and mental health are significant determinants of freedom of action, acting out of curiosity, exploration, and learning, willingness for action, and risk taking, as well as self-confidence, attachment to significant others, and self-actualization across the entire life course.

Summarizing, the message of practical relevance of the effects found is (1) to regularly screen self-esteem and dysthymic mood of children in the context of their educational transitions by school psychologists and health professionals, (2) to consider and implement this not only in the context of experienced critical life events during and after educational transition, but in the context of their anticipation as well, (3) to observe and evaluate transitions between different schools and within schools in the context of their stage-environment fit or mismatch, respectively, and (4) to inform teachers, parents, educational administration and educational policy on all occasions about educational "transition shocks" with reference to the specifics of the national school and educational system. Furthermore, it should be routine to take self-esteem and dysthymic mood of children into account in child diagnostics as well as in child, parent, and teacher counseling, especially in the case of underachievers.

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Competing Interests

The author has declared that no competing interests exist.

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