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What Makes School Hard for Students with Internalizing Problems? – Students' Insights on Emotional Challenges at School

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Summary

A number of studies have found evidence for associations of internalizing problems (IP) with negative emotional experiences at school. However, most studies on the subject have neglected to investigate explanations for these associations. Satisfaction of psychological needs of students (i.e., autonomy, competence, and relatedness) provides a theoretical framework to further explain these associations, as need satisfaction has been shown to affect students' emotional wellbeing. The aims of the study at hand are to investigate students' explanations for their own emotional experiences within the school context, and whether they correspond with aforementioned psychological needs, with a particular focus on students with high IP. To achieve these aims, $n = 32$ structured interviews were conducted with fifth and sixth graders. Students were screened for IP and students with either very high or very low IP were interviewed. Students' explanations for their own emotional experiences were categorized using qualitative content analysis based on aforementioned psychological needs. Results show that children with high IP focused on negative rather than positive situations within school. Differences between children with high and low IP were particularly pronounced in the relatedness category. Children in the high IP group mentioned peer-related needs more often and showed a lower percentage of positive segments relatedness needs. The specific topics within individual needs provided by this study can be used to enhance and further differentiate need-supportive teaching models, particularly for children with high IP.

Keywords: Internalizing Problems, Psychological Needs, Emotions, School, Students

Was erschwerte Kindern mit internalisierenden Problemen den Schulalltag? – Emotionale Schwierigkeiten aus der Schüler:innenperspektive

Zusammenfassung

In verschiedenen Studien konnte gezeigt werden, dass internalisierende Probleme (IP) bei Schulkindern mit vermehrten negativen emotionalen Erlebnissen zusammenhängen. Die Wirkmechanismen, die zu diesen Zusammenhängen führen, wurden dabei bisher nur am Rande behandelt. Die Befriedigung der psychologischen Grundbedürfnisse (Autonomie,

Kompetenz, Eingebundenheit) bietet einen theoretischen Rahmen, der geeignet erscheint, diese Zusammenhänge genauer zu erklären. Das Ziel der vorliegenden Studie ist, das emotionale Erleben von Schulkindern und ihre eigenen Erklärungen für positive und negative Emotionen im Rahmen der psychologischen Grundbedürfnisse genauer zu betrachten. Dabei sollen speziell Kinder mit hohem IP in den Fokus genommen werden. Daher wurden im Rahmen der vorliegenden Studie Interviews mit $n = 32$ Kindern aus fünften und sechsten Klassen durchgeführt. Dabei wurden anhand eines Screenings spezifisch Kinder mit sehr hohem und sehr niedrigem IP für die Interviews ausgewählt. Die Antworten der Kinder wurden nach der Qualitativen Inhaltsanalyse Kategorien zugeordnet, die auf Basis der psychologischen Grundbedürfnisse erstellt und induktiv erweitert wurden. Ergebnisse zeigen, dass Kinder mit hohem IP sich stärker auf negative Situationen fokussieren. Dieser Fokus war speziell bei Antworten zu erkennen, die sich auf das Bedürfnis nach sozialer Eingebundenheit beziehen. Die spezifischen Schwierigkeiten von Kindern mit hohem IP innerhalb der psychologischen Grundbedürfnisse, die im Rahmen dieser Studie identifiziert wurden, können als Ausgangspunkt für die (Weiter-)Entwicklung bedürfnisorientierter Lehrkonzepte verwendet werden.

Schlüsselwörter: Internalisierende Probleme, Psychologische Grundbedürfnisse, Emotionen, Schule, Schülerinnen und Schüler

Psychological problems of children, particularly those that affect the ability to participate in and profit from school, have received more attention in research lately. However, despite high prevalence of internalizing problems (IP) in school (e.g., 6.5 % of students are diagnosed with anxiety disorders and 2.6 % with depressive disorders; Polanczyk et al., 2015), they are less often investigated than externalizing problems (Bilz, 2008). One important aspect that research has just begun to investigate is the role of school regarding the development and maintenance of IP. While associations between IP and school-related variables are well researched, ‘explanatory models’ remain largely unexplored. Satisfaction of basic psychological needs could be one construct to help explain why some children develop or increase internalizing symptoms in the school context while other children do not (Gu et al., 2023). In order to further our understanding of the development of IP, consideration of children’s perspectives could be particularly fruitful, since they are experts in judging their own needs and desires. Further, internalizing symptoms are,

as the name suggests, experienced within a person and therefore difficult to observe from the outside (Zatto & Hoglund, 2019).

Hence, this study aims to explore how satisfaction of basic psychological needs at school may help to explain positive and negative emotions from the students’ perspective and whether children with high IP have specific difficulties in having particular needs satisfied.

Internalizing Problems

In order to gain more insights into the perspective of children with high IP, a definition is needed first. Broadly speaking, IP include symptoms of depression and anxiety as well as somatic complaints (American Psychiatric Association, 2013). Conceptually, high IP are associated with elevated levels of negative emotions, as well as with diminished levels of positive emotions (Beaver, 2008). In accordance with those conceptual assumptions, Bai and Repetti (2018) found a negative association of IP with positive emotions and a positive association with negative emotions experienced

during school in a sample of fifth graders. Additionally, children with high IP, as well as their parents, have been found to use increased levels of dysfunctional emotion regulation strategies compared to children with lower levels of IP (Coyne & Thompson, 2011; Wang et al., 2018).

Internalizing Problems in the School Context

The school environment presents a wide range of emotionally challenging situations, particularly for children with high IP. As children spend a lot of time in school, both positive relationships with peers and teachers and high academic performance become important goals with increasing age (Rubin et al., 2007). To achieve these goals, children with internalizing symptoms such as anxiety and depression have major obstacles to overcome. They experience more negative situations with peers resulting in more frequent exposedness to peer-victimization and bullying (Christina et al., 2021), as well as lower numbers and quality of friendships (Luijten et al., 2021). But not only peer-relationships appear to be affected. Zatto and Hoglund (2019) could show that children with high IP also interact less positively and have more conflicts with their teachers while showing increased dependency on their teachers at the same time. Further, high IP are also associated with poor academic achievement (Weidman et al., 2015) and increased school dropout rates and school absence (Duchesne et al., 2008).

Hence, children with high IP face stressful emotional situations more often while also being less well equipped to cope with them compared to children with low IP. Experiencing stressful situations in school, however, in turn can contribute to increased negative emotions (Morrow et al., 2014), particularly when children are not sufficiently equipped to cope with them. One factor that has been suggested to help children, particularly those with high IP, is

the fulfillment of basic psychological needs (Wei et al., 2005).

Satisfaction of Basic Psychological Needs

In the barrage of different emotional, social and academic situations that children face on a daily basis, psychological needs can either be supported or thwarted (Guay, 2022). According to self-determination theory (SDT; Deci & Ryan, 2000), autonomy, competence, and relatedness represent the basic psychological needs necessary to promote motivation, psychological wellbeing, and a healthy development in educational contexts.

Stroet et al. (2013) have shown that need-supportive teaching increases learners' motivation and achievement while Vansteenkiste et al. (2004) found that creating autonomy-supportive learning environments has a positive effect on student's learning experience and performance (see Olivier et al., 2021, Stroet et al., 2015, for more information on need-supportive teaching).

Eugene et al. (2021) further suggest a mediating role of students' relatedness within school (i.e., connectedness) on the link between peer-victimization and IP. Need satisfaction, as well as a need supportive parenting style, are also associated with children's emotional well-being (Abidin et al., 2022; Ciydem et al., 2023). Hence, the extent to which psychological needs are fulfilled in school can be expected to impact children's emotional well-being, mental health and their confidence and self-esteem (Ryan & Deci, 2020).

Given aforementioned difficulties in social and academic contexts, children with high IP can be expected to have particular difficulties in having these needs fulfilled. Furthermore, IP seem to in turn be affected by the fulfillment of psychological needs (Wei et al., 2005; Yu et al., 2016).

However, to our knowledge no study has directly investigated need satisfaction, emo-

tional experience from the students' perspective and IP together as of yet.

Research Questions

Research Question 1—Emotional experience

In summary, evidence from previous studies suggests that children with high IP experience more negative and less positive emotions in school compared to children with low IP. However, previous studies have mostly relied on questionnaires and observations. This study is designed to add to the field by specifically focusing on children's own subjective conceptions and explanations of their emotional experiences.

1. How do children with high and low IP differ in terms of emotional experience in the school context?

Research Question 2—Explanation of emotional experience and need satisfaction

Results of previous studies in the field further provide evidence that children with high IP also assess and experience situations more negatively regarding their feelings of autonomy, competence, and relatedness compared to children with low IP. Children's own explanations of their emotional experiences can serve as an important indicator of whether a particular need is satisfied or not. This study sets out to provide a more detailed picture regarding satisfaction of children's psychological needs at school in general and whether satisfaction of individual needs differs between children with high and low IP. Further, explanations of emotional experience will be analyzed in order to identify specific topics within individual psychological needs that are particularly important for children with high IP.

- 2a Do explanations of emotional experiences at school match psychological needs as defined within self-determination theory? In what way do children with high and low IP differ regarding psychological need satisfaction?
- 2b Are there specific clusters of topics that can be identified within individual needs? In what way do children with high and low IP differ regarding topics mentioned within individual needs?

Methods

Participants

A total of 149 students (69 male, 80 female) from 11 elementary school classes (fifth and sixth grade) of 7 schools in Germany were screened for IP. Screened children were aged between 10 and 13 ($M_{\text{age}} = 10.9$ years, $SD_{\text{age}} = 0.82$). Based on screening data, a total of 16 students with high IP (8 male, 8 female) and 16 students with low IP (8 male, 8 female) were selected for an interview (see Appendix A).

Measures and Instruments

Internalizing problems

Children's IP were assessed with the German version of the self- and the teacher-rated emotional problems (EP) subscale of the Strength and Difficulties Questionnaire (SDQ; Goodman, 2001). Internal consistency of the SDQ-EP in this sample was acceptable (Cronbach's $\alpha_{\text{self}} = .65$; Cronbach's $\alpha_{\text{teacher}} = .75$).

Structured interview

Selected students were interviewed by either the first, second, or third author, or one of two students pursuing their master's degree. Each interview was conducted in a separate room at school during regular class.

In order to find out more about students' perceptions about everyday school life, particularly emotionally charged situations, structured interview guidelines were developed (see Appendix B). After a short introduction, the interviewer asked about school situations that the student generally perceived as positive. For each positive situation students reported, they were asked *why* they perceived that particular situation as positive. When the student implied that they had no more positive situations to report, the interviewer asked about negative situations in the same manner. Following that, the interview became more focused by asking consecutively about a list of a-priori defined school situations (i.e., break time, group work during class, presentations in front of the class, and test situations) and whether and why the student perceived them as positive or negative.

Qualitative Content Analysis

To explore children's experiences in school situations, qualitative content analysis (Mayring, 2015) was conducted using the software MAXQDA (VERBI Software, 2021). As dimensions used to assess children's perception on the satisfaction of their needs at school are based on SDT (Deci & Ryan, 2000), we used a predominantly deductive approach. However, explanations of valence within each category were further inductively subdivided into subcategories.

Categories

The main dimensions *emotional valence* and *explanation of valence* formed the preliminary coding frame:

Emotional valence. For the emotional valence dimension, the three categories *positive*, *neutral*, or *negative* were defined deductively. Coders were instructed to assign a valence category to every segment of the interview. Hence, every statement by the child had to be assigned to exactly one *emotional valence* category.

Explanation of valence. For the explanation of valence dimension, the categories *autonomy*, *competence* and *relatedness* were deductively defined based on the basic human needs identified within SDT (Deci & Ryan, 2000). While the categories *autonomy* and *competence* were left as is, *relatedness* was further subdivided based on the recipient (i.e., *relatedness peers*, *relatedness teachers*, and *relatedness parents*). Explanations of valence not clearly attributable to either of the psychological needs were assigned to the category *other explanations*. Because deductive explanation of valence categories were rather broad, they were further divided into inductive subcategories. Subcategories were independently created from the text material by first, second and third author and then discussed by first and second author. *Explanation of valence* categories were only assigned when a statement explicitly contained an explanation of valence. Hence, segments could either have no code, a single code, or multiple different codes.

Procedure

Following the procedure suggested by Mayring (2015), the categories themselves as well as descriptions and examples were evaluated and adapted after analyzing 25% of the interview material. Afterwards, the complete material was separately coded by the third author and another trained researcher. During the coding process, both coders did not know whether the children belonged to the high or low internalizing group. First and second author then went through all coding disagreements and dissolved them in discussion. The resulting final coding frame can be found in Appendix C.

Frequencies and percentages

In line with *structuring* as a form of interpretation, frequencies of textual components were counted to derive statements about the

weight of their importance (Mayring, 2015). For quantitative presentation of the results, several frequency parameters were extracted from coded segments (see Appendix D). All calculations were carried out using the statistical software R (R Core Team, 2023).

For the *emotional valence* dimension, number of words within respective categories were counted and added up within each student (i.e., number of words in positive, neutral, and negative segments were counted for each person). Number of words in positive/negative segments were used as an estimate of how much space within the conversation was spent on respective emotional valence. Further, the percentage of words in positive segments (words in positive segments divided by words in positive and negative segments) were calculated separately for each student.

Because *explanation of valence* categories were only assigned when a statement explicitly contained an explanation of valence, number of segments were calculated. Then, number of segments in respective categories and subcategories were counted and added up within each student. Further, the percentage of segments in positive valence segments were calculated separately for each explanation of valence category and student.

Analysis strategy

To answer research question 1, number of words in segments of each valence category as well as percentage of words in positive segments were calculated in total and separately for the high and low IP groups.

For research question 2a, mean number of segments assigned to each explanation of valence category (i.e., competence, autonomy, relatedness peers, relatedness teachers, relatedness parents, other) were calculated separately for the high and low IP groups. Further, mean percentage of codes in positive segments were also calculated separately for each of explanation of valence category and for both groups.

Finally, for research question 2b, inductive explanation of valence subcategories were analyzed separately for each category in a detailed hermeneutic-inductive manner. Further, to find out more about specific topics particularly important to children with high IP, subcategories were also investigated for detailed differences between the high and low IP groups.

Because of the small sample size, effect sizes for group comparisons have to be $d \geq .75$ in order to reach statistical significance. Because effects in social sciences rarely reach this threshold and explicit inference statistical analyses would therefore result in increased rates of beta errors, p was neither reported nor interpreted. However, all reported effect sizes can be compared to the above-mentioned threshold in order to check for significance.

Results

Descriptives

As can be seen in Table 1, grade and age were similar in both groups. Children in the high IP group used slightly more words in the interview in general as well as in emotional (i.e., positive or negative) segments.

Emotional Experience at School

Research Question 1

Figure 1a shows the distribution of words in negative, neutral, positive, and total segments for both the low and high IP groups. As depicted in Figure 1b, median percentage of words in positive segments was at roughly 60% in the low IP group and at roughly 35% for the high IP group. Hence, while positive emotional valence took up more space for interviewed children in the low IP group, the opposite pattern could be observed for interviewed children in the high IP group.

Table 1

Descriptives for sociodemographic variables and valence, situation, and emotional explanation categories separately for both groups

	Low internalizing difficulties	High internalizing difficulties	Group difference
	Mean (% pos.)	Mean (% pos.)	Effect size
SDQ EP self	1.2	6.4	-3.06
SDQ EP teacher	0.4	2.4	-1.07
Age (years)	10.7	10.7	0.00
Words total	1000.5	1178.3	-0.20
Words valence	857.5 (57.6 %)	998.9 (37.9 %)	-0.17 (1.06)
Segments competence	5.6 (46.3 %)	4.9 (41.9 %)	0.17 (0.18)
Segments autonomy	3.6 (89.1 %)	2.5 (87.4 %)	0.50 (0.08)
Segments peers	8.9 (60.9 %)	13.7 (41.5 %)	-0.88 (0.93)
Segments teachers	3.5 (58.2 %)	3.4 (25.1 %)	0.04 (0.84)
Segments parents	0.2 (100.0 %)	0.2 (66.7 %)	0.00 (0.82)
Segments other	2.0 (52.4 %)	3.1 (22.3 %)	-0.41 (1.03)

Note. SDQ EP = Strength and Difficulties Questionnaire - Emotional Problems; pos. = positive. Effect size Cohen's d. Except for words total, words and needs in neutral segments have been omitted. Values in parentheses are average percentage of words/segments in positive valence segments.

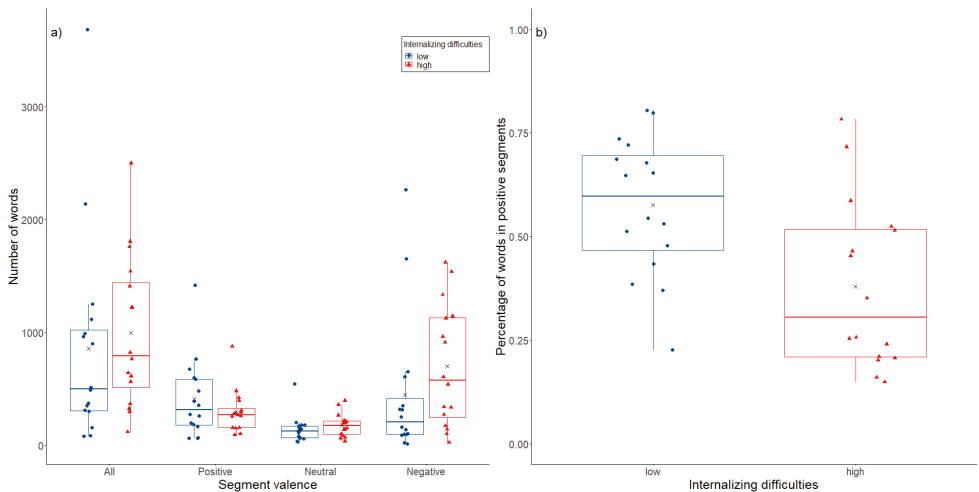


Figure 1

Boxplots showing emotional valence segments in interview transcripts

Note. a) Number of words in total and in positive, neutral, and negative valence segments. b) Percentage of positive words in emotional (i.e., positive and negative) segments.

Explanation of emotional experience and need satisfaction

Research Question 2a

Figure 2a depicts the number of interview segments for each explanation category. Across both groups, peers were most often mentioned as an explanation for emotional valence of school situations, while parents were hardly ever mentioned. When comparing frequencies between groups, peer-related needs were mentioned more often by interviewed children with high IP.

Percentage of positive segments were similar for both groups for autonomy- and competence-related categories (Figure 2b). Children in the low IP group, however, had a descriptively higher percentage of positive segments for peer- and teacher-related categories than children in the high IP group. Segments in the ‘other’ category were also descriptively more positive in the low IP group. Hence, negative emotional experiences of children with high IP are more frequently explained by a lack of relatedness (with both peers and teachers) compared to children with low IP, while there are only

minimal differences in the need for autonomy and competence.

Research Question 2b

In order to identify specific topics within individual psychological needs, frequencies of inductively created subcategories will be presented in tables and described in a hermeneutic-inductive manner.

Relatedness—Peers

Statements concerning positive interactions with peers mainly addressed a sense of community. Both groups pointed out the importance of cohesion: “(...) if I can do something with my friends. Without anyone being excluded, but that we all just have time for ourselves” (ID19_H). In this context, the students also mentioned the emotional support: “When I feel sad then my best friend always comforts me” (ID30_L). Receiving help in class was also a common topic across all students: “(...) so it’s not like you’re teased because you can’t do things, but it’s like, ‘Come on, try

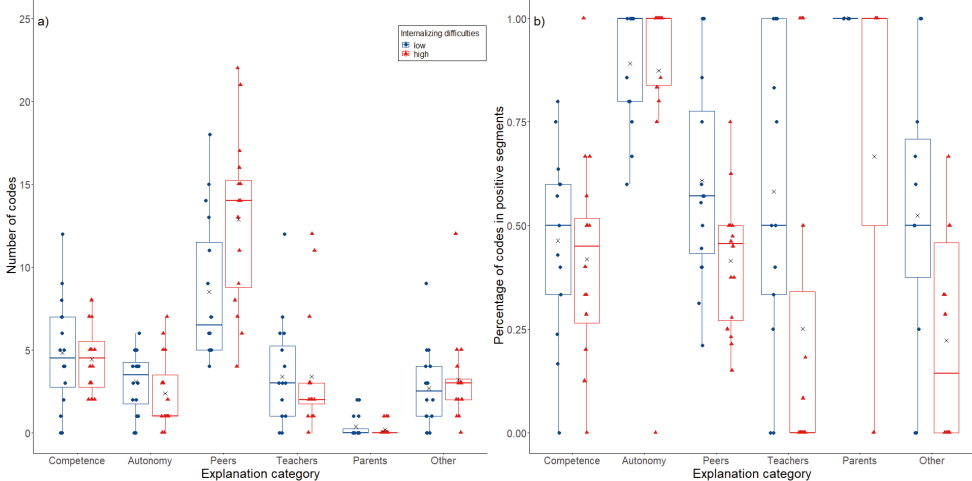


Figure 2
Boxplots showing emotional explanation segments in interview transcripts

Note. a) Number of coded segments for each explanation category. b) Percentage of positive codes in emotional (i.e., positive and negative) segments.

Table 2

Sum of segments for all peer subcategories separately for both groups

	Low internalizing difficulties		High internalizing difficulties		Group difference
	Sum	Range	Sum	Range	Effect size
Positive peer subcategories					
Working together	29	0–4	24	0–5	0.24
Community	28	0–3	24	0–5	0.18
Friendship	11	0–2	29	0–6	-0.86
Support	7	0–3	8	0–3	-0.06
Other	0	0–0	3	0–1	-0.66
Negative peer subcategories					
Exclusion	37	0–11	60	0–8	-0.51
Humiliation	6	0–3	20	0–9	-0.49
No support	4	0–3	17	0–3	-0.84
Antipathy	7	0–3	11	0–3	-0.27
No consideration	4	0–1	14	0–4	-0.66
Social comparison	4	0–3	5	0–4	-0.07
Other	4	0–2	1	0–1	0.42
Loneliness	1	0–1	3	0–1	-0.37

Note. Effect size Cohen’s d.

again” (ID9_H). The positive effect of having friends was more often expressed by interviewed children in the high internalizing group: “Break is something positive only when my best friend is there” (ID9_H). Although both groups were mentioning situations in which they feel humiliated by their peers, children in the high internalizing group were pointing them out more frequently. Particularly the fear of making mistakes and being laughed at seems to be an issue for most students: “(...) when you have to give a presentation and then you say everything wrong, and everyone laughs at you” (ID8_L). Being excluded was the most common reason for negative feelings in both groups, but again at a higher rate for children in the high internalizing group. Both being involved in a conflict but also observing one was negatively mentioned in several interviews. Especially children in the high internalizing group were worrying a lot about being judged: “(...) but of course you can’t please everyone, but you kind of want to” (ID1_H). In comparison to chil-

dren in the low internalizing group, children in the high internalizing group were often bringing up the feeling of no support and no consideration from their peers: “And in the end, I also got into trouble. So, we all got into trouble. But one of us and I actually tried to work” (ID3_H).

Relatedness—Teachers.

Positive teacher-related statements in both groups mainly referred to support in class: “If a teacher asks someone who didn’t put their hand up, well I think that’s quite good, because the teacher usually just wants to know whether we have understood it logically” (ID23_L). Only a few statements were related to perceived support in conflict situations. Children with high IP mentioned support and consideration from their teacher less frequently than children with low IP.

Regarding negative teacher-related statements, especially students in the high internalizing group reported a lack of perceived

Table 3
Sum of segments for all teacher subcategories separately for both groups

	Low internalizing difficulties		High internalizing difficulties		Group difference
	Sum	Range	Sum	Range	Effect size
Positive teacher subcategories					
Support	17	0–4	6	0–2	0.64
Consideration	7	0–3	0	0–0	0.60
Sympathy	3	0–1	4	0–2	-0.13
Other	2	0–2	0	0–0	0.35
Negative teacher subcategories					
Injustice	12	0–3	10	0–3	0.12
Negative Behavior	4	0–2	13	0–7	-0.43
No consideration	6	0–4	9	0–5	-0.16
No support	3	0–2	11	0–6	-0.44
Other	2	0–1	1	0–1	0.21

Note. Effect size Cohen's *d*.

support: "So I don't like it when teachers don't explain the material. And then they just give you a homework assignment that you don't really understand and then some say that you have to figure it out yourself (...)" (ID11_H). Children in the high internalizing group were also more often pointing out negative teacher behavior in the classroom: "(...) when he comes to class in a bad mood all the time. When he just starts yelling from the beginning (...)" (ID24_H). Furthermore, punishment and being wronged were also mentioned by both groups. In both groups, children also mentioned lack of consideration by their teachers: "Yes I sometimes find it a bit stupid when the teachers just chases who you work with" (ID21_H).

Relatedness—Parents. Because there were only very few instances of parents being mentioned, no subcategories have been created. Parents seem to play a role in relation to obtaining good grades: "And my parents also can have an impact on that if they just study with me and help me get a good grade" (ID1_H). Showing their parents poor grades was reported as unpleasant.

Competence

Positive competence-related statements were most often focused on obtaining good grades and the experience of high performance for both groups: „Well, you know you've studied well for it, or maybe you haven't, and yet you still write a good grade and that's just a feeling of happiness" (ID1_H). Personal improvement was also mentioned by children in both groups. Further, some students in both groups also mentioned the desire to check whether their learning endeavors were successful or to show everyone how hard they have worked.

Grades were also a common topic in negative competence-related statements, especially by children in the low internalizing group: "That was just really stupid (...), if I already knew I would write an E, I would not have started to learn at all" (ID16_L). In both groups, children were suffering from stress and anxiety during and before presenting situations and tests. However, in the low internalizing problems group, one child was responsible for ten of the 21 stress/anxiety segments. Statements in both groups were mostly referring to the fear of making

Table 4

Sum of segments for all competence subcategories separately for both groups

	Low internalizing difficulties		High internalizing difficulties		Group difference
	Sum	Range	Sum	Range	Effect size
Positive competence subcategories					
Good grades	14	0–6	10	0–2	0.20
Good performance	12	0–3	11	0–2	0.08
Personal improvement	6	0–2	4	0–2	0.19
Handling of weaknesses	7	0–3	3	0–1	0.36
Other	2	0–1	0	0–0	0.52
Negative competence subcategories					
Stress / anxiety	21	0–10	19	0–5	0.06
Bad performance	8	0–2	13	0–2	-0.45
Bad grades	11	0–2	4	0–2	0.68
Bad learning environment	0	0–0	7	0–2	-0.76
Social comparison	4	0–3	2	0–2	0.19
Negative judgement	3	0–1	2	0–1	0.17
Other	1	0–1	3	0–1	-0.37

Note. Effect size Cohen's d.

mistakes: "(...) because I'm just afraid that I won't get it right. I want to look at it, but I'm very nervous and then I'm also very afraid" (ID19_H). The fear of being ridiculed in front of the class was also a common reason for stress in presentation situations: "(...) when you have to give a presentation at the blackboard, I'm always very afraid that I'll do it wrong or that I'll be laughed at. That's why I sometimes tremble a bit" (ID19_H). Children in the high internalizing group were also mentioning bad learning environments, such as tasks not sufficiently explained by the teacher or lack of commitment of peers in group tasks.

Autonomy

Positive autonomy-related statements frequently included enjoyment of a particular subject or activity: "There is a book club where you read. (...) And then there are also sports games, which I also like" (ID15_H). Enjoyment played a relevant role for both groups, however, children in the high in-

ternalizing group were not mentioning it as frequently as children in the low internalizing group. Children in both groups suggested balance phases to cope with the everyday stress as important for positive experiences: "and the break, yes to relax I find quite important (...)" (ID13_H).

There were only few negative autonomy-related statements. As a common topic, virtually all autonomy-related explanations included expressions of boredom. Reasons included a lack of recreational activities and boring lessons or class activities: "Sometimes it's just a bit annoying to always copy stuff from the board" (ID12_L).

Other Needs

Positive statements in both groups included positive expressions about the equipment of the school, such as the supply situation or room design: "I think that's good, and I think the schoolyard itself is nice" (ID17_H). Children in both groups also pointed out the positive effect of breaks: "So normally,

Table 5
Sum of segments for all autonomy subcategories separately for both groups

	Low internalizing difficulties		High internalizing difficulties		Group difference
	<i>Sum</i>	<i>Range</i>	<i>Sum</i>	<i>Range</i>	<i>Effect size</i>
Positive autonomy subcategories					
Enjoyment	38	0–6	23	0–5	0.54
Balance	9	0–3	8	0–2	0.08
Ambition	3	0–2	4	0–1	-0.13
Negative autonomy subcategories					
Boredom	6	0–2	5	0–1	0.11
Other	1	0–1	0	0–0	0.35

Note. Effect size Cohen's d.

Table 6
Sum of segments for all other needs subcategories separately for both groups

	Low internalizing difficulties		High internalizing difficulties		Group difference
	<i>Sum</i>	<i>Range</i>	<i>Sum</i>	<i>Range</i>	<i>Effect size</i>
Positive other subcategories					
Good equipment	7	0–2	4	0–3	0.24
Relaxed environment	4	0–1	5	0–1	-0.13
Respectful school culture	0	0–0	4	0–2	-0.52
Other	3	0–1	1	0–1	0.37
Routine	3	0–2	0	0–0	0.49
Negative other subcategories					
Own personality	4	0–2	14	0–3	-0.84
Unrespectful school culture	3	0–2	6	0–3	-0.27
Bad equipment	4	0–2	4	0–3	0.00
Unrelaxed environment	0	0–0	6	0–2	-0.74
Other	2	0–1	3	0–2	-0.14
High workload	2	0–1	2	0–1	0.00

Note. Effect size Cohen's d.

you are happy to have a break in between all the learning and head strain" (ID17_H). Only within the low internalizing group, children were speaking positively about the perceived routine in school. While not addressed in the low internalizing group, some children in the high internalizing group were also positively mentioning the respectful school culture "(...) when you

can simply talk, that everyone understands you and also respects you" (ID19_H).

The bad equipment was brought up by children in both groups. Unrelaxed school environment was also mentioned as a source of negative feelings, but only by children in the high internalizing group. Children in the high internalizing group also more often suggested an unrespectful

school culture: “and don’t immediately say that what you said is stupid” (ID19_H).

Children in the high internalizing group were also more often mentioning their personality as a reason for negative emotions: “I also don’t like to be the person in the front. I prefer to be the one in the back and not stand out” (ID5_L).

Discussion

The first objective of this study was to explore emotional experiences of school children and how they differ in children with high and low IP.

Descriptive results show that children with high IP tend to report a smaller proportion of positive to negative situations compared to children with low IP. Hence, results of this study fit research suggesting that children with high IP tend to express more negative school-related perceptions compared to students with lower IP (e.g., Luijten et al., 2021; Zatto & Hoglund, 2019).

Further, differences in subjectively experienced need satisfaction and particular topics for children with high IP within individual needs were also investigated. The dimensions autonomy, competence, and relatedness proposed within SDT were clearly reflected in explanations for emotional experiences. Differences regarding percentage of positive codes were particularly pronounced in the relatedness dimensions. Interviewed children in the high internalizing group mentioned peer- and teacher-related explanations more often compared to children in the low internalizing group. This is in line with prior research on peer-peer as well as peer-teacher relationships (Bilz, 2013; Zatto & Hoglund, 2019).

However, while aforementioned studies were mainly focusing on statistical associations between IP and negative relationships to peers and teachers, results of this study can expand these results by providing more detailed explanations while also classifying them within basic psychological needs

categories. Developed categories within the relatedness dimension show a wide range of different aspects of relationships. Frequently reported subjective reasons for negative teacher-related situations included lack of support and consideration and negative behaviour, particularly by interviewed children in the high IP group, as well as perceived injustice. Results are in line with those of Reddy et al. (2003) who found that a perceived lack of teacher support is associated with an increase in depressive symptoms and a decrease in self-esteem. Regarding negative interactions with peers, interviewed children in the high IP group were more often suffering from being humiliated or excluded and more concerned about negative judgements from their peers compared to those in the low IP group. This is consistent with a large body of research on peer relationship problems such as victimization and exclusion (Christina et al., 2021; Hoglund & Chisholm, 2014). While previous research mainly focused on these concepts, results of this study indicate that lack of peer support and consideration are also particularly negative for students with high IP. Further, interviewed children in the high IP group mentioned the positive emotional impact of friendships far more than those in the low IP group.

In contrast to that, both autonomy and competence were not mentioned in a more negative manner by children with high compared to low IP.

While most of the explanations mentioned by interviewed children could be assigned to one of the psychological needs as defined within SDT, there were also several explanations outside the scope of SDT. Most notably, several of the interviewed children with high IP suggested their own personality as an explanation for negative emotional experience.

Limitations

Some limitations of the present study should be considered when interpreting the find-

ings. First of all, we did not aim for representativeness in the selection of the children, but we wanted to represent a wide variety of perspectives and contexts. Consequently, the results of this study do not lend themselves so much to generalization as they do to pointing out possible aspects of psychological needs and how they relate to various social situations in students' daily school lives.

Secondly, we did not define and operationalize IP from a clinical-pathological perspective but rather from a school-related pedagogical perspective. As a result, we cannot report the proportion of students with mental disorders in the high internalizing group and generalize the results to students with clinically relevant disorders. Moreover, we cannot distinguish between students with different types of IP e.g., primarily depression or social anxiety. Patterns of relations between emotional experience and need satisfaction might not be similar for different types of symptoms.

Finally, although we have attempted to objectify the data collection and the coding and interpretation of the textual material, subjective interpretations might have influenced the process of categorization. For example, children in the high and low IP group might have behaved differently in the interview process.

Conclusion

The general tendency of children with high IP to have more negative emotional experiences within school compared to children with low IP could be replicated in this study. Further, while all dimensions of SDT were reflected in the interviews, relatedness aspects were mentioned most frequently and also showed clearest differences between interviewed students with low and high IP. This underscores the importance of bringing aspects of social life and relationships in school to the forefront of pedagogical considerations when dealing with children with high IP.

Overall, these findings reflect those generated in quantitative studies, but expand them through the examination of student's own explanations and needs. Children's explanations for emotional experiences can provide important insights to help guide teacher's approaches to provide adequate need-support during class. Explanations for negative emotions can further help to raise awareness for children's individual triggers in the context of school. Reasons for positive emotions on the other hand, can be seen as children's personal resources and should therefore be supported. Furthermore, exploring children's emotions and their personal explanatory models for them can help deepen our understanding of IP. The specific topics within individual needs provided by participants of this study should be analyzed more deeply in future studies. Insights gained can be used to enhance and further differentiate need-supportive teaching models (e.g., Olivier et al., 2021; Stroet et al., 2015), particularly for children with high IP. Further, results of this study can be used to develop methods that help teachers identify and better support children with high IP.


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Offene Daten	Die Interviews werden noch übersetzt und vor Veröffentlichung auf osf.io veröffentlicht. Die Daten der Kategorienbildung werden auf GitHub oder OSF hochgeladen.
Offener Code	Der R Code wird mit den Daten auf GitHub oder OSF hochgeladen.
Offene Materialien	Der Interviewleitfaden wird auf OSF hochgeladen.
Präregistrierung	Keine Präregistrierung.
Votum Ethikkommission	Wir haben vor Start der Durchführung ein positives Votum der Ethikkommission der Universität Potsdam eingeholt. Die Senatsverwaltung für Bildung, Jugend, Sport Berlin und das Ministerium für Bildung, Jugend, Sport Brandenburg haben die Studie ebenfalls begutachtet und ihr okay gegeben.
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Autorenschaft	JB und EB haben das Manuskript geschrieben, die Studie geplant, den Interviewleitfaden erstellt und die Kategorien ausgearbeitet. JW und MM haben das Manuskript überarbeitet und standen bei der Planung beratend zur Seite. EB, JB und MM haben die qualitativen Daten ausgewertet. JB hat die quantitativen Daten ausgewertet und visualisiert.