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Teacher Turnover from a Resilience Perspective:

Evidence from North Rhine-Westphalia

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TEACHER TURNOVER FROM A RESILIENCE PERSPECTIVE: EVIDENCE FROM NORTH RHINE-WESTPHALIA

1. Introduction

One in ten teachers is leaving the profession prematurely – a striking trend that is becoming increasingly apparent within the German school system. The acute teacher shortage, especially in North Rhine-Westphalia (NRW), has evolved beyond a mere staffing issue; it now reflects systemic overload, structural deficiencies, and a lack of sustainable support. As of June 2024, more than 6,000 teaching positions remained vacant in the region (Ministry of Education NRW, 2023), highlighting persistent under-resourcing. Simultaneously, recent estimates indicate that approximately 10% of teachers in Germany are leaving the profession early (German Teachers' Association, 2023; Dohmen, 2025). This situation is exacerbated by a declining[1] number of students choosing to enter teacher training programs (Bertelsmann Stiftung, 2022), which significantly increases the workload for those who remain in the profession. In a 2023 survey conducted by the Education and Science Workers' Union (GEW: Gewerkschaft Erziehung und Wissenschaft) of NRW, nearly 24,000 teachers rated their perceived overload at an average of 8.2 out of 10 points (GEW NRW, 2023). Commonly cited reasons included increasing demands in daily school operations – especially administrative tasks, larger class sizes, and the lack of colleagues who might provide relief.

The situation is compounded by a modest increase in student numbers and a decline in enrolments in teacher training programs (Bertelsmann Foundation, 2022). This widening gap between the demand for and supply of qualified educators is deepening systemic tensions. The consequences for those who remain are clear: larger class sizes, diminished opportunities for individualized instruction, and an increased organizational burden. Such working conditions frequently lead to both psychological and physical exhaustion. Empirical studies confirm that teachers are exposed to significantly higher levels of stress compared to other professions (Wesselborg & Bauknecht, 2023).

This article does not primarily focus on the widely discussed and statistically documented teacher shortage. Rather, it centers on the phenomenon of teacher turnover, which has increasingly become a topic of concern in both federal and state policy debates (Spiegel, 2025). Various causes of this turnover have been identified, including occupational stress, inadequate working conditions, a

[1] The number of students entering teacher training programs has also declined in cologne, but has now stabilized and remains at a low level (Zentrum für Lehrer*Innenbildung, 2025).

perceived lack of appreciation (Druschke & Seibt, 2016), and increasingly limited part-time work options (dpa, 2025). Research on teacher attrition is still scarce and has predominantly concentrated on individual-level causes, particularly focusing on how (prospective) teachers can be supported in building psychological resilience to withstand the challenges of the school system (Frick, 2021; Kardinal & Lange, 2022; Kraft et al., 2022). However, this exclusive emphasis on individual resilience appears to be insufficient. To fully understand the issue of teacher turnover, it is crucial to expand beyond this individual-focused perspective and account for the stressful structural conditions within schools. This study adopts such an extended approach by incorporating team and organizational resilience in addition to individual resilience.

2. Research Objective - The Relationship Between Teacher Turnover and Resilience

Understanding the root causes of teacher turnover is of central importance, as frequent staff changes can significantly impair instructional quality, disrupt continuity in the school day, and limit students' learning and developmental opportunities (Gibbons et al., 2021; Jensen, 2021). High turnover also poses risks to school culture, undermines pedagogical continuity, and increases the workload of remaining teachers (DeMatthews et al., 2021). Developing sustainable solutions therefore requires to examine both the causes and consequences of turnover. The objective of this study is to investigate how resilience at the individual, team, and organizational levels relates to teachers' decisions to remain in or leave the profession. The central research question is thus: What role does resilience at different levels play in teachers' decisions to stay in or leave the profession? The findings may inform the design of health-promoting working conditions and teacher retention strategies. As studies from other sectors suggest, such an approach can yield valuable insights into professional attrition (Verlinden & Martynovych, 2024).

2.1 Individual, Team and Organisational Resilience

In the school context, individual resilience refers to a teacher's capacity to manage extreme stress and adversity without sustaining long-term harm. Given the high demands of daily school life – ranging from rising expectations and challenging student behavior to lack of support – individual resilience is regarded as a critical factor in teachers' long-term retention (Frick, 2021; Kardinal & Lange, 2022; Kraft et al., 2022).

Team resilience refers to the collective ability of a group to confront challenges together and support one another (Schulte et al., 2021). In schools, team resilience may manifest in collegial support during lesson planning, mutual sharing of burdens, standing in for each other during crises, and shared responsibility in managing difficult student behavior. In this study, team resilience was assessed using indicators measuring perceived collegial support, trust within the team, collaborative problem-solving capacity, and openness to feedback. These dimensions were examined for their protective role against stress and their stabilizing effect on teachers' retention. Organizational resilience refers to a school's capacity to respond flexibly and sustainably to internal and external crises, to anticipate challenges, and to prepare accordingly (Schulte et al., 2021, p. 1). Applied to schools, this includes adapting to teacher shortages, managing acute crises (such as COVID-19 lockdowns), and implementing strategies to reduce staff burden.

2.2 Focus: Team Resilience and Teamwork in Schools

Team resilience remains largely underexplored in the educational field, partly because teachers are often not perceived – or do not perceive themselves – as working in teams. Instead, a school-specific culture, grounded in "profession-specific attitudes and behavioral norms" (Fabel-Lamla & Gräsel, 2022, p. 7), and closely tied to the organizational structure of schools, frequently hinders true collaboration and teamwork. Teachers primarily see themselves as part of the broader faculty, cooperating in certain contexts without necessarily functioning as a cohesive team (Steinkühler, 2021, pp. 31ff). Accordingly, collaboration tends to be situational and event-driven (Steinkühler, 2021, pp. 31ff).

In practice, the term "teamwork" is rarely used; rather, "collaboration" is more commonly applied (Fabel-Lamla & Gräsel, 2022). Teachers often work autonomously and are seen as "lone warriors", a dynamic deeply embedded in the school system and its professional culture (Lortie, 1975; Altrichter, 1996). Gräsel et al. (2006) identify three forms of collaboration: exchange (e.g., sharing materials), co-planning (e.g., jointly designing lessons), and co-construction (e.g., jointly developing new content). These vary in intensity and complexity, and their impact depends heavily on the local school context (Gräsel et al. 2006, p. 200). Structural factors strongly influence collaboration. As a loosely coupled system (Weick, 2009), the school allows for individual autonomy but makes binding collaboration more difficult. Without dedicated time slots, shared goals, or administrative support, collaborative efforts are often limited to short-term initiatives (Spieß, 2004). Additionally, empirical studies indicate that teachers differ in their perceptions of collaboration. While some experience it as a source of support, others perceive it as added burden or loss of autonomy (Werner, 2012). Accordingly, schools differ significantly in their collaboration profiles (Kunz & Halbheer, 2011).

2.3 Research Question

This study is grounded in the assumption that resilient teams and school organizations can offer a sustainable response to the challenges of teacher shortages and turnover. Analyzing teacher attrition through the lens of individual, team, and organizational resilience allows for a more holistic understanding of the issue and provides a basis for targeted interventions.

The present study investigates the reasons behind high teacher turnover through a standardized survey conducted in Spring 2024, which included both currently practicing teachers and those who have left the profession. To assess resilience, the study employed the “Questionnaire for Individual, Team, and Organizational Resilience (FITOR)” developed by Schulte et al. (2021), which operationalizes these three dimensions.

The aim is to examine how resilience influences teachers' decisions to remain in or leave the profession. While previous research has often focused on individual resilience as the primary factor for retention, this analysis seeks a more nuanced understanding by including contextual team and organizational factors. This article presents the initial results of the project, specifically examining (1) how teachers’ resilience compares to that of the general population, and (2) whether there are significant differences in individual, team, and organizational resilience between active teachers and those who have exited the profession.

3. Methodological Approach and Analyses

The data for the empirical analysis were collected as part of the “Resilience in the School Context” project, jointly conducted by the Center for Teacher Education at the University of Cologne (ZfL) and the Catholic University of Applied Sciences North Rhine-Westphalia (katho NRW) from April to June 2024. The study employed a mixed-methods design, starting with focus group discussions involving current and former teachers. These informed the development of a comprehensive questionnaire closely aligned with teachers' everyday experiences.

The questionnaire enabled systematic collection of data on working conditions, perceived stress levels, support structures, coping strategies, and formative positive and negative events in everyday school life. This allowed for an empirical analysis of protective and risk factors related to teacher retention.

3.1 Sample

A total of 1,178 teachers participated in the survey. The response rate cannot be determined, as the survey was distributed using a snowball sampling method. Specifically, schools and individual teachers were contacted through the networks of the teacher training region of Cologne and the ZfL, following prior consultation with relevant administrators. The survey was also promoted via the ZfL's social media channels and by a well-connected coach who works with former teachers.

According to the German Federal Statistical Agency (Statistisches Bundesamt), 180,340 teachers were employed at general education schools in North Rhine-Westphalia during the 2023/2024 school year (Statistisches Bundesamt 2024). This number includes both full-time and part-time employees but excludes hourly contractors and covers both public and private schools. Against this backdrop, it is reasonable to assume that our sample represents approximately 1% of the total teacher population in the state.

A comparison with official statistics reveals that- with two exceptions – the distribution of teacher certification types in our sample deviates only slightly from that of the overall teaching workforce in North Rhine-Westphalia in 2023/2024. The data show an overrepresentation of teachers trained for upper secondary education (general subjects), i.e., those working at grammar schools and comprehensive schools. This group accounts for 44.2% of the sample, compared to 34.5% in the official statistics (Statistisches Bundesamt, 2024). Another notable deviation concerns teachers trained for upper secondary vocational subjects or employed at vocational schools: 9.4% in our sample versus only 0.2% in the official data. The distribution across other teaching certification categories aligns more closely with official statistics: 20.1% of respondents were trained for primary education (Statistisches Bundesamt, 2024: 19.4%), 10.0% for special needs education (Statistisches Bundesamt, 2024: 11.7%), and 8.8% for lower secondary education across all school types (Statistisches Bundesamt, 2024: 11.3%).

Regarding gender, age, and employment status, our sample roughly reflects the demographic structure of the teaching workforce in North Rhine-Westphalia. Of the participants, 82.0% identified as female (Statistisches Bundesamt, 2024: 73.6%) and 17.4% as male (Statistisches Bundesamt, 2024: 26.4%). In terms of age, the largest group consisted of teachers aged 40 to under 50 years (34.8%; Statistisches Bundesamt, 2024: 28.3%), followed by those aged 30 to under 40 (33.2%; Statistisches Bundesamt, 2024: 31.9%), and those aged 50 to under 60 (22.2%; Statistisches Bundesamt, 2024: 22.3%). The youngest (under 30) and oldest (60 and over) age groups made up about 5% of the sample each (Statistisches Bundesamt, 2024: 8.0% and 9.5%, respectively). As for employment status, 65.8%

of the surveyed teachers were employed full-time (Statistisches Bundesamt, 2024: 56.7%), and 34.2% part-time (Statistisches Bundesamt, 2024: 43.3%).

Table 1: Sample description

	N	%
Gender		
Female	966	82.0
Male	205	17.4
Missing	7	0.6
Age		
under 30	58	4.9
30 to under 40	391	33.2
40 to under 50	410	34.8
50 to under 60	262	22.2
60 and older	54	4.6
Missing	3	0.3
Teacher groups		
General upper secondary education	521	44.2
Primary education	237	20.1
Special needs education	118	10.0
Lower secondary education across all school types	104	8.8
Upper secondary vocational education	111	9.4
Missing	87	7.4
Type of employment		
Beamte (Civil servant)	1,071	90.9
Employees	99	8.5
Missing	8	0.7
Scope of Employment		
Part-time	403	34.2
Full-time*	775	65.8
Missing	-	-
Work Experience		
up to less 5 years	109	9.3
5 to unter 10 years	222	18.9
10 to under 20 years	463	39.3
20 years and longer	379	32.2
Missing	5	0.4

Note: * Teachers with a job scope of 80 to 100% are considered full-time employees. Source: “Resilience in the context of school”, n = 1,178

The sample also varies in terms of professional experience: 71.5% had more than 10 years of teaching experience, 18.5% between 5 and under 10 years, and 9.3% had up to 5 years. Comparable official data on years of experience are not available. Table 1 provides an overview of the sample characteristics.

Although some deviations are evident in specific categories, the overall structure of the sample suggests it can be regarded as sufficiently representative of the teaching population at general education schools in North Rhine-Westphalia.

3.2 Evaluation of the resilience concept

An essential component of the survey focused on assessing teacher resilience. As previously outlined, resilience was measured in accordance with the framework proposed by Schulte et al. (2021), which identifies three levels relevant to the occupational context: the individual, team, and organizational levels (Schulte et al., 2021, p. V). The FITOR questionnaire operationalizes these dimensions through ten specific resilience facets: stress resistance, creative flexibility, self-efficacy, optimism, error culture, composure, perspective-taking, coping with failure, vision, and perseverance. These facets were assessed using a six-point Likert scale (Schulte et al., 2021). For each of the three resilience levels, we calculate an index to measure the individual (M = 3.89; SD = 0.78; α = 0.85), team (M = 3.99; SD = 0.90; α = 0.94), and organizational resilience (M = 3.52; SD = 0.99; α = 0.94) of the respondent. Higher mean values indicate higher levels of perceived resilience among teachers.

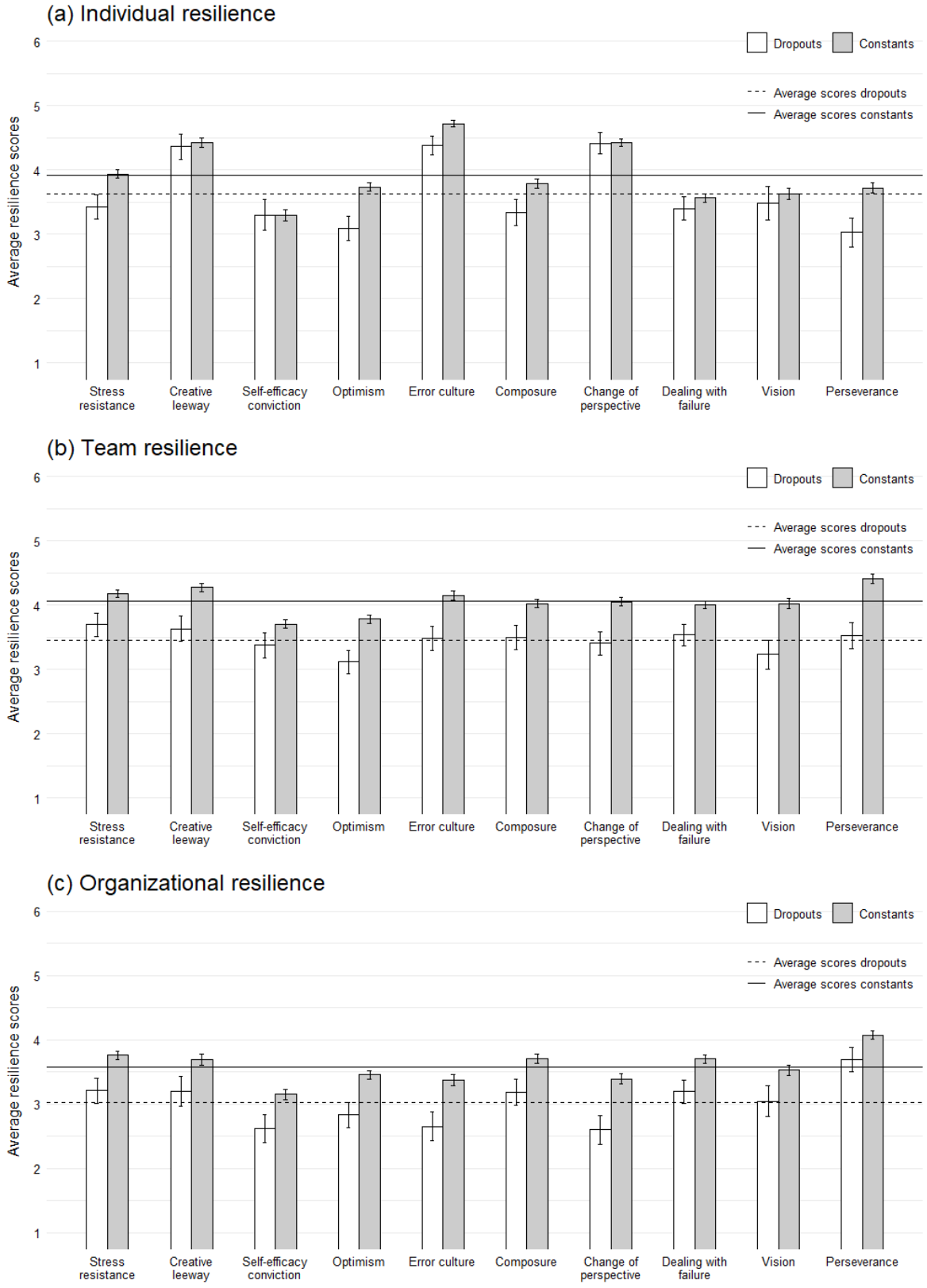
This article first investigates whether teachers‘ resilience differs significantly from that of the general population. To this end, we compared the average resilience scores of the teachers with those of the general population, using data from the study by Schulte et al. (2021). As shown in Table 2, teachers reported lower scores than the general population across all three resilience dimensions. While the difference in team resilience is relatively small, the disparities in individual resilience and organizational resilience are more pronounced. A gender-disaggregated analysis confirms this overall trend.

Table 2: Resilience scores across individual, team, and organizational resilience of teachers and the general population

	Teachers			General population		
	Total	Female	Male	Total	Female	Male
Individual	3.89	3.82	4.24	4.46	4.39	4.60
Team	3.99	3.96	4.10	4.33	4.34	4.37
Organizational	3.52	3.49	3.67	4.30	4.29	4.34

Note: Mean values on a 6-point scale (1 = “low resilience” and 6 = “high resilience”). For the general population, the mean values represent averages calculated from two independent samples ($n_{(total)}$ = 347 and 376, $n_{(female)}$ = 132 and 195; $n_{(male)}$ = 129 and 140). Source: Schulte et al. (2021, p. 26-27); “Resilience in the context of school”, n = 1,178

Figure 1. Resilience of constants and dropouts at the (a) individual, (b) team and (c) organizational level and 83% confidence intervals



Note: Mean values on a 6-point scale (1 = “low resilience” and 6 = “high resilience”). Source: “Resilience in the context of school”, n = 1,178

3.3 Turnover and Resilience

Following the comparison with the general population, the analysis now turns to the second central research question: To what extent does resilience differ between currently employed teachers (hereafter referred to as "constants") and those who have left the profession, former teachers (hereafter referred to as "dropouts")? Figure 1 presents the mean scores across individual, team, and organizational resilience scales, broken down by specific resilience facets for both groups.[2]

The results show that the two groups differ across all three levels – individual, team, and organizational – with the most pronounced differences found at the team and organizational levels (cf. Figure 1). On the individual level, constants exhibited an average resilience score of 3.94 (83% CI [3.88 – 3.97]), whereas dropouts reported a lower average of 3.62 (83% CI [3.49 – 3.76]). Notable disparities emerged in the facets of "optimism" (constants: 3.74; 83% CI [3.67 – 3.80]; dropouts: 3.09; 83% CI [2.90 – 3.28]) and "perseverance" (constants: 3.72; 83% CI [3.64 – 3.80]; dropouts: 3.03; 83% CI [2.80 – 3.26]).

More substantial differences emerged in team resilience: Constants achieved an average score of 4.06 (83% CI [4.00 – 4.11]), while dropouts reached only 3.45 (83% CI [3.30 – 3.60]). Particularly prominent were differences in the facets "optimism" (constants: 3.78; 83% CI [3.72 – 3.84]; dropouts: 3.11; 83% CI [2.93 – 3.29]), "error culture" (constants: 4.15; 83% CI [4.08 – 4.22]; dropouts: 3.48; 83% CI [3.29 – 3.67]), and "vision" (constants: 4.02; 83% CI [3.94 – 4.10]; dropouts: 3.23; 83% CI [3.01 – 3.45]).

At the organizational level, differences were also significant, although at a slightly lower overall level. Constants reported an average organizational resilience score of 3.58 (83% CI [3.52 – 3.64]), while dropouts scored 3.02 (83% CI [2.85 – 3.19]). These discrepancies were particularly evident in the subdimensions "error culture" (constants: 3.37; 83% CI [3.29 – 3.46]; dropouts: 2.65; 83% CI [2.43 – 2.88]) and "perspective-taking" (constants: 3.39; 83% CI [3.31 – 3.47]; dropouts: 2.60; 83% CI [2.38 – 2.82]).

4. Outlook

A comparative analysis of the mean resilience scores between the general population and the participants in this study reveals that teachers perceive themselves as less resilient overall. According to our data, teachers not only experience psychological exhaustion more frequently – as emphasized by Wesselborg and Bauknecht (2023) – but also perceive themselves as less able to cope with stressors and occupational demands.

[2] As suggested by Austin and Hux (2002, p. 195), we plot 83% confidence intervals, which allows us to assess "whether or not two means are significantly different from one another at the = 0.05 level".

The results also provide information about the structural conditions that either promote or hinder team resilience. Teachers frequently report that schools are not structured around team-based organizations but rather operate as loosely connected faculties. Collaboration in schools tends to be situational and event-driven (Steinkühler, 2021). This perception aligns with the theoretical framework of the school as a “loosely coupled system” (Weick, 2009), characterized by a predominance of autonomy and individual responsibility and a lack of structurally embedded collective processes. Additionally, the specific organizational nature of schools (Fabel-Lamla & Gräsel, 2022, p. 7) and Lortie’s concept of the “authority-equality pattern” (Lortie, 1975) contribute to the fact that collaboration rarely achieves the depth associated with genuine teamwork – and thus hinders the development of team resilience.

Studies from other professional sectors have shown that high team resilience is associated with enhanced work climate and lower turnover rates (Schulte et al., 2021). In light of our findings, a lack of institutional support for team structures in schools must be acknowledged. Schools that provide space for collaboration and exchange – thus actively fostering team resilience also tend to exhibit greater organizational resilience. In contrast, where team resilience is not systematically promoted, it depends solely on the initiative of individual teachers, whose effort, while valuable, remain limited in scope and lack structural sustainability.

Our survey results suggest that targeted efforts to strengthen team resilience could have a measurable effect on teacher retention. This is particularly true for initiatives that not only encourage collaboration but also embed it structurally – through fixed meeting times, shared goals, and a culture of mutual support (Gräsel et al., 2006).

In sum, the data show that there are notable differences between constants and dropouts across all three resilience levels, with especially marked differences at the team and organizational levels. Whether and how these differences influence teachers' decisions to remain in the profession will be explored in greater detail in future analyses. Further research should also examine how resilience affects teacher retention across various school contexts. These insights may serve as a foundation for developing concrete measures to enhance teacher retention and counteract ongoing attrition.

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