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Quantitative and qualitative research approaches to assess student well-being

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Abstract

Although there is dissimiliarity in theoretical research approaches to subjective well-being and to assessments of well-being, there is agreement regarding the value of well-being, especially among student populations. In the highly structured, achievement-oriented, non-optimal context of a classroom, individual well-being is a necessary pre-condition for learning. Among student populations well-being should not be construed as an achievement enhancer; but, rather, recognized and measured as an educational value of its own. However, it is necessary for the positive bias towards learning at least in highly structured, achievement-orientated, non-optional learning contexts like school [cf. Hascher, T. (2004). *Wohlbefinden in der Schule*. Münster: Waxmann]. How can it be measured?

Since different research approaches lead to a variety of instruments, the following paper will focus on two ways of assessing well-being in school: a questionnaire on student well-being ($N = 2014$)[1] and a semi-structured daily diary about relevant emotional situations in school ($N = 58$, period 3×2 weeks). Both methods are introduced and their methodological quality is discussed in terms of reliability, validity and in terms of their usefulness for improving school practice. Furthermore, the research potential of combining quantitative and qualitative data on students' well-being is addressed.

The role of subjective well-being in human existence is crucial: subjective well-being is an individual's cognitive and affective evaluation of his/her life and, therefore, an indicator of quality of life, for a successful mastery of everyday challenges and subjective goals, and for the ability to enjoy daily pleasures (see Becker, 1994; Diener & Lucas, 2000 for an overview). Despite several years of intense research, there continues to be heterogeneity of theoretical approaches to subjective well-being (cf. Diener, 1984; Diener & Lucas, 2000; Mayring, 1991a; Ryan & Deci, 2001; Veenhoven, 1991). Accordingly, research has produced a respectable number of well-being instruments. Diener (1994) and Mayring (1991b) have summarized at least 60 scales, questionnaires, schedules, indexes, diaries, interviews, lists, tests, surveys, inventories, and coding systems. Although the number of coding systems is still growing, Diener and Biswas-Diener (2000) and Diener and Lucas (2000) continue to point out the need for theoretical and methodological development in future well-being research. This is of special importance for educational research

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for two reasons: (1) there is little differentiated knowledge about student well-being; (2) with the exception of the model of Konu and Rimelä (2002; Konu & Lintonen, 2005, 2006) no instruments currently exist for assessing well-being in school.

In the present study we analysed two different forms of well-being measurement in order to shed light on the importance of well-being in educational settings (Hascher, 2003, 2007). As the empirical focus on well-being in school is quite new, our guiding framework came from research on general well-being. While keeping in mind that there are limitations in transferring concepts and results from general, usually adults' well-being research to a domain-specific form of well-being in children and adolescents, this general research tradition, nevertheless, offers precious theoretical and methodological implications for well-being in school.

1. A brief introduction to well-being research

Bradburn (1969) gave an important impetus to well-being research when he defined subjective well-being as being represented by the relationship between positive and negative affect. He asked people how they felt, and used their answers to develop the ''Affect-Balance-Scale'' (see also Costa & McCrae, 1980). A relationship in favor of positive emotions indicates positive well-being, while a dominance of negative emotions reflects low well-being. Still today some instruments assess well-being by focusing on the balance of positive and negative affect (see for example the PANAS-Scale from Watson, Clark, & Tellegen, 1988). Although the idea of the dominance of positive evaluation remains essential to the definition of well-being, the assessment of well-being via a balance of reported affects is associated with several limitations. (1) It offers insight only into the actual affective state which can change very quickly; thus, a perspective on well-being with only low reliability. (2) It ignores the situational embeddedness of emotional experiences and the causes of the affects which may lead to reduced validity. (3) It reduces well-being to the experience of affective states, neglecting the concern that well-being is a far more complex phenomenon and cannot be assessed through the relationship of situationally based affective experiences only (Ryff & Keyes, 1995).

Over the past 20 years various domains of psychology have shown an emerging interest in subjective well-being. There are different approaches to subjective well-being but they all agree that well-being goes far beyond superficial feelings of happiness or fun. Rather, most researchers agree that well-being is a complex phenomenon consisting of cognitive as well as emotional dimensions and that negative and positive aspects have to be reconsidered even if they assessed well-being in a more simply structured way. As Grob et al. (1991), Grob, Wearing, Little, Wanner, and Euronet (1996), Mayring (1991a) and Ryff and Keyes (1995) have pointed out, well-being needs to be defined as a psychological concept consisting of various dimensions. A person's evaluations and feelings have to be taken equally into account. Thus, there is growing agreement that subjective well-being is multi-faceted. A still unanswered or at least debated question, however, is which aspects have to be integrated into the concept of well-being.

Another important question in well-being research is how certain aspects of life and personality contribute to a person's well-being. Research so far has produced a respectable quantity of findings. Predictors of well-being can be found in every life domain—a fact that complicates a meta-analysis of empirical well-being research. Nevertheless, three different main approaches to the development of subjective well-being can be identified (see also Diener & Lucas, 2000): situational life-circumstances (e.g., Diener, 2000), personality factors (see also Schmutte & Ryff, 1997, for a critical review), and the subjective interpretation and the cognitive evaluation of life-events (Campbell, 1976). One problem emerging from most of the existing studies on the predictors of well-being is that although they accept the multi-dimensionality of well-being at the same time they tend to ignore it. As a consequence, no single factor can be expected to influence all facets of well-being. Rather, the separate yet interrelated dimensions of well-being need to be explained differently.

2. Well-being in school

Although student well-being has been an important issue in educational discussion for many years and, although it is often mentioned, little research has been done in this area. Five reasons can be found for this situation: (1) psychological well-being research so far has not been specifically interested in the well-being of students (for an exception see a study by Vittersø on students in Norway, 1998); (2) psychological research on the well-being of children and adolescents so far has focused on general well-being (e.g., Grob et al., 1996); (3) health education research has just started to address students' subjective well-being beyond physical health explicitly (e.g., Konu,

Lintonen, & Rimpelä, 2002); (4) educational research has used the term ''well-being'' primarily as a superordinate term including a variety of perspectives and usually as an indicator of most of things in school going well. Thus, well-being has not been defined precisely and addressed directly but has been inferred from positive outcomes in the school context or from positive student behavior. For example, well-being in school was

- equated with the positive social climate in classroom or schools (e.g., Peetsma, Wagenaar, & de Kat, 2001; Schultz, Glass, & Kamholtz, 1987);
- seen as co-occurring or inherent to intrinsic motivation resulting from positive emotions (e.g., Csikszentmihalyi, 1990);
- interpreted when negative emotions towards school were weak (Gruehn, 2000);
- generalized from students' attitudes towards specific subjects in school (Helmke, 1993);
- defined as a close relatedness to school (Fend, 1997).

(5) Although educational research has increasingly focused on the impact of emotions (e.g., Efklides & Petkaki, 2005; Efklides & Volet, 2005; Gläser-Zikuda, 2001; Mayring & von Rhöneck, 2003; Pekrun, Goetz, Titz, & Perry, 2002), the experience of emotions has not been theoretically associated with the concepts and results of well-being research.

Well-being in school is comparable to general well-being, a specific quality of subjective evaluation and experience. As such, it consists of several dimensions and cannot be reduced to the existence or absence of a single psychological phenomenon. Moreover, well-being in school can be defined as an indicator of a learning environment which enables students to move towards their academic and social goals and for a qualitatively good school life. Although it may not directly foster school achievement, it serves as a positive bias for learning in school (cf. Hascher, 2003, 2007). In our approach, well-being in school has been defined as follows:

> Students' well-being in school is an emotional experience characterized by the dominance of positive feelings and cognitions towards school, persons in school and the school context in comparison to negative feelings and cognitions towards school life. Well-being in school represents subjective, emotional and cognitive evaluations of school reality and can be seen as a misbalance of positive and negative aspects in favor of positive aspects. (Hascher, 2003, p. 129)

3. Conclusion

The use of a general well-being instrument to assess student well-being in school might be argued. Although it can be supposed that school contributes to the general well-being of children and adolescents and vice versa, subjective well-being is context-sensitive and, therefore, the specific situation in school needs to be taken into account. Moreover, it can be supposed that general and context-specific well-being are influenced by different factors (Oishi & Diener, 2001). Accordingly, we developed two forms of well-being instruments for students: a questionnaire on subjective long-term well-being in school and a semi-structured diary for the emotions which are currently experienced in school. Both instruments were expected to give a differentiated insight into student well-being in school. Because the diary-study was conducted with a sub-sample of the questionnaire study, the potential of a mixed method approach could be considered.

4. Methods

4.1. The questionnaire on subjective well-being in school (SWBS)

Instruments of general well-being served as a guideline and were a source of content for the students' questionnaire. According to the dimensional concepts of general well-being (Grob et al., 1991; Mayring, 1991a, 1991b; Ryff & Keyes, 1995) we first assumed the multi-dimensionality of students' well-being. Second, regarding the specific characteristics of school life, the dimensionality of general well-being was adapted to well-being in school. Based on the six dimensions of the ''Berner well-being questionnaire for adolescents'' (BFW, Grob et al., 1991) we developed a questionnaire for long-term well-being in school for the use in German speaking schools. The BFW consists of three

positive and three negative dimensions: *Positive attitude towards life* (eight items, six level Likert scale, from ''completely wrong'' to ''completely correct''), e.g., ''My future looks good'' or ''I enjoy life more than most of the people''; *Joy in life* (five items, four level Likert scale, from ''no'' to ''very frequent''), e.g., ''Did it occur in the past few weeks that you were pleased because you had achieved something'' or ''Did it occur in the past few weeks that you were pleased because other people liked you''; *Self -esteem* (five items, six level Likert scale, from ''completely wrong'' to ''completely correct''), e.g., ''I'm capable of doing things just as well as most other people'' or ''I feel just as valuable as others''; *Problems* (eight items, six level Likert scale, from ''no worries at all'' to ''a lot of worries''), e.g., ''Have you been worried in the past few weeks because of people with whom you have problems'' or ''Have you been worried in the past few weeks because of your relationships with friends''; *Somatic complaints and reactions* (eight items, four level Likert scale, from ''no'' to ''often''), e.g., ''Has it happened in the past few weeks that you have had a stomach ache'' or ''Has it happened in the past few weeks that you suffered from heart beating or heart pains''; *Depressive mood* (five items, six level Likert scale, from ''completely wrong'' to ''completely correct''), e.g., ''I don't feel like doing anything'' or ''I've lost interest in other people and don't concern myself with them''. In order to make high scores reflect a greater degree of well-being, the items on problems, somatic complaints and depressive mood were recoded for the calculation of the scale mean ($x' = 5-x$ or $x' = 7-x$).

Accordingly, six dimensions were defined for the SWBS. Each of the 39 items of the questionnaire on general well-being were translated into the school context: *Positive attitudes towards school* (eight items), e.g., ''I like to go to school'' or ''School makes sense to me''; *enjoyment in school* (five items), e.g., ''In the past few weeks have you been pleased because you had the feeling of doing relevant things in school?'' or ''In the past few weeks have you been pleased because of academic success?''; *Positive academic self-esteem* (five items), e.g., ''I don't have problems mastering the tasks in school'' or ''I am capable of doing things in school just as well as most other class-mates''; *Problems in school* (eight items), e.g., ''In the past few weeks have you been worried because of class-mates with whom you have problems?'' or ''Have you been worried in the past few weeks because of handling school reality?''; *Somatic complaints and reactions in school* (eight items), e.g., ''In the past few weeks have you had a stomach ache in school?'' or ''In the past few weeks have you suffered from chest pains in school''; *Depressive mood towards school* (five items), e.g., ''I don't feel like doing anything in school'' or ''School doesn't interest me''.

Study 1: 136 students of secondary I level (70 female and 69 male adolescents attending a secondary school in a Swiss city, two classrooms grade 8 advanced level, two classrooms grade 8 superior level, one classroom grade 9 superior level, mean-age 14.46; 95% students from Swiss families) were asked to respond to the BFW and the SWBS. The order of presentation was mixed. One half of the students first answered the BFW, the other first answered the SWBS. Additionally, students answered a six-items scale on school anxiety to test the validity of the well-being measures. Comparisons were drawn for the factor structure as well as for students' answers. The questionnaires were administered during regular school time. Teachers did not attend.

Exploratory factor analyses with varimax rotation confirmed a six-factor solution, which explained variance 53.6% (factor 1: 18.8%; factor 2: 11.7%; factor 3: 7.4%; factor 4: 5.8%; factor 5: 5.4%; factor 6: 4.5%). Table 1 shows the resulting item analyses for the BFW and the SWBS and the correlations between the scales. The differences in general well-being and well-being in school are presented in Fig. 1.

Except for one factor (joy in life and enjoyment in school) the inter-correlations are medium to high, confirming the deep structure of the instruments to be similar. The negative correlations with school anxiety give a first clue of the validity of the questionnaire. Item analyses proved the internal consistency to be acceptable. *t*-Tests for dependent samples proved four out of six comparisons to be significant (see Table 2): higher values for positive attitudes towards life in general in comparison to positive attitudes towards school and higher joy in life in comparison to enjoyment in school. Somatic complaints were found more often in life than in school. Problems, however, were reported more often in school than in life in general. No significant differences were found in terms of self-esteem and depressive mood.

Study 2: After the first study a few adjustments were made to optimize the well-being in school—scales before using the scales for a larger sample. Alterations included raising the Cronbach's α for the scales, changing some titles of the scales and deletion of single items. The questionnaire was then translated from German into Dutch and Czech and validated by bilingual speakers. In this second study which was integrated into a larger study 2014 adolescents from four European countries participated (e.g., Peetsma, Hascher, van der Veen, & Roede, 2005). Four samples were collected from urban settings (i.e. cities with a population of about 100,000) in Germany, the Czech Republic, The Netherlands, and German-speaking Switzerland. One additional sample was collected from a rural Swiss school. Table 2 lists the number of participants, categorized by age groups (age 12–13, 14, 15–17), gender, school level (basic,

Table 1
Inter-correlations between students' general well-being, their well-being in school, and school anxiety ($N = 139$, Swiss students)

General well-being	Well-being in school						
	Positive attitudes ($\alpha = .82$)	Enjoyment ($\alpha = .64$)	Self-esteem ($\alpha = .62$)	Problems ($\alpha = .76$)	Somatic complaints ($\alpha = .72$)	Depressive mood ($\alpha = .74$)	School anxiety ($\alpha = .61$)
Positive attitudes ($\alpha = .77$)	**.46 ($p < .01$)**	.35 ($p < .01$)	.38 ($p < .01$)	.03	.08	.42 ($p < .01$)	−.05
Joy ($\alpha = .63$)	.23 ($p < .01$)	**.46 ($p < .01$)**	.19	−.07	−.17	.27 ($p < .01$)	−.18
Self-esteem ($\alpha = .74$)	.29 ($p < .01$)	.13	**.47 ($p < .01$)**	.25 ($p < .01$)	.22 ($p < .01$)	.24 ($p < .01$)	−.20 ($p < .05$)
Problems ($\alpha = .76$)	.15	−.05	.25 ($p < .01$)	**.57 ($p < .01$)**	.40 ($p < .01$)	.16	−.40 ($p < .01$)
Somatic complaints ($\alpha = .77$)	.07	.02	.28 ($p < .01$)	.27 ($p < .01$)	**.56 ($p < .01$)**	.06	−.39 ($p < .01$)
Depressive mood ($\alpha = .71$)	.25 ($p < .01$)	.15	.28 ($p < .01$)	.17 ($p < .05$)	.14	**.34 ($p < .01$)**	−.02
School anxiety ($\alpha = .61$)	−.43 ($p < .01$)	−.05	.17 ($p < .05$)	−.53 ($p < .01$)	−.19 ($p < .05$)	.21 ($p < .05$)	–

Bold values signify the correlation of paired scales.

advanced, superior) and school grade. The mean age was 14.19 (S.D. = 1.03; $N = 2014$). All participating three or four schools per sample were selected by means of three criteria: secondary level of education; public school system (as opposed to alternative or private schools); regular urban schools with an maximum of 25% migrant pupils (Table 3).

As shown in Table 4, a six-factor solution was confirmed. In four of the five sub-samples the 34 items of the questionnaire were distributed as intended according to the six dimensions of well-being in school: *Positive attitudes and emotions towards school*; *Enjoyment in school*; *Positive academic self-concept*; *(Absence of) Physical complaints*


Today is Monday, ... (date)
We had ..... lessons today.

What happened today?

I'd like to report the following: .....

What did you think about / in this situation?
In this situation I thought: .....

Has a situation like this ever happened to you before?

never sometimes several times very often

How did you feel? Why did you feel this way?

because.....

How strong was this feeling?

very weak not strong middle very strong

How long did the feeling last?

very short not long middle very long

Have you ever felt like this before in school?

never sometimes several times very often

How did you react in this situation? What did you learn from this? Were there any consequences?

Fig. 1. Student emotion diary.

Table 2
Significant differences between general well-being (BFW) and well-being in school (WBS) ($N = 139$, Swiss students)

	Mean BFW (S.D.)	Mean WBS (S.D.)	t (d.f.)	p
Positive attitudes towards life–positive attitudes towards school	4.45 (.69)	4.12 (.70)	5.37 (137)	.000
Joy in life–enjoyment in school	3.76 (1.02)	3.58 (1.09)	2.00 (135)	.047
Self-esteem–positive academic self-concept	4.62 (.80)	4.54 (.66)	1.08 (136)	n.s.
No problems in life–no problems in school	4.70 (.89)	4.46 (.87)	3.48 (138)	.001
No somatic complaints–no somatic complaints in school	4.81 (.99)	5.07 (.83)	−3.63 (138)	.000
No depressive mood–no depressive mood in school	4.33 (.93)	4.25 (.90)	.95 (135)	n.s.

in school; (*Absence of*) *Social problems in school*; *(Absence of) School worries*. It should be noted that each of the three negative factors was recoded into ''Absence of School Worries'', ''Absence of Physical Complaints'', and ''Absence of Social Problems''. Generally, there was consistent agreement of factor-loading and item-distribution across the five different samples. The Czech data offered a five-factor solution as the items about school worries and about physical complaints could not be sharply separated from each other. Factor analyses and item analyses confirmed the six dimensions throughout all samples (most $\alpha > .70$; min = .65, max = .84). The inter-correlations between the six dimensions of students' well-being lie between $r = .00$ and .52 showing the highest correlations for school worries and physical complaints. Correlation analyses with test-anxiety (tested with the second Swiss sample only) showed significant negative correlations ($r = -.15 < x < r = -.44$; see Hascher, 2007). Nevertheless, further research is needed to prove the validity of the questionnaire.

Questionnaires on well-being as used in Studies 1 and 2 address a global evaluation of the school reality from students' perspective. Their advantages lie in the several aspects like the following: they represent students' general impressions of school; they can easily be administered even to a large sample; they can be used in various studies; the collected data are easy to analyse with statistical software and can be reported in a survey; they can be compared to other questionnaires on school evaluation. However, they do not represent the flexibility of emotional affairs or and the relationship of emotions and actual experiences. In order to gain a deeper insight into the individual variation of the affective potential of schooling we also developed an emotion diary.

4.2. Student emotion diary

Since the beginning of well-being research daily reports about affect serve as an indicator of individual well-being (Bradburn, 1969). The shortcomings of this method, however, lie in the lack of a contextual framing of the reported emotions. Instead, emotions are ''weighted'': the more positive emotions the better the well-being. This technique of counting emotions not only ignores the fact that arousal of emotions depends on situations. It also neglects that emotions can vary in intensity, frequency, and duration. In order to overcome these shortcomings in the current study, emotion diaries were used to integrate aspects of the context as well as aspects of the individual affective experience. As has been shown by research on test anxiety, diaries are useful in the assessment of emotions (e.g., Beidel, 1991; Beidel, Neal, & Lederer, 1991).

The diaries elicited in detail emotional experiences reported by students. Every emotional episode was described from the subject's perspective by the following components (see Fig. 1): (1) the diaries addressed the specific situation in which the emotion occurred and the students' evaluation of the situation (''What happened today?'', ''What did you think about/in this situation?'', ''Has a situation like this ever happened to you before?''); (2) the students specified the qualitative and quantitative characteristics of the emotion evoked by the situation (''How did you feel?'', ''How strong was this feeling?'', ''How long did the feeling last?'', ''Have you ever felt like this before in school?''); (3) the students referred explicitly to the causes and consequences of the emotions (''Why did you feel this way?'', ''How did you react in this situation? What did you learn from this? Were there any consequences?''). The predominance of open questioning allowed the students to answer in their own words. The reported emotions were rated by the students in terms of frequency (1 = never, 4 = very often), intensity (1 = very weak, 4 = very strong), and duration (1 = very short, 4 = very long lasting) on a four-point Likert scale. The diaries followed the event-sampling approach. Thus, the students filled out one diary sheet each day if an emotionally relevant situation had happened in school.

Study 3: 58 adolescents from nine classrooms of one school (a sub-sample from the questionnaire-study, 34 girls, 24 boys; grade 7–9; mean age 13.79; equally distributed among the three school levels basic, intermediate, advanced;

Table 3
Well-being questionnaire: number of participants per sample by gender, age, level, and grade ($N = 2014$)

	CH1 ($N = 394$)	CH2 ($N = 391$)	GER ($N = 364$)	NED ($N = 445$)	CZR ($N = 420$)
Gender					
Female	193	199	182	249	243
Male	201	192	182	196	177
Age					
<13	92	147	78	99	135
14	114	127	114	200	150
>15	184	114	172	140	125
Level					
Basic	118	191	116	151	147
Advanced	146	137	127	174	126
Superior	130	63	121	120	147
Grade					
7	158	129	124	178	134
8	126	137	124	178	156
9	110	125	116	89	130

Note: CH1: Switzerland, urban schools; CH2: Switzerland, rural school; GER: Germany; NED: The Netherlands; CZR: Czech Republic.

96% non-migrant students) completed daily diaries (Table 5). Over a period of 3 × 2 weeks students were asked daily to select and report on one subjective relevant emotional experience. Altogether, 1358 emotion episodes were described. The reported situations in the diaries were analysed by qualitative content analysis (e.g., Gläser-Zikuda, 2001) in terms of the quality of the emotions and the causes of emotions (see also Hascher, 2007). Two questions were addressed: (1) student level: How do individual students evaluate their school day? (2) Classroom level: how do students from one particular classroom evaluate their school days? (Table 6).

The results for student level demonstrated that for more than half of the sample (55%), negative emotions were predominant. 18% of the students reported a supremacy of positive emotions. 25% of the students reported a balance of negative and positive emotional episodes. A few students referred primarily to emotionally neutral situations, expressing their emotional distance to the reported episode. The students used a wide rage of words for the expression of their emotions. More specifically, 145 different negative and 58 different positive terms were mentioned. The students used general emotion terms like ''sad'', ''happy'', or ''afraid'', youth-culture-words like ''cool'', ''crazy'', or ''easy'', metaphoric descriptions like ''as in heaven'' or ''dark'', and idiosyncratic words like ''empty'' or ''second order''. The inter- and intra-individual variation of the reported causes of emotions was high, ranging from a predominance of situations during teaching and learning (e.g., situations of success and failure, feelings of competence in self and others, the quality of teaching, the characteristics of testing, processes of learning, interactions between students and teachers or between students, misbehavior of single students, etc.) to specific evaluations of the school as an institution (changing time-tables, special events, teacher attitudes towards school, school climate, schooling times, etc.) and, rather seldom mentioned, activities outside school (personal situation, social contacts with class-mates during leisure-time, sports activities). Although four to eight students from one classroom wrote daily diaries, they usually reported different emotion eliciting situations. Within the same school day one student reported about the German teacher's openness to the students' perspective, a second student about her good results in a German- and an English-test, a third student about the social unfairness of the Italian teacher, a fourth student about reading a long French text without mistakes, a fifth student about the difficulties in preparing a presentation in the French class, a sixth student about his best result in the English-text, a seventh student about a pleasant discussion about his general school achievement with the class-teacher, and an eighth student reported nothing. This result points to the strong subjective bias of emotional experience in school.

Classroom level results indicated that the 4–8 students from the same classroom described common topics besides their individual perspectives. The students from two classrooms commented negatively about the frequent changing of substitute teachers while the students from two other classrooms pointed out the achievement stress associated with selection processes in school. Students from another classroom complained repeatedly about disturbances and a low degree of discipline in the classroom while students from another classroom demonstrated common sense regarding

Table 4
Results of factor and item-analyses for the SWBS (% of explained variance; Cronbach's α)

Scale	Total sample ($N = 2014$)		Switzerland 1 ($N = 394$)		Switzerland 2 ($N = 391$)		Germany ($N = 364$)		Netherlands ($N = 445$)		Czech Republic ($N = 420$)	
	No. of items	Expl. var., int. cons.	No. of items	Expl. var., int. cons.	No. of items	Expl. var., int. cons.	No. of items	Expl. var., int. cons.	No. of items	Expl. var., int. cons.	No. of items	Expl. var., int. cons.
Positive attitudes	7	18.2%, $\alpha = .80$	7	20.7%, $\alpha = .78$	7	20.9%, $\alpha = .80$	7	16.1%, $\alpha = .82$	7	17.6%, $\alpha = .80$	6	15.8%, $\alpha = .81$
Enjoyment in school	5	3.6%, $\alpha = .67$	5	3.8%, $\alpha = .69$	5	4.1%, $\alpha = .67$	5	4.2%, $\alpha = .71$	5	3.7%, $\alpha = .72$	4	3.9%, $\alpha = .65$
Academic self-concept	5	6.4%, $\alpha = .79$	5	7.7%, $\alpha = .84$	5	7.5%, $\alpha = .82$	5	6.8%, $\alpha = .72$	5	7.5%, $\alpha = .83$	5	6.1%, $\alpha = .70$
No worries	5	4.4%, $\alpha = .72$	5	4.5%, $\alpha = .79$	5	4.6%, $\alpha = .73$	5	4.8%, $\alpha = .72$	5	4.5%, $\alpha = .71$	5	6.4%, $\alpha = .70$
No physical complaints	6	11.4%, $\alpha = .77$	6	10.3%, $\alpha = .78$	6	9.6%, $\alpha = .77$	6	12.2%, $\alpha = .78$	6	12.2%, $\alpha = .75$	6	13.2%, $\alpha = .77$
No social problems	5	5.9%, $\alpha = .79$	5	5.6%, $\alpha = .79$	5	6.1%, $\alpha = .79$	5	6.8%, $\alpha = .80$	5	5.6%, $\alpha = .77$	5	5.8%, $\alpha = .78$

Percentage of explained variance in total: total sample 49.9%; Switzerland 1 52.66%; Switzerland 2 52.77%; Germany 50.98%; The Netherlands 51.04%; The Czech Republic 49.12%.

Table 5
Significant inter-correlations of the well-being dimension for the five samples

Sample	Factors of well-being in school					
	PAS	JIS	PAC	NSW	NPC	NSP
Switzerland 1 ($N = 394$)						
Positive attitudes (PAS)	–					
Enjoyment in school (EIS)	**.39****	–				
Positive academic self-concept (PASC)	**.40****	**.31****	–			
No school worries (WIS)	**.20****	.05	**.44****	–		
No physical complaints (PCS)	**.21****	.02	**.34****	**.49****	–	
No social problems (SPS)	**.18****	.09	.10	**.31****	**.32****	–
Switzerland 2 ($N = 391$)						
Positive attitudes (PAS)	–	.				
Enjoyment in school (EIS)	**.34****	–				
Positive academic self-concept (PASC)	**.46****	**.40****	–			
No school worries (WIS)	**.19****	**.13****	**.46****	–		
No physical complaints (PCS)	**.21****	.10*	**.35****	**.43****	–	
No social problems (SPS)	**.22****	**.14****	.13*	**.26****	**.40****	–
Germany ($N = 364$)						
Positive attitudes (PAS)	–					
Enjoyment in school (EIS)	**.26****	–				
Positive academic self-concept (PASC)	**.38****	**.33****	–			
No school worries (WIS)	.09	.00	**.29****	–		
No physical complaints (PCS)	**.16****	−.05	**.17****	**.41****	–	
No social problems (SPS)	.03	−.07	.04	**.20****	**.36****	–
The Netherlands ($N = 445$)						
Positive attitudes (PAS)	–	.				
Enjoyment in school (EIS)	**.37****	–				
Positive academic self-concept (PASC)	**.32****	**.36****	–			
No school worries (WIS)	**.16****	−.05	**.36****	–		
No physical complaints (PCS)	**.22****	−.10*	.04	**.45****	–	
No social problems (SPS)	**.15****	.00	.12*	**.36****	**.41****	–
The Czech Republic ($N = 420$)						
Positive attitudes (PAS)	–	.				
Enjoyment in school (EIS)	**.37****	–				
Positive academic self-concept (PASC)	**.29****	**.27****	–			
No school worries (WIS)	.01	−.11*	**.30****	–		
No physical complaints (PCS)	−.01	**−.23****	**.18****	**.52****	–	
No social problems (SPS)	.03	−.01	**.19****	**.34****	**.40***	–

*$p \leq .05$, **$p \leq .01$.

problems with specific teachers. Students of one classroom questioned several times the relevance of school while the students of another classroom expressed concerns about their future. Finally, students from one classroom repeatedly mentioned the problems they faced integrating a blind student into the community.

4.3. The informative value of linking quantitative and qualitative research on well-being in school

Mayring (cf., 1991a, 1991b) pointed out early the importance of combining methods for well-being research. Being very critical of single-item-measures he suggested not only the use of scales but also the use of different instruments, for example questionnaires and diaries. The pros and cons of quantitative well-being research can be summarized as follows: questionnaires on well-being can be used with extensive samples, they can be easily adapted to various settings, and can be applied in cross-sectional and longitudinal studies. Limitations of questionnaires arise as soon as the subjective valence of well-being and the tremendous variety of (possible) emotion and cognition are taken into account. Knowing that a student generally feels well in school does not mean that he feels well at the moment. It is more helpful in identifying specific situations which make her/him feel good and bad in school. Such a deeper insight

Table 6
Emotion diaries: number of participants by gender, age, level, and grade ($N = 58$)

Gender	
Female	34
Male	22
Level	
Basic	18
Intermediate	18
Advanced	22
Grade	
7	18
8	21
9	19

might be possible through the use of diaries. Assuming a high degree of openness of the students towards the researcher, relevant and valid information about the school setting and its efficacy is possible. For example, diaries might contribute to a researcher's understanding of teacher behavior. On the other hand, diaries only represent students' perspectives. A second weakness of those diaries is that they include a large amount of complex information which has to be reduced to be understandable to the researcher. Thus, the results are influenced by the researchers' approach to qualitative data in so far as it guides not only the interpretations but also the categorization of students' answers (see also Gläser-Zikuda, 2001).

Following the suggestion of combining quantitative and qualitative methods, one question is of specific importance: how can the results and findings of quantitative and qualitative research be integrated? It seems that different methods are usually used one in addition to the other instead of being integrated. Therefore, two approaches to the combination of quantitative and qualitative research are suggested and illustrated by selected examples: (1) findings from quantitative research are better explained by findings from qualitative research; (2) findings from qualitative research can be validated and enriched by results from quantitative research.

4.3.1. Findings from quantitative research are better explained by findings of qualitative research

There are several factors associated with well-being in school. Teacher behavior is a relevant source of students' well-being, e.g., the quality of instruction, the care of teachers and their fairness towards the students (Hascher, 2004). The diaries offer many examples how these aspects impact everyday school life. Students very often pointed out the necessity for teachers to keep in mind students' perspectives. This is necessary not only in terms of understanding students' learning, e.g., including students' learning difficulties, students' mistakes, students' learning strategies, or realistically estimating the time students need for tasks, etc. but also implies a more social orientation as in being aware of adolescents' desires, taking students' peer relations into account, considering their individual interests and so on. For example, one student explained:

> ''For the German class we had to work in teams. We had to select a topic, prepare it as homework and present it the following week. As my parents are very strict with me and I'm not allowed to meet others during leisure time I would not have been able to meet with my classmates to prepare our presentation. When I mentioned the problem to my teacher he understood my situation and gave me and my partners extra time to work on our presentation during the regular lesson. I was really surprised because I hadn't expected so much understanding from my teacher. I was very happy because otherwise it would have been impossible for me to work with my classmates''.

Although most students might feel well in school (Hascher, 2007), there are always some students with a low level of well-being. In addition, there are school situations which can be detrimental to well-being. In order to find out more about these situations with a view to designing a positive learning environment, a closer look at students' individual perspectives and at their daily school experiences via diaries might be useful. Which context factors might reduce student well-being, which might enhance it? What are the causes of their feelings of anger, sadness, frustration or aggression, what are the reasons for pride, joy or contentment in school? What are good strategies to cope with negative experiences and how can positive emotions be used productively to enhance the learning process? For

Table 7
Differences between the well-being of a rejected student and his classmates ($N = 24$, Swiss students; means; min = 1, max = 6)

	Classroom ($N = 23$)	Rejected student
Positive attitudes towards school (PAS)	4.15 (.92)	4.57
Enjoyment in school (EIS)	3.18 (.86)	2.00
Positive academic self-concept (PASC)	3.97 (1.05)	3.40
No worries in school (WIS)	4.20 (.95)	4.80
No physical complaints in school (PCS)	5.46 (.65)	5.83
No social problems in school (SPS)	5.29 (.69)	4.60

example, students occasionally reported the negative impact of a boring learning environment which hinders feelings of competence and autonomy:

> ''Today it was boring like nearly everyday. I never feel well in school. Basically at home I can learn much better''.

One hundred and eight emotions were experienced with high intensity, frequency and duration. 34% of those emotions were explicitly directed to teacher behavior, additional 16% to the lessons or the subject with in indirect link to teachers. Qualitative content analysis of the episodes mirrors the importance of taking an individual's basic needs (Ryan & Deci, 2000) into consideration to design a setting both for well-being and learning. Feelings of competence, social relatedness, and autonomy categorized two third of the situations, being accepted by teachers and fairness by teachers explained another 16%.

4.3.2. Findings from qualitative research can be validated and enriched by results from quantitative research

Well-being in school was defined by six dimensions: almost all of the 58 students who wrote daily diaries reported on positive or negative peer interactions in the classroom. Feeling integrated, working cooperatively, having an argument with others, making friends, missing support by classmates and so on are examples of the social dimension of everyday experiences. This result illustrates the importance of social aspects for student well-being. Reading emotion diaries gives an impression of how an individual manages her/his school day. One student, for example, reported repeated episodes of being bullied. His dairy entry read:

> ''Some of the girls took my pens and my shoulder bag and threw them through the classroom. This has already happened several times to me. I thought, ''these girls are assholes''! I felt revenge and thought about fighting with them. But I did nothing. I'm disappointed that the teachers never intervene''.

From his diary, however, it remains unclear whether the problem was exaggerated or objectively reported. It also remains unanswered whether the class temporarily has problems with the single student or if bullying is a long-term problem in this classroom. Analyzing additional quantitative data, e.g., using the well-being questionnaire, yields answers to this question by taking also the classmates' perspectives into account (Hascher, 2003; Hascher & Baillod, 2004). Thus, it can be assumed that his ratings of the social scale of the well-being questionnaire will reflect his role as an outsider. A closer look onto the student's and his classmates' well-being shows that he evaluates the social and emotional dimensions of well-being lower than his classmates (see Table 7). This can be confirmed for 'no social problems', 'enjoyment in school', and even for the 'academic self-concept'. The dimensions of well-being which address cognitive aspects and achievement are evaluated better than the classroom average: 'positive attitude towards school', 'no worries about school', and 'no physical complaints'.

5. Discussion

School can be characterized by a mainly guided and only to a limited extent self-directed form of learning and achievement on one hand, and by educationally supervised forms of social interactions between students and between students and adults on the other hand. This context requires a specific definition and assessment of student well-being. When well-being has been included in previous studies, however, it frequently has tended to be included as co-occurring with other psychological phenomena like motivation, treated identically to general well-being or included

with only a weak theoretical background. Therefore, there is a lack of theoretical and methodological development on student well-being.

We developed a multi-faceted, long-term well-being in school questionnaire and an emotion diary for adolescent students to report daily on their emotions in school. As was shown, both instruments, used solely or in combination, proved to be useful in terms of the assessment of well-being in school. It should be mentioned, however, that they represent two different perspectives on emotional experiences in school: the questionnaire addresses a more general, habitual expression of emotional and cognitive aspects while the diaries focus situations which evoke specific emotions. These differences might explain why some students feel well in school and at the same time report more negative than positive emotions in their diaries. Another possible explanation is offered by the theories of emotion-regulation (e.g., Larsen & Prizmic, 2004): if an individual is endowed with the competence to cope with negative emotions, situation-specific negative emotions are not seriously harmful for well-being.

The questionnaire on student well-being was embedded in the tradition of general well-being research and, thus, allows the analyses of students' evaluation of their school-life. It also enables the assessment of well-being over a variety of samples (Hascher, 2007). High levels of student well-being indicate a learning environment which supports students in their individual cognitive, emotional, and social development. Low well-being in school points to a student–school interaction which is harmful for children and adolescents.

The well-being questionnaire consists of six dimensions proved by general well-being research, to be relevant for individual well-being. The good reliability confirms these dimensions also to be relevant for well-being in school. Based on a multi-faceted approach, the questionnaire necessitates differentiated analyses of student well-being, e.g., in terms of its causes and predictors. Future research needs to show *how* they are differentiated (Hascher, 2004).

Student emotion diaries are a useful qualitative approach to explore student emotions and well-being. As such, they offer a precise view on an individual's perspective and they enable a context-sensitive understanding of emotions in school. The integration of the sources and causes of student emotions is important, not only because it illustrates how different feelings arise but also improves our understanding of the conditions necessary for well-being. Moreover, it indicates how the learning environment can best be designed while taking the dynamic role of emotion in learning into account. As a consequence, more work can be done to explain learning settings not only from a cognitive or social but also from an emotional point of view. Diaries, however, have a strong idiosyncratic perspective and every emotional episode requires interpretation. Another critical factor is students' motivation and ability to write and elaborate on their feeling. Using an event-sampling method (in comparison to time-sampling method) may prevent the overestimation of the emotional impact of school life as it focuses on emotion episodes which are important from students' perspectives. It should be noted however that event sampling may miss important emotions, especially emotions which are suppressed, not easily reflected on and reported by the individual. As Efklides and Petkaki (2005) demonstrated, positive affect has an important influence on learning and positive emotions enhance learning differently at different phases of the learning process. Consequently, Sansone and Thoman (2005) pointed out that the role of emotion in learning is dynamic and can fluently change during the process of learning. It can be assumed that well-being in school, defined as a longer-term, emotional and cognitive evaluation of school reality, serves as a positive base-line not only for learning to take place but also for the development of situation-specific feelings and moods. Alternately, situation-specific emotions evoked by daily interactions with school demands will affect well-being in school. It is still unknown how daily emotions and well-being interact. It is a task for future research to explain the interplay of well-being and student emotional state in school.

References

Becker, P. (1994). Theoretische grundlagen. In A. Abele & P. Becker (Eds.), *Wohlbefinden* (pp. 13–49). Weinheim: Juventa.

Beidel, D. C. (1991). Social phobia and overanxious disorder in school-age children. *Journal of the Academy of Child and Adolescent Psychiatry, 30*, 545–552.

Beidel, D. C., Neal, A. M., & Lederer, A. S. (1991). The feasibility and validity of a daily diary for the assessment of anxiety in children. *Behavior Therapy, 22*, 505–517.

Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago: Aldine.

Campbell, A. (1976). Subjective measures of well-being. *American Psychologist, 31*, 117–124.

Costa, P. T., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology, 38*(4), 668–678.

Csikszentmihalyi, M. (1990). *Flow—the psychology of optimal experience*. New York: Harper & Row.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542–575.
Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research, 31*, 103–157.
Diener, E. (2000). Subjective well-being. The science of happiness and a proposal for a national index. *American Psychologist, 55*(1), 34–43.
Diener, E., & Biswas-Diener, R. (2000). *New directions in subjective well-being research: The cutting edge*. Champaign, IL: University of Illinois, Department of Psychology.
Diener, E., & Lucas, R. E. (2000). Subjective emotional well-being. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 325–337). New York: Guilford Press.
Efklides, A., & Petkaki, C. (2005). Effects of mood on students' metacognitive experiences. *Learning and Instruction, 15*(5), 415–431.
Efklides, A., & Volet, S. (2005). Emotional experiences during learning: Multiple, situated and dynamic. *Learning and Instruction, 15*(5), 377–380.
Fend, H. (1997). *Der Umgang mit Schule in der Adoleszenz. (Band IV)*. Bern: Huber.
Gläser-Zikuda, M. (2001). Emotions and learning strategies at school—opportunities of qualitative content analysis. In G. L. Huber (Ed.), *Qualitative research in psychology*. Schwangau: Ingeborg Huber Verlag.
Grob, A., Lüthi, R., Kaiser, F. G., Flammer, A., Mackinnon, A., & Waering, A. J. (1991). Berner Fragebogen zum Wohlbefinden Jugendlicher (BFW). *Diagnostica, 37*(1), 66–75.
Grob, A., Wearing, A. J., Little, T. D., Wanner, B., & Euronet, (1996). Adolescents' well-being and perceived control across 14 sociocultural contexts. *Journal of Personality and Social Psychology, 71*(4), 785–795.
Gruehn, S. (2000). *Unterricht und schulisches Lernen*. Münster: Waxmann.
Hascher, T. (2003). Well-being in school—why students need social support. In P. Mayring & C. von Rhöneck (Eds.), *Learning emotions—the influence of affective factors on classroom learning* (pp. 127–142). Bern u.a Lang.
Hascher, T. (2004). *Wohlbefinden in der Schule*. Münster: Waxmann.
Hascher, T. (2007). Exploring students' well-being by taking a variety of looks into the classroom. *Hellenic Journal of Psychology, 4*, 331–349.
Hascher, T., & Baillod, J. (2004). Soziale Integration in der Schulklasse als Prädiktor für Wohlbefinden. In Hascher, T. (Ed.). *Schule positiv erleben. Erkenntnisse und Ergebnisse zum Wohlbefinden von Schülerinnen und Schülern* (133–158). Bern u.a Haupt.
Helmke, A. (1993). Die Entwicklung der Lernfreude vom Kindergarten bis zur 5. *Klassenstufe. Zeitschrift für Pädagogische Psychologie, 7*, 77–86.
Konu, A. I., & Lintonen, T. P. (2005). Theory-based survey analysis of well-being in secondary schools in Finland. *Health Promotion International, 17*, 79–87.
Konu, A. I., & Lintonen, T. P. (2006). School well-being in grades 4–12. *Health Education Research, 21*(5), 633–642.
Konu, A. I., Lintonen, T. P., & Rimpelä, M. K. (2002). Factors associated with schoolchildren's general subjective well-being. *Health Education Research, 17*(2), 155–165.
Konu, A. I., & Rimpelä, M. K. (2002). Well-being in schools: A conceptual model. *Health Promotion International, 17*, 79–87.
Larsen, R., & Prizmic, Z. (2004). Affect regulation. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation* (pp. 40–61). New York/ London: The Guilford Press.
Mayring, P. (1991a). *Psychologie des Glücks*. Stuttgart: Kohlhammer.
Mayring, P. (1991b). Die Erfassung subjektiven Wohlbefindens. In A. Abele & P. Becker (Eds.), *Wohlbefinden* (pp. 51–70). Weinheim: Juventa.
Mayring, P., & von Rhöneck, Ch. (2003). *The influence of affective factors on classroom learning*. Frankfurt am Main: Lang.
Oishi, S., & Diener, E. (2001). Re-examining the general positivity model of subjective well-being: The discrepancy between specific and global domain satisfaction. *Journal of Personality, 69*(4), 641–666.
Peetsma, T., Hascher, T., van der Veen, I., & Roede, E. (2005). Relations between adolescents' self-evaluations, time perspectives, motivation for school and their achievement in different countries and at different ages. *European Journal of Psychology of Education, XX*(3), 209–225.
Peetsma, T. T. D., Wagenaar, E., & de Kat, E. (2001). School motivation, future time perspective and well-being of migrant and indigenous high school students in segregated and integrated schools in the Netherlands and the role of ethnic self-description. In J. K. Koppen & S. Hedenigg (Eds.), *Social cohesion and inclusion in European education—in historical, empirical and comperative perspective*. Münster/New York: Waxmann.
Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Positive emotion in education. In E. Frydenberg (Ed.), *Beyond coping: Meeting goals, visions, and challenges* (pp. 149–173). London: Oxford Press.
Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the faciliation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and endaimonic well-being. *Annual Review Psychology, 52*, 141–166.
Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727.
Sansone, C., & Thoman, D. B. (2005). Does what we feel affect what we learn? Some answers and new questions. *Learning and Instruction, 15*(5), 507–515.
Schmutte, P. S., & Ryff, C. D. (1997). Personality and well-being: Reexamining methods and meanings. *Journal of Personality and Social Psychology, 73*(3), 549–559.
Schultz, E. W., Glass, R. M., & Kamholtz, J. D. (1987). School climate: Psychological health and well-being in school. *Journal of School Health, 57*(10), 432–436.
Veenhoven, R. (1991). Questions on happiness: Classical topics, modern answers, blind spots. In F. Strack, I. Argyle, & N. Schwarz (Eds.), *Subjective well-being* (pp. 7–26). Oxford: Pergamon Press.
Vittersø, J. (1998). *Happy people and wonderful experiences*. Oslo: University of Oslo, Department of Psychology.
Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063–1070.