

## Article

# Resilience Development of Swiss Adolescents: A Convergent Mixed-Methods Approach

Wassilis Kassis <sup>1,\*</sup> , Ulrike Graf <sup>2</sup>, Christian Rietz <sup>2</sup> and Franziska Widmer <sup>1</sup><sup>1</sup> Department of Research & Development, School of Education, University of Applied Sciences and Arts Northwestern Switzerland, 5210 Windisch, Switzerland; franziska.widmer1@fhnw.ch<sup>2</sup> Heidelberg University of Education, 69032 Heidelberg, Germany; ulrike.graf@ph-heidelberg.de (U.G.); christian.rietz@ph-heidelberg.de (C.R.)

\* Correspondence: wassilis.kassis@fhnw.ch

**Abstract:** Introduction: We applied a convergent mixed-methods research design, focusing on data from Swiss students to identify patterns of resilience development in high school. Method: The study consisted of an online longitudinal survey conducted in two waves, in autumn 2019 (n = 377 grade seven) and spring 2021 (n = 257 grade eight). By combining latent transition analysis (LTA), a person-oriented quantitative method, and qualitative content analysis, we detected four resilience patterns. Results: The longitudinal survey revealed a decrease in the “blooming” pattern (students who displayed high levels of individual and social support indicators as well as satisfaction with their grades and academic success measures) over time and, on the other hand, an increase in the “challenged” pattern, suggesting larger numbers of students with low levels of social support and academic success. Additionally, qualitative interviews were conducted with four students from the sample. These interviews provided insights into the stressors; coping experiences, skills, processes, and resources; and outcomes related to resilience. Discussion: The analysis revealed key factors contributing to resilience, including empowering experiences, supportive individuals, self-help as a prioritized resource, and a positive school environment. Merging the data has elicited various claims such as improving both home and school environments, along with focusing on elaborating their interplay, is the most efficacious approach to bolstering resilience.

**Keywords:** resilience; self-efficacy; self-determination; school success; adolescence; mixed methods



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## 1. Introduction

Resilience can only be referred to when acute or continuous risks are successfully overcome by the respective system [1]. In the sense of a broad or narrow [2] (p. 12) resilience concept, a distinction is made between normative risks, such as developmental psychological phases (puberty), and unforeseen, nonnormative ones, such as the Corona pandemic for adolescent students [3]. If, in terms of resilience promotion during a pandemic, normative risks can be accompanied in a preventive targeted manner by social and structural resources, resilience patterns, on the basis of existing knowledge, are more relevant for coping with nonnormative risks. During the COVID-19 pandemic, having strong resilience patterns could help shield students' mental well-being from the damaging effects of stressors. Resilience is characterized by the systems' ability to recover quickly from stress, adjust effectively to changes, and gain valuable perspectives, often described as “bouncing back” from adversity, not only by the individual but also by social and societal resources [3–5]. Resilience evolves when people and systems are adaptive in daily action to changing and diverse situations, not just in response to crises or risks being overcome. Therefore, resilience is understood as the “capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development” [1] (p. 10). This understanding of resilience underlines not only supporting factors but also the

individual's acceptance of the respective adaptive supportive actions taken. By that, the student is addressed not only as an individual being nourished by supportive factors but also as an agent for their own development.

The extent to which a potential risk turns out to be an experienced burden and/or a possible hurdle for adolescents' development depends also on the perception process of the person concerned in conjunction with existing resources. If the person can draw on individual, social, and structural coping resources or knows how to tap into them (with others), a potential risk can be approached as a challenge before it turns out to be a developmental burden. In this process of perceiving potential risks and dealing with them, self-determination and self-efficacy play a central role [6].

We adopt Masten's concept of "ordinary magic" to argue that resilience, both in general and in a school setting, consists of everyday rather than extraordinary processes [1]. To understand how high school students develop, we need to examine school systems that not only promote positive practices but also address and reduce existing threats to students' positive development. Ungar et al. [7] propose that schools, as dynamic systems, have the potential and responsibility to influence students' resilience. Therefore, researchers should collect data on both individual and environmental factors within the same study. Research suggests that improving home and school environments and interactions within these contexts is the most effective way to enhance resilience outcomes for children and youth after exposure to adversity [7]. Resilience can be understood as adaptivity, with two dimensions: an action dimension and an outcome dimension [8]. This goes beyond common resilience models that focus on factors and processes primarily for individuals overcoming crises as it considers social and societal characteristics that enable productive everyday coping [9]. A person, family, institution, or community can be understood as a system [1] (p. 10). The multisystem approach to resilience promotion emphasizes the interaction among adolescents, family, educational and care institutions, and community [6] (p. 95).

Successful resilience patterns require navigation and negotiation, with navigation referring to the individual's ability to navigate resources and negotiation being the interaction between the environment providing services and the individual [9]. Negotiation is intertwined with individuals' social activities and social competencies, which we propose to include as part of negotiation resources [8]. Navigation and negotiation are two interwoven important support aspects for adolescent students to develop resilience. Navigation involves proactive action by the student, whereas negotiation involves child-centered supportive interactions with the school to provide academic and social support. To promote school-based resilience, students must proactively navigate and negotiate with their environment [9] while knowing that a successful negotiation at school hinders adults' (teachers') ability to understand and foster students' needs. Perceived self-efficacy can be deemed a core navigation indicator at school as it represents the belief in one's ability to perform an action and produce positive outcomes and is another crucial characteristic that enables individuals to remain active in challenging situations [10]. However, these positive beliefs must be followed by specific actions, as specific resilience processes, to achieve school success. Self-determination theory is a key aspect of this negotiation as students' basic psychological needs for positive relationships, autonomy, and academic competence must be met [11]. Another important resilience factor in adolescence, according to Hjemdal et al. [12], is resilience indicators contributing significantly to students' individual psychological and psychosocial stability and promoting productive navigation and negotiation. These positive and proactive beliefs and needs at school must be closely connected to the respective actions because students need to follow routines to achieve their goals [13]. Accordingly, supportive factors at school and in the family are a basic component for developing the ability to act.

The importance of school for the biography makes the question of resilience development among adolescents in their sensitive pubertal phase interesting in two respects [7,14]: First, humane reasons demand that in a space in which pupils have to redeem their right to

education as a civic duty [15], all pedagogically professional framework conditions and activities should be designed considering their general and specific resilience-promoting qualities as far as psycho-social learning opportunities are concerned. Second, school, in its qualification function as a meritocratic institution, plays a decisive role in the pupils' occupational biographies [16], which with the claim and promise of equal opportunities has to result in the best possible outcome for all within reach. In this respect, success at school is also objectively expressed through grades.

It is important to note that there is no universal resilience process and that success in high school depends on specific conditions for each individual student. Ungar [17] refers to the neglect of children's perspectives as "professional myopia" when interventions in schools or social services overlook the agency of children, their navigation, as consumers of a service. In the case of high school resilience, success depends on the service ecologies and results from the interaction, the negotiation among what is provided to at-risk children, their access to health resources on their own terms, and how well the resources provided address their unique set of problem behaviors and psychopathologies.

For negotiations to be effective, they should be flexible and student-focused, and students should feel that the support provided is approachable and effective. Supportive social contexts, such as teacher recognition and support, require social competence from both the school and the students [9]. The quality of the relationships between teachers and students is an important predictor of student academic performance and social-emotional development. Teachers' attitudes and behaviors, such as empathy, respect, and emotional warmth, significantly influence students' motivation to learn, the level of school participation, and academic performance [15]. In our study, it is not enough for adolescents to simply persevere in school despite the challenges they face as this could be deemed a cheap just-do-it approach.

The question of when a risk is considered to have been successfully dealt with in the sense of a challenge or a burden, on the one hand, is a normative one and, on the other hand, cannot be clarified without taking into account the person's subjective perspective [18]. Therefore, we ask critically, for example, how lower grades are connected to the individual assessment of the subjective significance. As much as compulsory schooling is considered a structural resource for the implementation of the human right to education, it must be asked, in each context, to what extent it proves to be generally conducive to the development of protective factors in its personal, social, and structural resources and practices or can even become a risk for students, especially during adolescence, which is considered vulnerable in a broad understanding of resilience [19].

Adolescence in particular is considered a developmental phase associated with relevant changes in the physical, social, and psychological development dimensions. Studies by the World Health Organization [20] show that anxiety and depression, as mental disorders, are among the risks of this phase [4,5], especially in connection with the COVID pandemic [6,21,22], which can impair life satisfaction, cause further physical and mental disorders, increase suicidality, and generate performance problems [23].

## 2. Materials and Methods

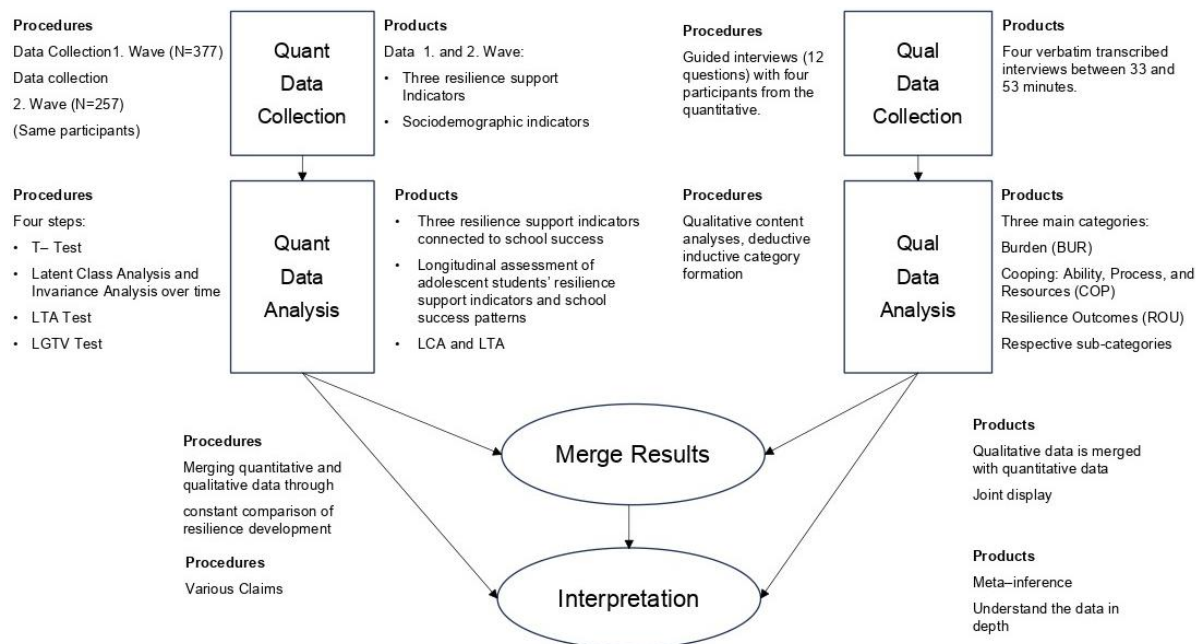
### 2.1. Overall Research Design

This study focused on the examination and evolution of resilience patterns. To facilitate our investigation, we employed an exploratory research question. This research question was overarching, meticulously constructed to embody the principles of both the quantitative and qualitative data. In a "pragmatic" mixed-methods research design [24–26], resilience-related patterns of students were investigated quantitatively in a longitudinal study, and the subjective resilience concepts of students were surveyed by means of a qualitative approach.

Three exploratory research questions were formulated regarding the overarching exploratory framework for both approaches:

1. What are the specific patterns of support factors and school success that are conducive to resilience?
2. What do these patterns' trajectories over time resemble?
3. What factors support self-efficiency and self-determination?

Technically speaking, we used a convergent mixed-methods research design (see Figure 1), about which Schoonenboom and Johnson [27] (p. 117) stated, "...the quantitative and qualitative strands of the research are performed independently, and their results are brought together in the overall interpretation". In this study, the quantitative data were collected first. Then, the four participants for the qualitative study participated voluntarily. Notably, these participants were selected from the quantitative sample, adding a richer and more comprehensive perspective to the study. In a convergent mixed-methods research design, the two strands, the quantitative and the qualitative, are collected and analyzed separately [24,28]. However, there was a connection between the studies at two points in time; first, at the beginning, when the research question was formulated and the two sub-studies were planned, and second, in the final phase of the project, when the studies' results supported each other.



**Figure 1.** Convergent mixed-methods research design.

Because a mixed-methods design should lead to added value in the sense of "1 + 1 = 3" [29] (p. 163), the question naturally arises of what such a mixed-methods data evaluation that generates this added value towards "3" looks like. Within this convergent mixed-methods study, we corroborated, directly compared, and related the two sets of findings about the resilience development of adolescence in Swiss high schools. Moreover, a joint display [24] was developed to merge the data. Finally, a meta-inference was developed, and claims were constructed [30].

The underlying scientific theoretical foundation of (U.S.) pragmatism is usually associated with mixed-methods research as an overarching approach embraced by a large number of mixed-methods scholars [24–26]. From the authors' point of view, an epistemological location is essential for methodologically well-established mixed-methods research, independent of the current paradigms regarding qualitative and quantitative research. (U.S.) pragmatism provides this framework [24–26]. In line with a pragmatic research paradigm, the qualitative study helps reveal the perspectives of participants who were

chosen using the quantitative survey and helps researchers connect and integrate various claims to develop a meta-inference as a final step [30].

### 2.1.1. Participants Quantitative Study

The representative random sample data in wave 1 ( $n = 377$  high school students) and wave 2 ( $n = 257$  high school students) from 33 school classes in German-speaking northwestern Switzerland were collected anonymously using an online questionnaire twice in one year. Wave 1 data were collected in autumn 2019, with seventh-grade adolescent students, wave 2 data in spring 2021, with the same participants, and then in grade eight almost two years later. Consent forms were obtained from students and their parents. No incentives were given. An ethics research committee at the University of Zurich in Switzerland authorized the project.

On the day of the study, the research team members gave the students a short oral introduction to the survey, and the students completed the questionnaire in about 35–60 min. The sample average age ( $M_{age\_wave\ 1}$ ) was 12.67 ( $SD_{age\_wave\ 1} = 0.68$ ) at wave 1 and 14.60 at wave 2 ( $SD_{age\_wave\ 1} = 0.72$ ). At wave 1, 46.8% of the participants ( $n = 167$ ) were female, and at wave 2, 43.2% ( $n = 111$ ) were female. At wave 1, 65.3%, and at wave 2, 67.3% of the participating students had a migration background. At wave 1, 22.5% of the participating students had a low socioeconomic status (SES), 51.7% a middle SES, and 25.7% a high SES. At wave 2, 22.4% of the participating students had a low SES, 50.6% a middle SES, and 27.1% a high SES.

In terms of attrition, from wave 1 to wave 2, there were no significant differences in the tested sociodemographic variables between wave 1 ( $n = 377$ ) and wave 2 ( $n = 257$ ) participants (gender  $t(251) = 1.952$ ,  $p > 0.05$ ; migration background  $t(257) = -1.00$ ,  $p > 0.05$ ) or SES (SES  $t(254) = 1.00$ ,  $p > 0.05$ ). Therefore, the two samples were comparable even though some participants were absent because they had moved or were not present during the COVID-19 pandemic.

### 2.1.2. Participants Qualitative Study

Four students from the Swiss sample were interviewed online about their subjective resilience concepts between 25 May and 21 June 2021. Only those who consented to participate in the qualitative interviews were selected as participants. Participation was solicited in the survey classes of the quantitative study, and staff members who carried out and oversaw the survey phase of the research in the schools solicited a request. In terms of the analyses, a research assistant conducted the interviews, while employees of the institute transcribed the interviews. In contrast, the assessment was conducted by the authors of this article.

The interviews lasted between 33 and 53 min. The students were attending a middle-level high school track (grades 7 to 10) at the time. Three of them were in grade eight, and one was in grade seven. Two of the students were female, and two were male. Two stated they had not heard of the term “resilience”, and the other two knew the word. Informed consent was obtained from the interviewees and their parents.

## 2.2. Analytic Strategy

### 2.2.1. Quantitative Analytic Strategy

This study’s aim was twofold. First, it was intended to test the three introduced resilience support indicators and their connection to school success. Second, it was intended to assess adolescent students’ resilience support indicators and school success patterns over time [31] to help aid in prevention and intervention programs.

We conducted an LCA and an LTA as typological person-oriented approaches to empirically assign latent variables to subgroups based on seemingly similar observations [32–34]. The individuals were assigned to the patterns based on their posterior probabilities for class membership.



Therefore, this study's statistical analysis was conducted in four steps: First, wave 1 versus wave 2 survey differences in the seven applied measures (READ, self-determination, self-efficacy, satisfaction with grades, LGVT reading test, and grades in German and English) were examined using *t*-tests. Second, adolescent students' classes were identified separately by conducting LCAs using six classification variables for both wave 1 and for wave 2. Additionally, invariance analysis across time was conducted to ensure the reliability of the identified number of patterns (configural invariance) in both study waves as well as the same relevance of the respective patterns (metric invariance). Third, we conducted an LTA to identify significant differences in the longitudinal classification variables on the identified patterns. Fourth, gender, migration background, socioeconomic level, school level, grades, and the LGTV test were included as predictors of multinomial logistic regression analyses to predict the identified latent status membership. For all conducted LCAs/LTAs, we used Mplus version 8.6 [35]. Missing data between wave 1 and wave 2 were imputed following the default full information maximum likelihood estimation procedure. For the multinomial regression, SPSS 25 was used.

### 2.2.2. Qualitative Method and Analysis

The semi-structured interviews were conducted using a guide developed in the project on students' subjective concepts of resilience (Project Inequalities and Resilience at School, an international Comparison (MRC National Science Foundation/ SNSF, National Center of Competence in Research/NCCR on the move, 2019–2023)). The guide (see Supplementary Material) was designed based on key findings on resilience and included 12 questions in the core phase.

The interviews were transcribed verbatim but slightly adapted in language and punctuation to the country's written language [36] (p. 167). The evaluation was conducted according to the content-structuring qualitative content analysis, based on Kuckartz [36], in combination with hermeneutic evaluation elements. The rationale relies on the fact that the data allow for both inductive and deductive analysis, thereby providing a comprehensive examination of the content. The process of coding the interviews was executed by a single investigator, followed by a verbal validation undertaken by another researcher and then the collective, ensuing a layered and refined analytical approach. Based on Masten's definition of resilience, deductive–inductive category formation resulted in the three main categories: burdens (BUR); coping, ability, process, and resources (COP); and resilience outcomes (ROU), including the respective subcategories. In the joint display, the interview analysis results were grouped according to their significance for the research question. To ensure further trustworthiness, the researchers' biases were reflected constantly throughout analyzing the data. To merge the data through a joint display, the qualitative data were further organized by another researcher who is not a specialist in resilience development. This ensured team reflexivity [37]. Moreover, a negative case analysis and peer review further strengthened the trustworthiness of the qualitative data.

## 2.3. Measures Quantitative Study

### 2.3.1. The Three Resilience Support Indicators

**READ.** The Resilience Scale for Adolescents [12] includes a structured life subscale comprising 27 items that assess protective factors over five subdimensions: personal competence, social competence, structured style, family cohesion, and social resources. The participants rated the items on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree), resulting in a moderate level of internal consistency for wave 1 ( $\alpha = 0.90$ ) and wave 2 ( $\alpha = 0.93$ ). To conduct latent class analysis (LCA)/latent transition analysis (LTA), the data were divided into two groups based on a median split for wave 1 ( $Mdn = 3.7$ ) and wave 2 ( $Mdn = 3.8$ ), representing lower levels (0) or higher levels (1) of resilience factors.

**Self-Determination.** Following Deci and Ryan's [11] DT on human basic psychological needs, we measured the three subscales, autonomy (e.g., "I was free to do things in my own way"), competence (e.g., "I have accepted and mastered great challenges"), and relatedness

(e.g., “I had the feeling of being in contact with classmates who are close to me”), on brief scales with six items each. The 18 items (Wave 1:  $\alpha = 0.79$ ; Wave 2:  $\alpha = 0.82$ ) were rated on a 4-point Likert scale ranging from 1 (not true at all) to 4 (completely true).

**Self-Efficacy.** The General Self-Efficacy Scale is a psychometric scale Schwarzer and Warner [10] developed to assess optimistic self-belief regarding coping with various challenging demands in life (e.g., “I am confident that I could deal efficiently with unexpected events”). The 10 items (Wave 1:  $\alpha = 0.89$ , Wave 2:  $\alpha = 0.91$ ) are rated on a 4-point Likert scale ranging from 1 (not true) to 4 (completely true).

### 2.3.2. The Four School Success Indicators

**LGVT Reading Test:** To assess reading literacy, we used the LGVT 5–12+ [38], a method for assessing the reading comprehension and reading speed of students in fifth through twelfth grades. We decided to use this test because reading comprehension and reading speed are among the factors that play an essential role in the acquisition of knowledge. They are therefore important prerequisites for success at school. In this context, data on reading speed reflect basal reading skills, which are an important prerequisite for higher-level reading comprehension processes [39,40].

**Satisfaction with School Grades:** The students responded to a single statement about their satisfaction with their school grades (“I am satisfied with my school grades”) on a 4-point Likert scale ranging from 1 (not satisfied) to 4 (completely satisfied).

**Grades in German and English:** We asked the students what their last report card grade was in German and English.

### 2.3.3. Sociodemographic Indicators

**Gender.** We indicated the students’ genders using two response options (0 = boy, 1 = girl).

**Migration Background.** Not having a migration background meant the student and both of their parents were born in Switzerland and all three possessed only a Swiss passport. Having a migrant background was operationalized such that one or more of the aforementioned conditions did not apply.

**Socioeconomic Status (SES).** Students’ SES was used as a proxy for their socioeconomic background. Information on parental education mainly was gathered from the two questions on the parental questionnaire: “What is the highest level of school education that you have completed?” (responses ranging from 1 (general high-school certificate/vocational high school certificate/primary education diploma) to 5 (I did not finish primary school)) and “Have you completed University, ETH, Higher Education School of Technology, Higher Education Pedagogical School (graduate with license to practice a profession, diploma, masters, bachelors, teaching diploma)?” (response option = yes/no). Using this information, the final SES variable was created by a mean score, ranging from 1 (low SES) to 3 (high SES).

## 3. Results

### 3.1. Quantitative Results

#### 3.1.1. Analytic Step One: Differences in All Measures between the Two Waves

We ran *t*-tests (see Table 1) to analyze mean differences between the two waves of the eight applied measures for our sample (Wave 1\_n = 377, Wave 2\_n = 257). Overall, we had significant differences between the waves for most of the indicators (see Table 1). Significant decreases from wave 1 to wave 2 were detected in satisfaction with grades and grades in English, both with low Cohen’s *d*. For self-efficacy and the grades in German, increases were displayed with significant higher levels at wave 2 and low to mid-level Cohen’s *d* effects. For the LGTV test, we identified a significant increase from wave 1 to wave 2 with high Cohen’s *d* effects (see Table 1).

**Table 1.** Wave 1 and wave 2 sample mean levels (and standard deviations) of all observed variables.

Variables	Range	Wave 1 M (SD)	Wave 2 M (SD)	Cohen's <i>d</i>
READ	1–5	3.67 (0.69)	3.71 (0.71)	-
Self-Determination	1–4	2.88 (0.44)	2.86 (0.47)	-
Self-Efficacy	1–4	2.82 (0.53)	2.94 (0.54) **	−0.22
Satisfaction with Grades	1–4	2.78 (0.76)	2.66 (0.83) *	0.15
LGTV Test (Reading Understanding, Raw Value)	<2–84	20.03 (0.94)	29.09 (12.95) ***	−0.78
Grades in German	1–6	4.63 (0.58)	4.81 (0.45) ***	−0.35
Grades in English	1–6	4.89 (0.69)	4.76 (0.62) **	0.20

Notes. Wave 1\_n = 377, Wave 2\_n = 257; \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , between Wave 1 and Wave 2.

### 3.1.2. Analytic Step Two: Identifying Patterns Separately for Wave 1 and Wave 2 by Conducting an LCA

In step two, we identified adolescent students' patterns by conducting two separate LCAs (an LCA for both waves) using the same seven classification variables (see Table 1). A separate set of LCAs for each wave was conducted to determine the optimal number of classes at each point. The 376 individual cases were assigned separately to a group based on their response similarity in the measured seven indicators. LCA, as a person-centered approach, assumes that latent groups exist based on categorical indicators, referred to as latent classes. These latent classes' participants had similar response patterns in the same class [41]. Therefore, individuals in each group shared the same pattern of supportive indicators and school success. The LCA was conducted for a range of two to six latent classes. The main aim was to determine significantly distinct supportive indicators and school success classes.

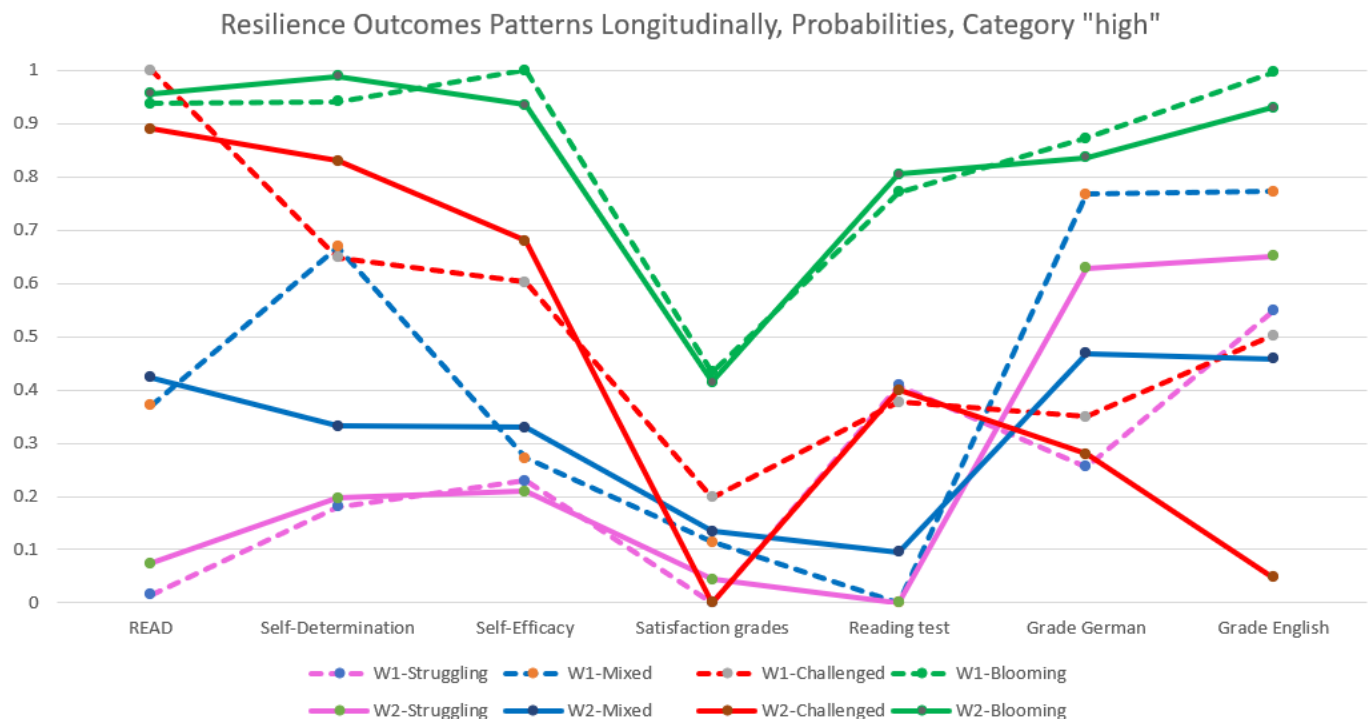
Statistical indices were used to determine the optimal number of latent classes: BIC, ABIC, and AIC as well as significant LMR-LRT, ALMR-LRT, and BLRT. However, the final model for an LCA/LTA (i.e., how many classes) was chosen based on a mix of statistical indicators and extant theoretical considerations [33,34].

For both waves, we identified the four-class solution as the most appropriate one, with the aBIC numbers being the lowest and the five-class solution having higher levels (see Table 2). Additionally, a four- instead of a three-class solution was necessary for both waves. From three to four classes, we split a bigger class into two middle-size classes to gain insights into differential processes (see Figure 2) on supportive indicators and school success patterns. Through this analysis process, we detected a class with high levels of both supportive indicators and school success and a class with low levels of both (see Figure 2). Additionally, we detected a class with high levels of supportive indicators and low levels of school success and a class with a mixed pattern on both supportive indicators and school success. This mixed class had mostly low levels of both supportive indicators and school success.

**Table 2.** Latent class analysis model fit statistics to select the number of classes for both waves sequentially.

Classes	Wave 1									Wave 2								
	AIC	BIC	BIC ad	VLMR	LMR A	Boot-Strapped	Entropy	Classification Accuracy	Samples in %	AIC	BIC	BIC ad	VLMR	LMR A	Boot-Strapped	Entropy	Classification Accuracy	Samples in %
2	3025	3084	3036	<0.001	<0.001	<0.001	0.613	≥0.876	≥49.6	2092	2147	2099	<0.01	<0.01	<0.001	0.614	≥0.869	≥38.4
3	2999	3089	3016	>0.05	>0.05	<0.001	0.666	≥0.715	≥27.6	2051	2135	2062	<0.01	<0.01	<0.001	0.647	≥0.794	≥13.8
4	2992	3114	3015	<0.05	<0.05	<0.05	0.706	≥0.708	≥13.9	2049	2162	2064	>0.05	>0.05	>0.05	0.674	≥0.782	≥13.8
5	2995	3148	3024	>0.05	>0.05	>0.05	0.713	≥0.713	≥12.0	2049	2191	2068	>0.05	>0.05	>0.05	0.651	≥0.703	≥14.9
6	3001	3186	3037	>0.05	>0.05	>0.05	0.673	≥0.646	≥6.7	2058	2229	2079	<0.01	<0.01	>0.05	0.691	≥0.705	≥1.4





**Figure 2.** LTA pattern plot for both waves with class-specific probabilities of the respective high level for the seven indicators in the data.

Before conducting an LTA and after identifying for both waves by separate LCAs for the same number of classes (configural invariance), we also tested for measurement invariance over time and detected the constraint to the unconstrained model being invariant (Chi2 test:  $\Delta\chi^2 = 50.37$ ,  $df = 28$ ,  $p > 0.05$ ). Due to this result, full measurement invariance was assumed.

### 3.1.3. Analytic Step Three: LTA to Indicate Significant Differences in the Longitudinal Classification Variables

In step three, an LTA was conducted to indicate significant differences in the longitudinal classification variables on the identified patterns. LTA, the longitudinal extension of LCA, is a statistical tool that can fulfill the need to model adolescent transitions over time [34]. It can estimate the continuity of supportive indicators and school success at consecutive points, whether the transition is forward (e.g., transition from a lower pattern to a higher) or backward (e.g., from a higher pattern to a lower). After determining the optimal number of classes separately at each time point as three (see analysis in step two), we conducted an LTA to estimate the probabilities of pattern changes over time from one latent class to another [34]. In this statistical step, change was represented by the probability of transitioning to a latent status at wave 2, given latent status membership at wave 1 [34]. Also, we explored whether the same latent status could be identified in both wave 1 and wave 2.

We conducted an LTA, using the previously mentioned seven classification variables (for model fits, see Table 3). The LTA was conducted for a range of two to six latent classes to determine whether the conditional response probabilities had been constrained to be time-invariant.

**Table 3.** Latent transition analysis model fit statistics to select longitudinally the number of classes of supportive indicators and school success.

	AIC	BIC	ABIC	Entropy	Classification Accuracy	Samples in %
2 Patterns	5060	5127	5073	0.673	$\geq 0.879$	w1: 38.3/61.7 w2: 39.3/60.6
3 Patterns	4968	5082	4990	0.699	$\geq 0.796$	w1: 36.9/32.7/30.3 w2: 35.6/32.1/32.1
<b>4 Patterns</b>	<b>4937</b>	<b>5106</b>	<b>4969</b>	<b>0.740</b>	$\geq 0.748$	<b>w1: 28.1/39.6/6.7/25.4</b> <b>w2: 18.9/36.0/17.6/27.3</b>
5 Patterns	4918	5149	4962	0.719	$\geq 0.732$	w1: 30.1/18.2/16.9/26.7/7.9 w2: 28.4/12.4/18.8/24.1/16.1
6 Patterns	4925	5227	4983	0.742	$\geq 0.697$	w1: 19.4/8.8/14.9/6.2/27.0/23.4 w2: 13.3/16.9/16.8/7.2/24.9/20.6

Note. AIC = Akaike information criterion; aBIC = adjusted Bayesian information criterion.

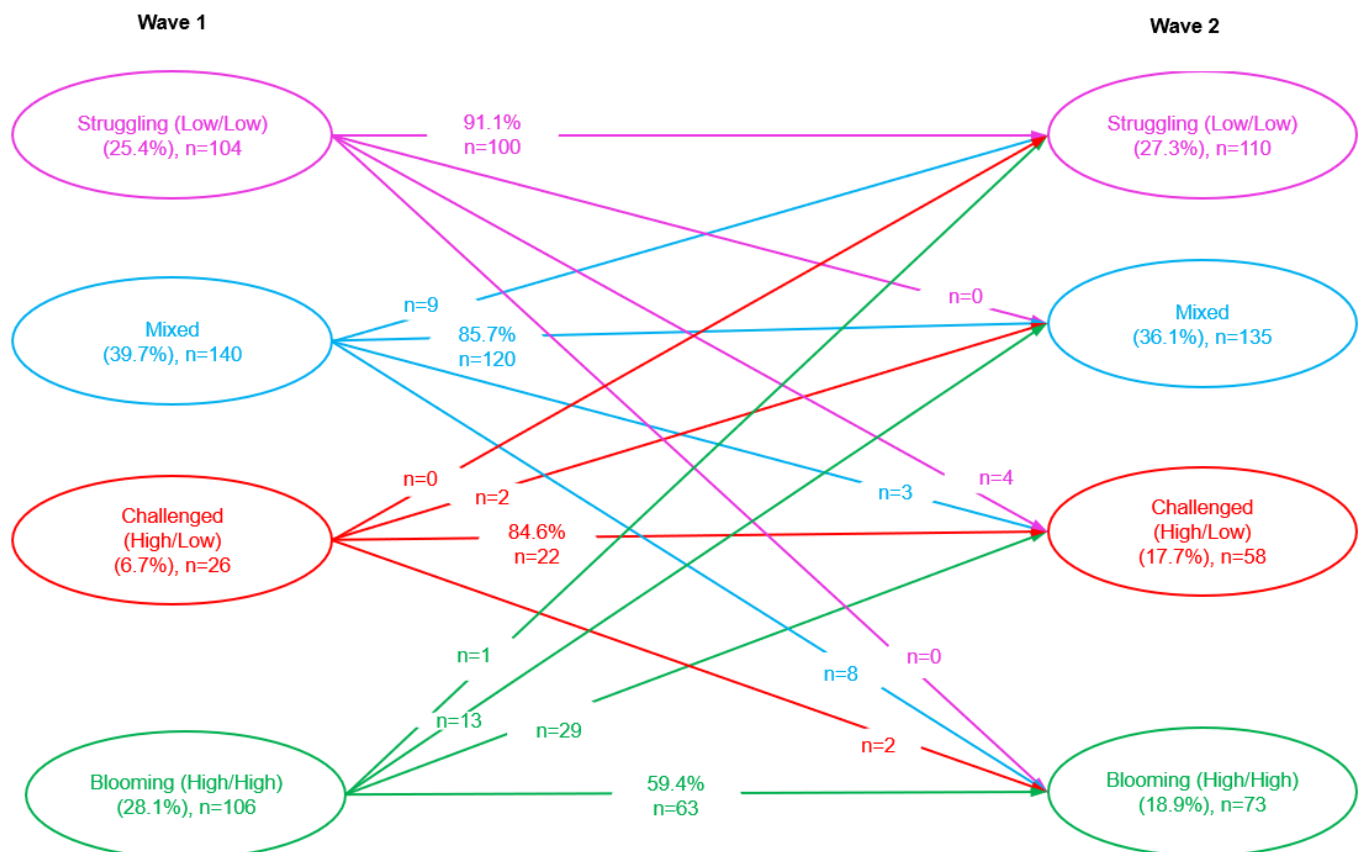
The aBIC dropped (see Table 3) between the three- and four-class solutions ( $-\Delta 21$ ), and the corresponding aBIC stability ( $-\Delta 7$ ) from the four- to the five-class solution indicated the four-class solution was the appropriate one. The detected samples for the respective solutions (see Table 3) supported the four-class solution, with the five-class solution having numerous sub-samples with far too few ( $< n = 50$ ) students allocated to the particular sub-samples. Due to the sub-sample sizes and the rule of deference to more constrained models, a four-class solution was selected for the longitudinal analyses via LTA.

Regarding the distribution of the four classes for both waves (see Table 4), we identified significant changes: a significant decrease over time for both the “blooming” class ( $-9.2\%$  from wave 1 to wave 2) and the “mixed” class ( $-3.6\%$  from wave 1 to wave 2). We noticed a modest increase for the “struggling” class of  $+1.9\%$  from wave 1 to wave 2. The only remarkable increase was detected in the “challenged” class of  $+11.0\%$  from wave 1 to wave 2, up from  $6.7\%$  to  $17.7\%$ .

**Table 4.** Estimated longitudinal probabilities of the four resilience patterns by latent transition analysis.

Supportive Indicators and School Success Pattern	Wave 1	Wave 2	$\Delta W2 - W1$
Blooming: High Supportive Indicators and High School Success	28.1%	18.9%	$-9.2\%$
Mixed: Mixed Supportive Indicators and School Success	39.7%	36.1%	$-3.6\%$
Challenged: High Supportive Indicators and Low School Success	6.7%	17.7%	$+11.0\%$
Struggling: Low Supportive indicators and Low School Success	25.4%	27.3%	$+1.9\%$

Upon comparing the classes’ stability over one school year, a multilayered picture emerged (see Figure 3). Concerning the stability over time, only one pattern (struggling) of the four classes showed remarkable immobility, with about  $91\%$  of the students being reassigned to the same class. In contrast, only  $59.4\%$  of the students being assigned to the blooming class at wave 1 were in the same class at wave 2.



**Figure 3.** Transition over time among the four patterns for both waves in the data. Note: missing data between wave 1 and wave 2 were imputed following the default full information maximum likelihood estimation procedure.

These distributions and changes over time reveal that no student moved to the blooming or the mixed class from the struggling class. This low transition to the blooming class holds also for the mixed and challenged classes. In terms of “ordinary magic”, as Masten [1] described positive developments like resilience, only a negligible proportion ( $n = 10$ ) of the participating students transitioned from the other three classes to the blooming class. When focusing on the blooming pattern from wave 1 to wave 2, 40.6% ( $n = 43$ ) moved to the lower resilience classes after almost two years of school.

### 3.2. Qualitative Results

Creating a joint display was the first step to merging the quantitative and qualitative data (see Figure 4). The collective reflexivity [37] while creating a joint display was essential for the credibility and transparency of the research process (see Figure 4). The qualitative results are first presented along three categories, which are burdens, key resilience factors, and the main individual coping strategy, in connection to the four students interviewed. Thus, the students present one example of possible representations of the four classes. The joint display shows their assignment to the classes—recognizable by their colors. Double-coloring designates the developments of Bo-Gustav (MM\_I1\_S2\_CH\_P), Blanca-Pat (MM\_I1\_S4\_CH\_P), Pascal-Ron (MM\_I1\_S3\_CH\_P), and Ruth (MM\_I1\_S1\_CH\_P) (all references to original quotations in the following refer to the transcripts mentioned. The transcripts were written and analyzed in German. The translation into English was only carried out for the quoted passages. The numbers indicate the position in the German transcript) from wave 1 to wave 2.

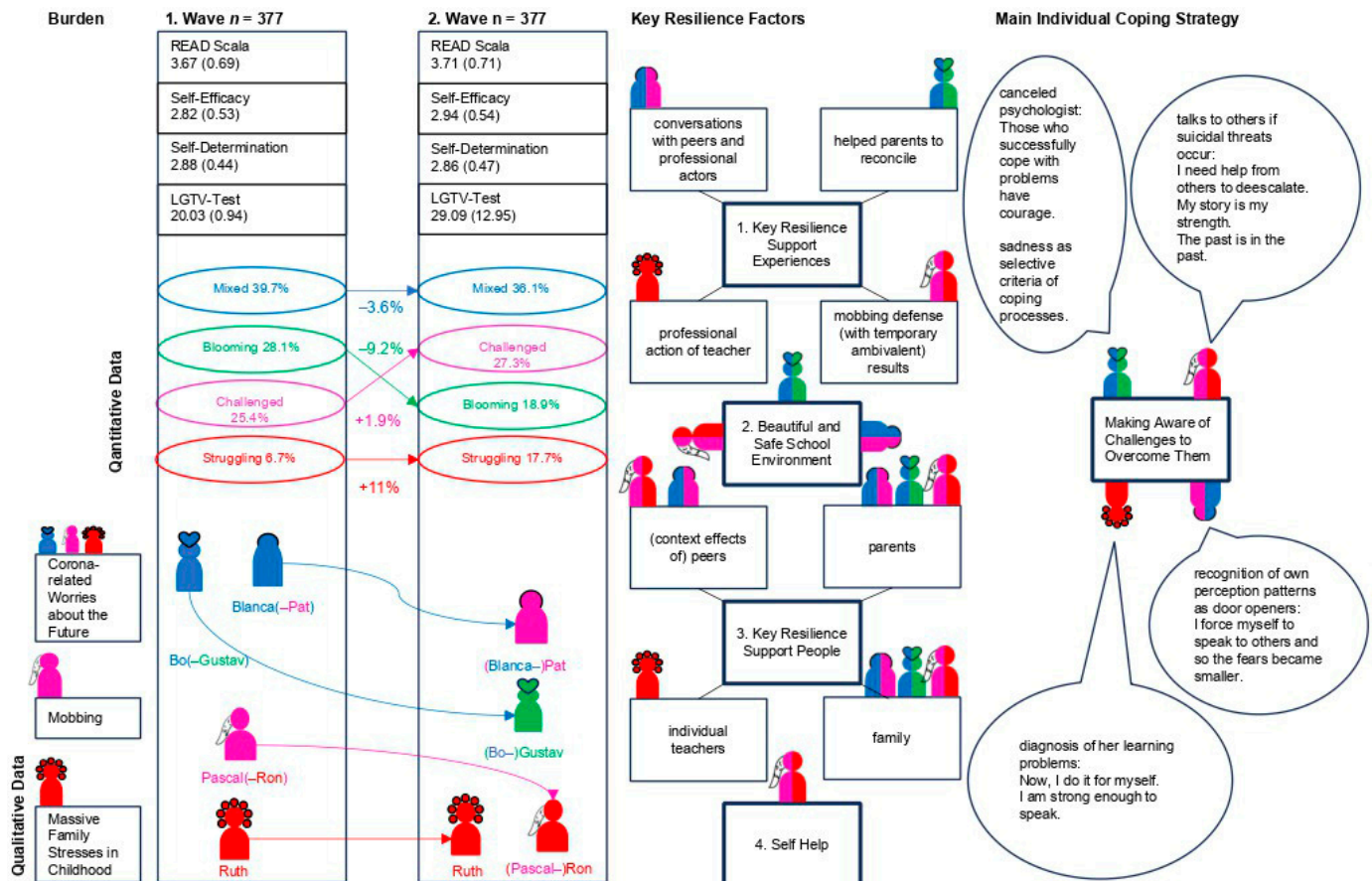


Figure 4. Joint Display.

Focusing on development over time and regarding COVID-19 as a context feature during wave 2 and the timing of interviews, the joint display (see Figure 4) shows (from left to right) (overcome) burdens, the quantitative movement between the two waves, the key resilience factors, and the main individual coping strategies (ability, process, and resources), and the pupils referred to managing not only burdens but also everyday coping.

Three of the pupils, Bo-Gustav, Blanca-Pat, and Pascal-Ron, moved between classes; two of these advanced (Bo-Gustav, Pascal-Ron), and one descended (Blanca-Pat). The fourth remained in her class (Ruth).

In addition, the two (Pascal-Ron, Ruth) who reported overcoming detailed and extensive former massive stresses ascended to the challenged class, i.e., they showed, in sum, high(er) levels of supportive resilience indicators. Blanca-Pat descended from the mixed class to the “low-low” class, i.e., her academic performance declined. At the same time, she was the only one who did not refer to COVID-19 as a cause of worry about her professional future (cf. left column of the joint display “corona-related worries about the future”). Is this because the other three were more aware of the problems with finding internships, leading them to mention it as a cause for future worries?

### 3.2.1. Burdens

The burdens column mentioned the global pandemic crisis in which the current state of research regarding associated risks is still inconsistent. Massive burdens were mentioned in the interviews, which can be classified as developmental risks in childhood.

Pascal-Ron has successfully, partly ambivalently, coped with three major stresses: (a) he reacted to years of bullying on the way to school by immersing himself in music (via headphones), which made him aggressive but allowed him to cope with everyday school life; (b) he slipped into drug abuse in a circle of teenagers; and (c) he successfully

confronted a money collector group of boys with verbal positioning, followed by activities of negotiation such as the announcement that he would seek parental and school help.

He positioned himself critically toward outcome dimensions through his aggressiveness and claimed the right to self-defense if his boundaries had been violated. This weighing is reflected especially in the ambivalence of his first coping strategy to the bullying. He realized that this was not a good approach and recognized that it may have kept him from doing well in the performance area—a fact that points to the intra-individual variability of resilience. At the time of the interview, martial arts, which accustoms one to challenges, provided him with a means to coping with stress because there he could bind himself to challenges.

Ruth reported two drastic biographical experiences as successfully overcome: Her parents took up different roles. She talked about her retraining odyssey due to her learning slowness in primary school. Thanks to parental intervention, she retrained from the persistent failures of maladaptive teaching. In a new school context that her parents negotiated, Ruth found an accurate diagnosis from professional actors and individualized learning opportunities from teachers, which led to a positive turnaround of her academic self-image. She emphasized the importance of resources from a specific teacher (not teachers in general): “And then I got into the upper school and with [...] Mrs. Müller you can always work at your own pace. [...] I simply notice that since I’ve had this, since I no longer have such pressure, [...] I always thought I wasn’t good enough or, yes, I’m not good enough for it [...] and sometimes I cried because of that, because I had such real pressure. And since I’ve been with Mrs. Müller, this button has opened and everything has improved” (MM\_I1\_S1\_CH\_P, pos. 20). As a seven-year-old, she found herself in a role reversal of responsibility when she confronted her father, who was threatening her mother with a vacuum cleaner while drunk, and stopped him. Ruth pondered her transgression of boundaries, thinking it was no way to deal with a father as a child, but sums up, like Pascal-Ron, that when a boundary is transgressed, one must also transgress boundaries such as one’s own shyness or moral standards.

The great theme in Ruth’s interview is her successful self-overcoming in the sense of personal opening and boundary management. The linguistic imagery of the rising button (MM\_I1\_S1\_CH\_P, pos. 20, 74) in thinking and her development from a bud unfolding into a flower (MM\_I1\_S1\_CH\_P, pos. 86), which a teacher reported back to her, reflect this.

Both these pupils and Bo-Gustav, as well as Blanca-Pat, did not talk about the massive burdens they had overcome, but they refer to *corona-related worries about the future* while mentioning current risks toward the end of the interview. The young people clearly attributed these worries to upper-grade pupils. They must find an internship to gather experiences in possible later vocational training and were confronted with problems of finding an internship because of COVID-19 measures and non-transparent cancellation arguments they did not trust. This shows the [6] (p. 100) higher risk of elder youths as a result of their greater awareness of consequences due to their higher development.

Blanca-Pat did not talk about massive burdens. Her guiding theme in the interview was “the shy one” who learned to overcome herself through practice—including a reality check when one realizes one’s inhibitions are thoughts in one’s head about possible unpleasant reactions from others that do not occur. As a strategy, she described her compulsion to overcome herself, which led to becoming self-efficient through positive experiences.

Interestingly, Blanca-Pat, who descended into the lowest class, did not mention similar problems with internships. Is this because, while stating that she contrasts her own assumptions about reality with a reality check, she seems to act very much on her own in general and, thus, missed the experience of exchanging different perceptions as the right column shows? (Or is Blanca-Pat less able to assess some things realistically because of her academic capacity?) On the other hand, she explicitly explained her parents and family as natural *key resilience support people* (cf. next-to-last column).



### 3.2.2. Key Resilience Factors

The category *key resilience factors* unites four subcategories: *key resilience support experiences*, *beautiful and safe environment*, *key resilience support people*, and *self-help*.

The subcategories of the *key resilience support experiences* and *key resilience support people* shows that families and professionals are significant to all four pupils as they belong to the most effective resilience support factors [7]. Furthermore, puberty is a phase in which the social dynamics in peer relationships are a relevant field of development. They make a difference.

While the subcategory *key resilience support experiences* reveals experiences the pupils drew strength from in the sense of self-efficacy, nominations within *key resilience support people*, *beautiful and safe environment*, and *self-help* show the well-known three resilience dimensions of individual, social, and structural resources in multisystemic entanglement and the relevance of the school environment as highly effective resilience support [7].

As a *key resilience support experience*, Bo-Gustav named himself once as a coping assistant according to a parents' dispute (MM\_I1\_S2\_CH\_P, pos. 12) and as one who has consoled a classmate whose cousin had died while his parents were traveling without mentioning any concrete strategy in both cases. Interestingly, he reported himself as a helper in answering the question of overcoming his burdens.

Additionally, Bo-Gustav referenced a *beautiful nature school environment* as a resilience factor. His pictorial reaction when asked about the school as a resource was "Trees are important, they provide a clean environment and let the sunshine for one even when it rains" (MM\_I1\_S2\_CH\_P, pos. 59).

As *key resilience support people*, Bo-Gustav ranked parents and other family members of his generation (!) after classmates and teachers and before psychologists in general. He prioritized teachers and parents (MM\_I1\_S2\_CH\_P, pos. 20). At the same time, he decisively identified parents as the source of school-related problems; for example, they were angry about bad grades and increased their performance expectations (MM\_I1\_S2\_CH\_P, pos. 87).

Pascal-Ron's *key resilience support experiences* lay in his already reported *mobbing defenses (with temporary ambivalent results)*, combined with his reflection on these ambivalent strategies and the criteria-related differentiation of especially aggressive reactions, which, in his opinion, are only justified after personal borders are violated. His statement of stress habituation as a cause of lower stress experience revealed another ambivalence (MM\_I1\_S3\_CH\_P, pos. 22, 26, 60).

Pascal-Ron claimed a *safe school environment*, not just in the sense of a psychologically peaceful context, as his statements among the category *key resilience support experiences* and *key resilience support people* showed. He also required a physically peaceful school environment (MM\_I1\_S3\_CH\_P, pos. 54).

As *key resilience support people*, he described the (*context effects of*) *peers* sliding into drugs in appropriate circles as well as specific teachers, as Ruth too emphasized. He had fun with one teacher in difficult times in life, one who had "a feeling for [...] young people [...], who maybe didn't have the best backstory" (MM\_I1\_S3\_CH\_P, pos. 66).

Pascal-Ron's *parents* and *family* also turned out to be reliable interlocutors (MM\_I1\_S3\_CH\_P, pos. 68, 74), although, or because, he extensively reported *self-help* as a *key resilience factor*, as it was reported during his experiences of the money-collecting stalking when he talked about his refusal of being threatened and announced his parents' intervention if his own words did not work. It seems as if parents and family are the background for his development of autonomy and self-efficacy and empowered him equally to navigate and negotiate.

Ruth's *key resilience support experience* was founded clearly in her change in school, initiated by her parents, due to insufficient teaching methods. The new school context with its professional actors gave Ruth an applicable diagnosis and individualized learning tasks, supplemented by Mrs. Mueller, a teacher who addressed Ruth in her enormous development and offered her words and metaphors: the flowered bud. Here too, individual teachers made the difference as *key resilience support people*. The multisystemic view on

resilience processes obviously appeared in Ruth's case: different contexts with different professional actors led to a success story.

Blanca-Pat referred, among *key resilience support experiences*, to *overcoming inhibited thoughts* "That I have, which are actually not necessarily true in the end" (MM\_I1\_S4\_CH\_P, pos. 15), such as being afraid of being laughed at (MM\_I1\_S4\_CH\_P, pos. 4, 7, 13, 15–16), and being free to ask if she needs help to understand something, especially teachers and in particular in low-threshold ways like social media groups, individual meetings with a teacher (MM\_I1\_S4\_CH\_P, pos. 89), anonymous problem notations in the class council without teachers (MM\_I1\_S4\_CH\_P, pos. 87), or after reassurance in small groups (MM\_I1\_S4\_CH\_P, pos. 23).

Blanca-Pat required room designs like wall hangings and open blinds (MM\_I1\_S4\_CH\_P, pos. 61) as a *beautiful school environment* to feel comfortable.

Blanca-Pat stressed among *key resilient support people* her *parents and family* as they let her move without pressure (MM\_I1\_S4\_CH\_P, pos. 101). From her experience, the supportive quality of *peers* depends on the resilience and supportive behavior of peers: in her experience, (fewer) good friends and corresponding (un)productive learning behavior were related (MM\_I1\_S4\_CH\_P, pos. 97).

### 3.2.3. Main Individual Coping Strategies

The *main individual coping strategy* shows that although resilience should not be reduced to individual capacity, at the same time, it cannot be developed without processes driven by the individual, like navigation and negotiation.

The main strategy of problem-solving all highlighted was the necessity of *becoming aware of challenges to overcome them*. To admit problems is a well-known strategy in overcoming trouble [42] (pp. 565, 568). It initially requires unpleasant or insecure feelings as long as the question whether one will have enough (individual, social, and structural) resources to cope with the challenge remains open. It constitutes a turning point for starting navigation or negotiation—depending on one's level of self-efficacy.

The examples of successful strategies the young people used until now were self-knowledge, self-perception, motivation, competence, autonomy, and biography work.

Bo-Gustav's statements testified that he was a sensitive (self-)perceiver as his interview indicated. In a courageous decision, he once ended appointments with a psychologist, a sort of reverse negotiation, because he did not find the treatments helpful for him and "to do everything for [myself] and so not to be afraid" (MM\_I1\_S2\_CH\_P, pos. 16). Courage seemed to be a decision and part of problem solving. Another approach he stressed was self-awareness of feelings and body language, especially sadness (MM\_I1\_S2\_CH\_P, pos. 55, 63), as starting points for problem solving. What makes somebody sad needs to be changed, and vice versa: if somebody has changed to being happy again, Bo-Gustav takes this as an indicator of successful coping as well as a higher frequency or intensity of conversations with others and thus a developed or regained openness (MM\_I1\_S2\_CH\_P, pos. 32–34). Notably, Bo-Gustav did not mix up reasons for sadness: he classifies mourning as a process appropriate to an experience of loss (MM\_I1\_S2\_CH\_P, pos. 49).

Pascal-Ron answered in the third person when asked for successful coping strategies: if suicidal threats occur, talk to others because their help is needed to deescalate (MM\_I1\_S3\_CH\_P, pos. 60). He classified talking to others even as successful coping. It remains open if he chose the third person to dissociate himself from this topic or it shows him in his engagement for others to do good—his experience of temporary maladaptive coping by immersing himself in music that finally led him to aggression would be understandable.

He managed to deal with his "not the best backstory" by leaving the past in the past by again presenting his story as strength and motivation (MM\_I1\_S3\_CH\_P, pos. 48), although he saw connections between this and "what type of person you are" (MM\_I1\_S3\_CH\_P, pos. 26)—one who "takes everything emotionally" or "just sits there and says, 'Yeah, okay, it's in the past'" (MM\_I1\_S3\_CH\_P, pos. 26). One could say he framed his first failing experiences as another narration that empowered him.

Blanca-Pat described a strategy comparable to Pascal-Ron's when she recounted relying on herself to overcome a problem. Focusing on the individual dimension, she found her way by self-compulsion as forced (MM\_I1\_S4\_CH\_P, pos. 15) to continue speaking to others and gathering additional positive experiences. A precondition for this self-motivation was the recognition of her own self-image patterns as a door opener to test oneself in the field, which previously held anxiety.

Moreover, she had good experiences with structuring her work by drawing up a plan, prioritizing what needs to be carried out, and mentally shelving what is outstanding (MM\_I1\_S4\_CH\_P, pos. 21). This meets the meaning of a structured lifestyle as a resilience factor [12]. However, up to the time of the interview, she had not succeeded at higher levels of resilience support factors or grades.

Ruth is the only one who clearly referred to social and institutional resources like professional acting as a milestone in finding more autonomy, competence, and self-efficacy. The right diagnosis of her way of learning and the experience to be successful through adaptive learning offers (MM\_I1\_S4\_CH\_P, pos. 16) freed her. Indicators for persistent coping strategies concerning self-image and school performance comprised her motivation to learn now for herself and no longer for her mother (where this changed target perspective may be connected to her age as she had her later career in mind) (MM\_I1\_S4\_CH\_P, pos. 36, 84). She now felt strengthened to speak to and in front of others through developed social abilities. Coming back to her massive family burdens, it seems that she had this strength already in an exceptionally threatening situation as a seven-year-old girl but in another area of burdens. Resilience is context-specific here, too.

#### 4. Discussion

In order to attain the meta-inference, findings from each paradigm were set side by side by two researchers of the team. The amalgamation of the qualitative and quantitative data significantly augmented the value of both datasets, serving to elucidate, contest, and affirm the results of each respective dataset. Therefore, the development of a meta-inference by creating various claims [30] was the foundation for this discussion. In line with previous insights [6], our study reveals that support factors and school success generally commence at low levels for most students, exhibit modest progression over time, and depend highly on teacher support [9,15]. In a broader understanding of resilience, this could be related to puberty as a vulnerable phase in the normative sense [19], in which development-related anxiety and depression can occur, leading to performance problems. The COVID-19 pandemic may have influenced school performance as an additional nonnormative challenge [3,6,21–23]. However, it is important to pursue further the question to what extent school offers contextual conditions appropriate to puberty because school claims to be a place where young people (must) fulfill their human right to free education [15] and to enable children to participate in society. One individual demonstrated consistency within the struggling category, whereas the other transitioned from challenged to struggling. This result supports the insight into the context-specificity of resilience [7,8]: it is not a universal phenomenon but is characterized by the specific conditions cited.

A strikingly high proportion of students (approximately 65%) in our sample showed low levels of supportive indicators, with negligible changes over time. Considering the role of the COVID-19 pandemic, supportive indicators were scarce. However, for the group with initially high support, a downward trend in academic success was noticeable. Like Hjemdal et al. [12], we were able to identify, particularly among those who initially enjoyed both high support and academic success, that a reduction over time became apparent. For those in supportive environments, there was an observable shift from blooming to challenged classifications, implying that high support did not guarantee sustained academic achievement, and supportive indicators and educational success seemed to evolve independently of each other. This result supported the assumption expressed by Schwarzer and Warner [10] that beliefs must be translated into actions to achieve success. For example,

two of the students reported unsuccessful or, in hindsight, temporary but ambivalent solutions to their problems.

Other participants in the qualitative data did not show this trend. Two interviewed participants moved up into a higher class (blossoming and struggling, respectively), and one stayed in the struggling class. Yet, a low-support environment, as Theron [14] and Kassis et al. [5] identified, consistently links to poor academic success, indicating that they may remain stable in their respective categories. These findings suggest that while high support might not invariably lead to high academic success, lower support systems correlate with diminished educational outcomes [5]. Moreover, there is neither a class low/high nor a student with low supportive indicators and high academic success. This result is supported by the assumptions of self-determination theory, claiming that supporting factors for autonomy, competence, and social connection are important components for the development of navigational skills [11]. Curiously, within contexts in which support is not intensive (mixed and challenged groups), consistently moderate to low academic success is recorded over time. Though having high support does not provide clear predictions for the trajectory of academic success, the continuity of low supportive tends to solidify a pattern of low educational success.

When considering the role of the COVID-19 pandemic [6], it was viewed primarily as a looming issue tied to academic trajectories as opportunities for internships became scarce. Following Graupensberger et al. [21,22], this perception of the global pandemic may explain the relative stability observed in students during the data collection period despite the pandemic's eruption. On the one hand, the immediate impact on well-being was overshadowed by concerns for prospects. On the other hand, this perceptual capacity reflects the developmental background of young people when coping with problems [6].

Examining the development of self-efficacy more closely, we observed a slight improvement over the same 20-month span. Adolescents perceived the exercise of self-help and the utilization of intrinsic resources as integral to self-efficacy. As Kassis et al. [5] already showed, processing negative past events and support from others are actions related to enhanced self-efficacy, with courage playing a pivotal role. These results correspond to the statements of self-determination theory [11] as well as the concept of self-efficacy [10]: achieving autonomy and competence is based on relevant experiences of effectiveness, which are attributed to one's own person, as well as on subjective successes [19]. The extent to which the successes meet normative criteria is not left unmentioned by two of the interviewees: they assess (temporary) ambivalent strategies as having partial success, discuss them in terms of values, or reframe socially less accepted behavioral patterns in their past as motivation.

Social resources, including familial and academic environments, are recognized as influences on self-efficacy. Parental support, though supportive, can dualistically induce educational stress. This is where the multisystemic approach [6] (p. 95) meets the need to consider the acceptance of the actions and thus the perspective of young people [17]. Canceling appointments with a psychologist because they did not help the person in their own experience and criticizing the structurally anchored cooperation between parents and teachers because parents are experienced as the cause of school problems mark two different concrete areas of the multisystemic perspective. Notably, we validated that only certain teachers are perceived as bolstering self-efficacy [5,43], particularly those who form personal connections and foster space for present and future growth. Peer relationships also exhibit dual effects on behavior and learning, which again confirms the context specificity of resilience (support).

## 5. Conclusions

The study's insights resonated with the school's commitment to the best possible development of pupils in terms of their personality and performance [16], not without touching on issues of social justice. According to the students interviewed, this help was experienced concretely in the sense of Masten's ordinary magic [1] in the competent, profes-

sional actions [9] of individual teachers who offer individualized support and appreciative perception. Thus, school was experienced in the ambivalence of a safe and supportive, as well as a risky (!), place, which, in contrast to ordinary magic, made extraordinary measures necessary. The COVID-19 pandemic as a contextual feature during the survey period may have influenced the identified resilience patterns and the patterns comparison between the pre- and the post-pandemic phase.

Finally, we confirmed previous insights [4,43] that individual supportive indicators contribute to a well-rounded understanding of self-efficacy, demonstrating that personal narratives can transform past adversities into sources of strength and motivation. Navigating through stressful situations [5] with learned coping strategies and differentiated tools marks the development of resilience one step at a time.

Improving home and school environments and the interaction of these two settings is the most effective way of enhancing resilience [4,7,43]. Following previous insights by Kassis et al. [5], it remains an ongoing task for the school system to create space for appreciation, support, and respect for pupils as agents of resilience [8,17]. It was solely through the integrative process of synthesizing quantitative and qualitative data that it became feasible to generate new insights while corroborating existing research findings, thereby affirming the importance of a mixed-methods approach.

## 6. Limitations

The current research produced noteworthy results and possessed various strengths, including the utilization of a longitudinal sample and the application of person- and variable-centered analyses, which involved the inclusion of adolescents recruited from the general population. Nonetheless, there are a few limitations that require attention.

By incorporating two data waves, we consider that we initiated the study effectively; however, a genuine longitudinal study typically necessitates a minimum of three waves. This limitation is connected to our study's exclusive focus on the manifestation of resilience outcomes, without an examination of the underlying processual factors contributing to the four identified resilience outcomes. Due to the constraints of our available data, we were only able to employ a two-wave longitudinal design, preventing us from analyzing these processes. The COVID-19 pandemic as a contextual feature of a global, nonnormative risk during the survey period resulted in a variance in the survey methods (on-site and digital).

The sample was representative, yet it was exclusively drawn from a single country, Switzerland. Consequently, it is imperative to exercise caution when interpreting the results as they may not apply to diverse countries. Conducting an international study on the subject would be essential for broader generalizability.

The act of dichotomizing data for latent class analysis (LCA) and latent transition analysis (LTA) consistently imposes limitations on the findings. This process involves dividing participants into two groups through a median split, artificially reducing the standard deviation, as previously noted by Iacobucci et al. [44] and Rucker et al. [45]. Though this dichotomization is an essential step for conducting LCAs and LTAs, it is important to acknowledge its potential impact.

In addition to this, we also dichotomized two sociodemographic predictors, namely migration background and gender. Such formal categorization, while a common practice, does not align with adolescents' self-identification, as highlighted by Horvath [46], and results in a loss of information.

Concerning the interviews, especially the willingness to talk about overcoming acute problems, which was named as a coping resource in the interviews, participation in the interview was voluntary, and such young people who came forward possibly brought this openness with them.

It must be mentioned that the three students who recorded positive profile pattern developments or maintained the level of profile pattern attended the same class at the time of the survey, although no concrete indications of contextual characteristics of class membership could be identified that influenced individual development. All four students



addressed the important personal resources of individual teachers, which the students perceived and discussed in a supportive manner.

Finally, the researcher's bias in terms of resilience development is present, but this could be mitigated to the collective reflexivity (cite, new paper), particularly during the development of the meta-inference. Of course, this limits the generalizability of this research study but led to the generation of new insights.

**Supplementary Materials:** The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/educsci14050456/s1>.

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**Institutional Review Board Statement:** The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of Faculty of Arts and Social Sciences, University of Zurich, 10 April 2019).

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Data are available on request by the first author.

**Conflicts of Interest:** The authors declare no conflict of interest.

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